LPCB Red Book

1

Part: 4

Fixed fire fighting systems

bre

Last updated: 19 Feb 2019

Introduction

BRE Global Ltd, based in the UK near London, is an independent third party organisation offering certification of fire, security and sustainability products and services to an international market. LPCB is the certification brand used for fire and security products and services. The LPCB mark is accepted worldwide. We have representative offices in China, India and Dubai. We are owned by the BRE Trust, a not-for-profit organisation.

LPCB listings can be accessed, free of charge, at www.redbooklive.com or via apps from Apple, Google and Windows.

BRE Global Ltd is also a Notified Certification Body and Notified Test Laboratory for:-

- Construction Products Regulation
- Pressure Equipment Directive
- Marine Equipment Directive
- Transport Pressure Equipment Directive

BRE Global additionally carries out:

- Fire Investigation
- Fire Risk Assessment
- Fire Safety Engineering
- Research
- Training

LPCB Listings

Listings are given in sections which list related groups of products and services such as suppression, security and so on. Each section also summarises the technical basis for the certification of each product or service. The Red Book listings should always be used in conjunction with rules, regulations and design specifications required by the relevant Authority having jurisdiction.

Listings comprise:

Volume 1: (This Volume)

- **Fire detection and alarm products, systems, and cables**
- **Manual fire extinguishing equipment**
- **Automatic sprinkler, water spray and deluge systems**
- **Fixed fire fighting products and systems**
- **Watermist systems**
- **Related installers**

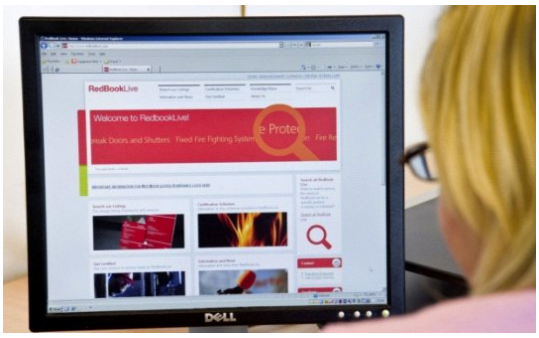
Volume 2:

- Passive fire protection products
- Security protection products
- Fire doors and shutters
- Smoke and fire ventilation systems
- Security Assessments - SABRE
- Related installers
- Management Systems
- Construction products

Listings are given in the name of the manufacturer or service provider, in alphabetical order. They can be downloaded free of charge from our website at www.redbooklive.com and also via an App that is available free from Apple iStore (for iPhone and iPad), from Google Play, (for Android phones and tablets) and Windows Store (for Windows 8 phones).

Updates

Certification of products and services are updated regularly. To ensure that you are using the most up to date information please refer to www.redbooklive.com or download from the App from the website home page.



What is Third Party Certification?

A frequent concern of stakeholders is in knowing whether a product will perform in accordance with the stated specifications. These concerns can involve such product attributes as safety, health or environmental impacts, durability, compatibility, suitability for intended purposes or for stated conditions, and other similar considerations. These issues can all be addressed through product certification.

Third party certification is a conformity assessment process, carried out by a body that is independent of both supplier and customer organisations. It provides confirmation that products and services have met and will continue to meet the requirements of specified standards and other normative documents.

LPCB third party product certification schemes are quality assurance schemes and comprise initial type testing and technical evaluation, assessment and surveillance of the manufacturer's quality system and factory production procedures, regular audit testing, labelling and listing.

Similarly, LPCB schemes for suppliers of services (installers) are also quality assurance schemes comprising a technical assessment of an installer's capability, assessment and surveillance of the installer's quality system and production procedures, regular inspection of completed installations and listing.

Benefits of Third Party Certification

For specifiers, regulators, insurers, manufacturers and installers, the benefits of an LPCB approval are:

For specifiers and regulators:

- Risk reduction - specifying LPCB approved products and services demonstrates due-diligence and best endeavour and mitigates against possible accusations of negligence.
- Avoidance of costly mistakes - you can trust LPCB approved products and services to conform each and every time.
- Time - using Red Book Live to search for and assess products and services can save you time.

For manufacturers and installers:

- Increased global sales - LPCB approval is recognised and specified widely throughout the world. In some territories LPCB approval is a mandatory requirement.
- Added value of the product or service - LPCB approved products and services are recognised as providing added value given their ability to conform each and every time.
- Reduced liability - LPCB approved products and services demonstrate due-diligence which can reduce liability for both you and your customers.

What does LPCB Certification offer?

LPCB certification is carried out against Loss Prevention Standards (LPS's). These LPS's include reference to BS, EN or ISO standards as appropriate. LPCB certification are level 5 schemes as detailed in ISO/ IEC 17067 with the added requirement to have a quality system certificated to ISO 9001.

The technical requirements of LPCB schemes are given in the Loss Prevention Standards (LPSs). These documents are drafted by LPCB technical experts in conjunction with appropriate external experts. They are then peer reviewed by representatives from trade bodies, regulators, insurers, specifiers, manufacturers and other suppliers. Finally these documents are approved for use by the BRE Global Governing Body; the Body that oversees all of the certification activities of BRE Global.

Product schemes comprise:

- Initial type testing and evaluation of product.
- Approval and surveillance of the manufacturer's (or supplier's) quality management system to ISO 9001
- Assessment and surveillance of the manufacturer's (or supplier) factory production control system (FPC).
- Periodic audit testing of the product from either the factory or marketplace.
- Labelling or marking as appropriate.
- Listing on Red Book Live

Installer schemes comprise:

- Technical assessment of the installation contractor's capability.
- Approval and surveillance of the contractor's quality management system to ISO 9001 or assessment against the requirements of the relevant Loss Prevention Standard where ISO 9001 is not appropriate.
- Regular surveillance inspections of on-going installations.
- The issue of Certificates of Conformity by the installer to demonstrate compliance for each installation.
- Listing in the Red Book.

The LPCB Mark - the Mark you can trust

After certification of a product or service the manufacturer or service provider may place the LPCB certification mark, as shown below, on the product, packaging and literature etc.

Where LPCB holds accreditation through the United Kingdom Accreditation Service (UKAS), the certified company may include the UKAS symbol (the Crown and Tick) alongside the LPCB mark for certain applications e.g. promotional literature or material and stationery, as shown below.

(Full details of LPCB accreditation can be found on the UKAS website at www.ukas.com)
Where for reasons of space or cost the use of the above full mark is not practical, then the following simplified mark may be applied directly to the product (for some schemes only). The LPCB scheme rules define how and where the marks can be used.


LPCB

CONTENTS

Part 4

FIXED FIRE FIGHTING SYSTEMS

PART 4: FIXED FIRE FIGHTING SYSTEMS

INTRODUCTION

The fixed fire extinguishing systems included in this section are for the protection of specific risks, e.g. computer rooms, switch gear, high risk production lines, commercial kitchen protection systems etc.

Great care must be taken in the choice of fire extinguishing agent with respect to life safety, damage to equipment from bi-products, venting and the time it takes to have the system operational again after a discharge incident.

In addition to careful product/system selection it is recommended that all systems are designed, installed and commissioned by third party approved contractors who have demonstrated their competence.

Listings in this section include:

Products

- Condensed aerosol extinguishing generators
- Direct low pressure (DLP) application systems
- Fine water spray components
- Fixed fire extinguishing systems for catering equipment
- Gaseous system components
- Gaseous systems

Products are approved in accordance with a range of standards, the details of which are given at the front of each section relevant to the product.

Design, installation and commissioning contractors

LPS 1204: Requirements for contractors engaged in the design, installation and commissioning of fixed fire systems.

The purpose of LPS 1204 scheme, *Requirements for firms engaged in the design, installation, commissioning and servicing of gas extinguishing systems*, is to provide an assurance that gas extinguishing systems perform correctly. It is recommended that the LPS 1204 Certificated Firm is given responsibility for the complete system, including the following aspects:

- Selection of appropriate gas type
- Extinguishing design concentration
- Check on enclosure leakage integrity
- Discharge and post discharge venting
- Electrical system integration

Certification of Fixed Systems and LPCB Certificates of Conformity
It is a requirement of the LPS 1204 scheme that Certificated Firms shall issue an LPCB Certificate of Conformity in respect of each completed system, extension and alteration. The issue of an LPCB Certificate of Conformity:
(a) certifies that the gas extinguishing system, extension or alteration has been designed, installed and commissioned in accordance with the recognised standards identified in LPS 1204 and
(b) ensures that the certificated system, extension and alteration is recorded by the LPCB.

LPCB Inspections
LPS 1204 Certificated Firms are regularly audited for their competence to design, install, commission and service gas extinguishing systems in accordance with recognised installation standards.

Additional Offices
Where a firm has additional offices, each office must meet the requirements of LPS 1204 to be eligible for certification, and is separately listed.

Provisional Approval
Firms with limited experience and track record can gain Provisional Approval in the LPS 1204 scheme. Their work is closely monitored by LPCB and when they have completed the requisite number of gas extinguishing systems contracts over a period of not less than two years, and subject to satisfactory performance, they will be given full approval and listed in this section of the Red Book.

Alberta Fire & Security Equipment Limited

San Gwakkin Road, Mriehel, BKR 3000, Malta
Tel: +356 21 443538 • Fax: +356 21 484077
E-mail: enquiries@alberta.com.mt • Website: www.alberta.com.mt

Certificate No. CFSI-017 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases and Liquefied halocarbon gases and issue LPCB Certificates of Conformity for these systems.

Chubb Fire & Security Ltd t/a Chubb Mechanical

Littleton Road, Ashford, Middlesex TW15 1TZ, United Kingdom
Tel: +44 (0)1784 425950
E-mail: mechanical@chubb.co.uk • Website: www.chubb.co.uk

Certificate No. CFSI-026 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases and Liquefied halocarbon gases and issue LPCB Certificates of Conformity for these systems.

Clymac Limited

Cloudway Court, Belton Road, Loughborough LE11 1LW, United Kingdom
Tel: +44 (0)1509 232651 • Fax: +44 (0)1509 232665
E-mail: sales@clymac.co.uk • Website: www.clymac.co.uk

Certificate No. CFSI-018 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases and Liquefied halocarbon gases and issue LPCB Certificates of Conformity for these systems.

EA-RS Fire Engineering Limited

4 Swanbridge Industrial Park, Black Croft Road, Witham, Essex CM8 3YN, United Kingdom
Tel: +44 (0)1376 503680
E-mail: onesolution@ea-rsgroup.com • Website: www.ea-rsgroup.com

Certificate No. CFS1-021 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases and Liquefied halocarbon gases and issue LPCB Certificates of Conformity for these systems.

Firecheck Contracts Limited

53 Huntercombe Lane North, Burnham SL1 6DX, United Kingdom
Tel: +44 (0)1628 660999 • Fax: +44 (0)1628 662998
E-mail: info@firecheckltd.co.uk • Website: www.firecheckltd.co.uk

Certificate No. CFSI-019 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases, Liquefied halocarbon gases and Carbon dioxide and issue LPCB Certificates of Conformity for these systems.

G.B. Electronics Limited trading as GBE Converge

GBEC House, 31 Barnett Way, Barnwood, Gloucester GL4 3RT, United Kingdom
Tel: +44 (0)8451 220884 • Fax: +44 (0)845 1220885
E-mail: info@gbeconverge.com • Website: www.gbeconverge.com

Certificate No. CFSI-029 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases and Liquefied halocarbon gases and issue LPCB Certificates of Conformity for these systems.

Gemini AMPM Ltd

18 Albert Drive, Jubilee Road, Burgess Hill, West Sussex RH15 9TN, United Kingdom
Tel: +44 (0)845 872 5999
E-mail: Sales@geminiampm.co.uk • Website: www.Geminifire.com

Certificate No. CFSI-025 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases and Liquefied halocarbon gases and issue LPCB Certificates of Conformity for these systems.

Hall & Kay Fire Services Limited trading as Hall & Kay Fire Engineering (Ascot)

Unit E - Science Park, Silwood Business Park, Ascot, Berkshire SL5 7PW, United Kingdom
Tel: +44 (0)1344 203800 • Fax: +44 (0)1344 203801
E-mail: MatthewC.Jones@hkfire.co.uk • Website: www.hkfire.co.uk

Certificate No. CFSI-009 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases and Liquefied halocarbon gases and issue LPCB Certificates of Conformity for these systems.

Interserve FS (UK) Limited

Ingenuity House, Elmdon Trading Estate, Bickenhill Lane, Birmingham B37 7HQ, United Kingdom
Tel: +44 (0)1646 623900 • Fax: +44 (0)1646 687869
E-mail: Neil.Lewis@interserve.com • Website: www.initial.co.uk/fire-services/

Certificate No. CFSI-023 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases and issue LPCB Certificates of Conformity for these systems.

Mercury Engineering

Mercury House, Sandyford Industrial Estate, Foxrock, Dublin 18 D18 XH79, Ireland
Tel: +353 1 216 3000 • Fax: +353 1 216 3006
E-mail: fireprotection@mercuryeng.com • Website: www.mercuryeng.com

Certificate No. CFSI-016 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases, Liquefied halocarbon gases and Carbon dioxide and issue LPCB Certificates of Conformity for these systems.

Protec Camerfield Limited (Firepro Division)

5 Churchill Way, Nelson, Lancashire BB9 6RT, United Kingdom
Tel: +44 (0)870 442 2644 • Fax: +44 (0)870 442 2645
E-mail: camerfield.firepro@protec.co.uk • Website: www.protec.co.uk

Certificate No. CFSI-015 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases, Liquefied halocarbon gases and Carbon dioxide and issue LPCB Certificates of Conformity for these systems.

Siemens plc, Building Technologies Division

Brunel House, Sir William Siemens Square, Frimley, Camberley, Surrey GU16 8QD, United Kingdom
Tel: +44 (0)1276 696000 • Fax: +44 (0)1276 696133
E-mail: sales.uk.sbt@siemens.com • Website: www.siemens.co.uk/buildingtechnologies

Certificate No. CFSI-004 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases, Liquefied halocarbon gases and Carbon dioxide and issue LPCB Certificates of Conformity for these systems.

Spectrum Fire Protection (UK) Limited

Middlemore Lane, Aldridge, Walsall, West Midlands WS9 8SP, United Kingdom
Tel: +44 (0)1922 744 466 • Fax: +44 (0)1922 744 477
E-mail: TechSupport@spectrumfire.co.uk • Website: www.spectrumfire.co.uk

Certificate No. CFSI-028 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases and Liquefied halocarbon gases and issue LPCB Certificates of Conformity for these systems.

Trinity Fire and Security Systems Ltd (Exeter)

Little Bridge Business Park, Oil Mill Lane, Clyst St.Mary, Exeter, Devon EX5 1AU, United Kingdom
Tel: +44 (0)1392 874455 • Fax: +44 (0)1392 875546
E-mail: info@trinityprotection.co.uk • Website: www.trinityprotection.co.uk

Certificate No. CFSI-024 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases and Liquefied halocarbon gases and issue LPCB Certificates of Conformity for these systems.

All offices listed on Trinity Fire and Security Systems Ltd's website as shown above are covered by this certificate.

Tyco Fire and Integrated Solutions (the trading company for Tyco Fire and Integrated Solutions (UK) Limited and Tyco Fire and Integrated Solutions (Ireland) Limited)

Security House, The Summit, Hanworth Road, Sunbury on Thames, Middlesex TW16 5DB, United Kingdom
Tel: +44 (0)1753 574111 • Fax: +44 (0)1753 824226
Website: www.tycofis.com

Certificate No. CFSI-011 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases and Liquefied halocarbon gases and issue LPCB Certificates of Conformity for these systems.

Tyco Fire and Integrated Solutions (the trading company for Tyco Fire and Integrated Solutions (UK) Limited and Tyco Fire and Integrated Solutions (Ireland) Limited)

180 Aztec West, Almondsbury, Bristol BS32 4TU, United Kingdom
Tel: +44 (0)1454 240071 • Fax: +44 (0)1454 626443
Website: www.tycofis.com

Certificate No. CFSI-013 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases and Liquefied halocarbon gases and issue LPCB Certificates of Conformity for these systems.

Tyco Fire and Integrated Solutions (the trading company for Tyco Fire and Integrated Solutions (UK) Limited and Tyco Fire and Integrated Solutions (Ireland) Limited)

Mucklow Office Park, Mucklow Hill, Halesowen, West Midlands B62 8DA, United Kingdom
Tel: +44 (0)121 255 6000 • Fax: +44 (0)121 255 6100
Website: www.tycofis.com

Certificate No. CFSI-005 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases and Carbon dioxide and issue LPCB Certificates of Conformity for these systems.

Tyco Fire and Integrated Solutions (the trading company for Tyco Fire and Integrated Solutions (UK) Limited and Tyco Fire and Integrated Solutions (Ireland) Limited)

Tyco Park, Grimshaw Lane, Newton Heath, Manchester M40 2WL, United Kingdom
Tel: +44 (0)161 205 2321 • Fax: +44 (0)161 455 4459
Website: www.tycofis.com

Certificate No. CFSI-002 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases and Liquefied halocarbon gases and issue LPCB Certificates of Conformity for these systems.

Vipond Fire Protection Limited

10-12 Glenfield Road, Kelvin Industrial Estate, East Kilbride, Lanarkshire G75 0RA, United Kingdom
Tel: +44 (0)1355 2375 25/80/88 • Fax: +44 (0)1355 263399
E-mail: admin.uk@vipondltd.co.uk • Website: www.vipondfire.co.uk

Certificate No. CFSI-027 to LPS 1204

Certificated to design, install, commission and service Non-liquefied inert gases, Liquefied halocarbon gases and Carbon dioxide and issue LPCB Certificates of Conformity for these systems.

The equipment listed in this section has been assessed and tested to a test schedule, suitable for the product, containing tests from both LPS and EN standards for gaseous system components. The production facilities have also been assessed to ensure that the components meet and continue to meet these standards

BRE Global is a Notified Body for the products in this section that are covered by the published parts of EN 12094.

Where a component is not covered by a published part of EN 12094 it will be evaluated against an LPCB Schedule of Requirements.

In order to function correctly the approved components must be used in accordance with the manufacturer's technical instructions.

Component approval does not mean LPCB system approval. LPCB system approval requirements are set out in Section 2.2.

AIR Fire S.p.A.

Via Tenuta della Mistica - 33/37, Rome 00155, Italy
Tel: +34 680395217
E-mail: info@airfire.eu • Website: www.airfire.eu

Certificate No: 1239Ca to EN12094-4

Container Valves

Product Name	Description	LPCB Ref. No.
071251	DN12 Container Valve 50 bar, HFC227ea & FK-5-1-12	1239Ca/01
071221	DN12 Container Valve 50 bar, HFC227ea & FK-5-1-12	
071231	DN12 Container Valve 50 bar, HFC227ea & FK-5-1-12	
072201	DN12 Container Valve 250 bar, CO_2	
072231	DN12 Container Valve 190 bar, CO_2	
072211	DN12 Container Valve 190 bar, CO_2	
072221	DN12 Container Valve 190 bar, CO_2	
073221	DN12 Container Valve 270 bar, Inert	
073201	DN12 Container Valve 270 bar, Inert	
073211	DN12 Container Valve 270 bar, Inert	
073222	DN12 Container Valve 405 bar, Inert	
073202	DN12 Container Valve 405 bar, Inert	
073212	DN12 Container Valve 405 bar, Inert	

Certificate No: 1239Ca to EN12094-4

Container Valve Actuators

Product Name	Description	LPCB Ref. No.
072202	Pneumatic actuator	1239Ca/02
072203	Manual actuator	
022001	Electrical actuator	
072213	Pneumatic /manual actuator	

Carrier Airconditioning & Refrigeration Ltd
Narsinghpur, Kherki Daula Post, Gurgaon 122 004, Haryana, India
Tel: +91-124-4825500 • Fax: +91 124 2372230
E-mail: customersupport.india@carrier.utc.com • Website: www.bis.utc.com

Certificate No: 273Cd to EN 12094 series and Schedule of Requirements

ARGONITE FIXED FIRE FIGHTING COMPONENTS

ARGONITE FIXED FIRE FIGHTING COMPONENTS
[1] This range of equipment is suitable for storage temperatures from -20°C to +50°C and is approved for use with Argonite.
[2] This range of equipment is approved for use in conjunction with the Kidde Products Design manual reference MA-01-9006-0100 (Revision 10 dated January 2008)
[3] System pressure is specified at 150 bar, 200 bar and 300 bar @ 15°C.

Certificate No: 273Cd to a Schedule of Requirements

ARGONITE Container and Container Bracket Assemblies

Product Name	Description	Capacity (ltr)	System pressure (bar)	LPCB Ref. No.
01-1331-5900	15.9 Litre Cylinder	15.9	150 (4), (5)	273Cd/01
01-1311-5900	67.5 Litre Cylinder	67.5	150 (4), (5)	
01-1321-5900	80.0 Litre Cylinder	80.0	150 (4), (5)	
01-1332-5900	15.9 Litre Cylinder	15.9	200 (4), (5)	
01-1312-5900	67.5 Litre Cylinder	67.5	200 (4), (5)	
01-1322-5900	80.0 Litre Cylinder	80.0	200 (4), (5)	
01-1334-5900	15.9 Litre Cylinder	15.9	300 (4), (5)	
01-1314-5900	67.5 Litre Cylinder	67.5	300 (4), (5)	
01-1324-5900	80.0 Litre Cylinder	80.0	300 (4), (5)	
01-1322-7100	80.0 Litre Cylinder	80.0	200 (5), (6)	273Cd/19

4. Cylinder is designed and manufactured in accordance with European Directive 2010/35/EU (TPED) through compliance with ISO 9809-2
5. A range of wall brackets, clamping bas, spacers and clamping bolts for secure container installation are also available
6. Cylinder is designed and manufactured in accordance with BS 5045-1 and is for Indian service only. Cylinder is not compliant with European Directive 84/225/EEC and the TPED.

Certificate No: 273Cd to EN12094 Part 8

ARGONITE C Series and ARGONITE Hoses

Product Name	Description	Nominal bore (mm)	System pressure (bar)	LPCB Ref. No.
01-3260-0100/1000	Actuation Hose (7)	DN5	150, 200 & 300	273Cd/03
01-3261-0100/1000	Actuation Hose (7)	DN5	150, 200 & 300	
01-3271-1100/1200	Actuation Hose (7)	DN5	150, 200 & 300	
01-3272-1100/1200	Actuation Hose (7)	DN5	150, 200 & 300	
01-3273-1100/1200	Actuation Hose (7)	DN5	150, 200 & 300	

7. Hoses are available in a veriety of lengths

Certificate No: 273Cd to EN12094 Part 8

ARGONITE Hoses

Product Name	Description	Nominal bore (mm)	System pressure (bar)	LPCB Ref. No.
01-3284-0100/0200	Discharge Hose (7)	DN9	150, 200 & 300	273Cd/03

7. Hoses are available in a veriety of lengths

Certificate No: 273Cd to a Schedule of Requirements

ARGONITE Pressure Restrictor Assemblies

Product Name	Description	Orifice size (mm)	System pressure (bar)	LPCB Ref. No.
01-370X-1030/1070 (8), (9), (10)	½" Restrictor Assembly	3-7	150, 200 & 300	273Cd/04
01-370X-3050/3180 (9)	1.0 Restrictor Assembly	5-18	150, 200 & 300	
01-370X-4120/4270 (9)	1½" Restrictor Assembly	12-27	150, 200 & 300	
01-370X-5200/5360 (9)	2.0 Restrictor Assembly	20-36	150, 200 & 300	

8. Not available with NPT Female/NPT Female or NPT Female/BSP Female connections
9. Where X can be 1 for NPT Male/ NPT Female, 2 for NPT Female/NPT Female, 3 for NPT Male/BSP Female or 4 for NPT Female/BSP Female
10. Also available with BSP Male/BSP Female (part no. 01-3706-1030/1070) or BSP Male/NPT Female connections (part no. 01-3705-1030/1070)

Certificate No: 273Cd to a Schedule of Requirements

ARGONITE C SERIES and ARGONITE Pressure Regulator Assemblies

Product Name	Description	Orifice size (mm)	System pressure (bar)	LPCB Ref. No.
01-6017-0000	Pressure Regulator	N/A	150, 200 & 300	273Cd/04

Certificate No: 273Cd to prEN12094 Part 7

ARGONITE C SERIES and ARGONITE Discharge Nozzles

Product Name	Description	Orifice size (mm)	System pressure (bar)	LPCB Ref. No.
01-3465-X2030/X2100 (11)	½" Nozzle Assembly	3-10	60	273Cd/05
01-3465-X3070/X3140 (11)	¾" Nozzle Assembly	7-14	60	
01-3465-X4100/X4180 (11)	1 Nozzle Assembly	10-18	60	
01-3465-X5150/X5260 (11)	1½" Nozzle Assembly	15-26	60	

11. Where X can be 1 for BSP or 2 for NPT connections

Certificate No: 273Cd to a Schedule of Requirements

ARGONITE Single Area Manifolds

Product Name	Description	No. cylinders	System pressure (bar)	LPCB Ref. No.
01-3506-2011 to 01-3506-2019	Single Row Discharge Manifold	1 to 10	150, 200	273Cd/06
01-3506-2021 to 01-3506-2029	Double Row Discharge Manifold	4 to 20	150, 200	
01-3506-3011 to 01-3506-3019	Single Row Discharge Manifold	1 to 10	300	
01-3506-3021 to 01-3506-3029	Double Row Discharge Manifold	4 to 20	300	

Certificate No: 273Cd to a Schedule of Requirements

ARGONITE C SERIES and ARGONITE Multi-Area Manifold Accessories

Product Name	Description	System pressure (bar)	LPCB Ref. No.
01-3508-0002	Pilot Manifold (2 Diverter Valves)	150, 200, 300 (12)	273Cd/06
01-3508-0003	Pilot Manifold (3 Diverter Valves)	150, 200, 300 (12)	
01-3508-0004	Pilot Manifold (4 Diverter Valves)	150, 200, 300 (12)	
01-3508-0005	Pilot Manifold (5 Diverter Valves)	150, 200, 300 (12)	

12. Working Pressure Outlet 8 bar

Certificate No: 273Cd to EN12094 Part 5

ARGONITE C SERIES and ARGONITE Diverter Valves

Product Name	Description	Size	System pressure (bar)	LPCB Ref. No.
01-6240-1000	Diverter Valve	½"	150, 200 & 300	273Cd/08
01-6242-1000	Diverter Valve	1	150, 200 & 300	
01-6244-1000	Diverter Valve	1½"	150, 200 & 300	
01-6246-1000	Diverter Valve	2	150, 200 & 300	

Certificate No: 273Cd to EN12094 Part 13

ARGONITE Manifold Check Valves

Product Name	Description	Nominal bore (mm)	System pressure (bar)	LPCB Ref. No.
01-6454-0000	Manifold Check Valve	½" BSP & ¾" NPT	150, 200 & 300	273Cd/09

Certificate No: 273Cd to EN12094 Part 4

ARGONITE Container Valves

Product Name	Description	System pressure (bar)	LPCB Ref. No.
01-6471-0150	Pneumatic Argonite Valve	150	273Cd/10
01-6471-0200	Pneumatic Argonite Valve	200	
01-6471-0300	Pneumatic Argonite Valve	300	

Certificate No: 273Cd to EN12094 Part 4

ARGONITE Release Valves

Product Name	Description	System pressure (bar)	LPCB Ref. No.
01-7172-1150	Release Unit	150	273Cd/11
01-7172-1200	Release Unit	200	
01-7172-1300	Release Unit	300	
01-7173-1150	Release Unit	150	
01-7173-1200	Release Unit	200	
01-7173-1300	Release Unit	300	

Certificate No: 273Cd to EN12094 Part 10

ARGONITE C SERIES and ARGONITE Pressure Monitoring Devices

Product Name	Description	System pressure (bar)	LPCB Ref. No.
01-7221-0300	Manifold Pressure Gauge ½	150, 200 & 300	273Cd/15
03-5713-0000	Discharge Pressure Switch	Max opetating pressure 90 bar	

Certificate No: 273Cd to EN12094 Part 10

ARGONITE Pressure Monitoring Devices

Product Name	Description	System pressure (bar)	LPCB Ref. No.
01-7171-1500	Pressure Gauge Unit	150	273Cd/15
01-7171-1200	Pressure Gauge Unit	200	
01-7171-1300	Pressure Gauge Unit	300	

Certificate No: 273Cd to a Schedule of Requirements

ARGONITE C SERIES and ARGONITE Pressure Relief Devices

Product Name	Description	System pressure (bar)	LPCB Ref. No.
01-6653-0001/0101	Pressure Relief Device	150	273Cd/17
01-6653-0002/0102	Pressure Relief Device	200	
01-6653-0003/0103	Pressure Relief Device	300	

Certificate No: 273Cd to EN12094 part 13 and a Schedule of Requirements

ARGONITE C SERIES and ARGONITE Pilot Line Equipment

Product Name	Description	Nominal bore (mm)	System pressure (bar)	LPCB Ref. No.
01-6363-0000	Pilot Line Check Valve	¼" BSP	150, 200 & 300	273Cd/18
01-3388-0000	Actuation Line Leak Bleeder Unit	-	150, 200 & 300	
15-8685-0651	Actuation Line T-Piece	DN5	150, 200 & 300	
01-4130-000	Actuation Line Cross	DN5	150, 200 & 300	

Ceasefire Industries Pvt. Ltd

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Certificate No: 980Aa to EN 12094-10:2003

Ceasefire Pressure gauges with switch

Product Name	Description	LPCB Ref. No.
TI-000826	0-60 bar range, 22.5 bar switch contact	980Aa/01
TI-000827	0-60 bar range, 22.5 bar switch contact	
TI-000828	0-100 bar range, 38 bar switch contact	
TI-000829	0-100 bar range, 38 bar switch contact	

Certificate No: 1239Ba to EN12094-4

Ceasefire Container Valves DN33 and DN50 for use with HFC227ea.

Product Name	Description	LPCB Ref. No.
SM-RM1994	DN33 container valve 25 bar, (60 bar burst disc)	1239Ba/01
SM-RM2132	DN33 container valve 42 bar, (95 bar burst disc)	
SM-RM2121	DN50 container valve 25 bar, (60 bar burst disc)	
SM-RM2122	DN50 container valve 42 bar, (95 bar burst disc)	

Certificate No: 1239Ba to EN12094-4

Ceasefire Container Valve Actuators

Product Name	Description	LPCB Ref. No.
SM-RM1996	Manual actuator	1239Ba/02
SM-RM2109	Pneumatic/manual actuator	
SM-RM2166	Pneumatic actuator	
SM-RM2169	Pneumatic/manual actuator (with plug)	
SM-RM2167	Pneumatic actuator (with plug)	
SM-RM2168	Pneumatic actuator	
SM-RM1995	Solenoid actuator	

Certificate No: 1239Ba to EN12094-13

Ceasefire Check Valves

Product Name	Description	LPCB Ref. No.
SM-RM2130	DN50 HFCs (70 bar)	1239Ba/03
SM-RM2080	DN33 HFCs (70 bar)	

Certificate No: 1239Ba to EN12094-8

Ceasefire Pilot and Discharge Connectors

Product Name	Description	LPCB Ref. No.
SM-RM2170x	Pilot hose DN5 F/F end couplings, 150mm long	1239Ba/04
SM-RM2192x	Pilot hose DN5 M/F end couplings, 150mm long	
SM-RM2214x	Straight discharge hose DN38 17/8 12UN F turnable/G 11/2 M, 300mm long	
SM-RM2226x	Discharge hose with 90° bend DN38 – 17/8" 12UN F turnable/G 11/2" M, 350mm long	
SM-RM2237x	Straight discharge hose DN51 – M24 x1.5mm/G ¾" 340mm long	
SM-RM2126x	Discharge hose with 90° bend, DN51 – M24 x1.5mm/G ¾" 400mm long	

Certificate No: 1329f to FprEN12094-7 and LPCB schedule of requirements

Ceasefire Nozzles for HFC227ea.

Product Name	Description	LPCB Ref. No.
XE115008	15 NB Discharge nozzle	1329f/01
XE115009	20 NB Discharge nozzle	
XE115010	25 NB Discharge nozzle	
XE115011	32 NB Discharge nozzle	
XE115012	40 NB Discharge nozzle	
XE115013	50 NB Discharge nozzle	

Note:
180° and 360° nozzles

Certificate No: 1329f to an LPCB schedule of requirements

Ceasefire Manifolds

Product Name	Description	LPCB Ref. No.
CF/Manifold/L-002	80 NB 2-Way Manifold	1329f/02
CF/Manifold/L-003	80 NB 3-Way Manifold	
CF/Manifold/L-004	80 NB 4-Way Manifold	

Note:
All manifolds are supplied with sockets to accept either DN33 or DN50 check valves

Ceodeux Extinguisher Valves Technology S.A. (Rotarex FIRETEC)

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E-mail: info@firetec.rotarex.com • Website: www.rotarex.com

Certificate No: 724a to EN 12094-4

Ceodeux CO2 Container valves

Product Name	Description	LPCB Ref. No.
B0480 0004	CO_2 Container Valve	724a/01
B0480 0005	CO_2 Container Valve	
B0480 0006	CO_2 Container Valve	
B0480 0007	CO_2 Container Valve	
B0480 0106	CO_2 Container Valve	
B0480 0107	CO_2 Container Valve	
B0480 0108	CO_2 Container Valve	
B0480 0109	CO_2 Container Valve	
B0480 0110	CO_2 Container Valve	
B0480 0111	CO_2 Container Valve	
B0480 0112	CO_2 Container Valve	
B0480 0113	CO_2 Container Valve	

1. This range of equipment is suitable for storage temperatures from -20ºC to +60ºC and is approved for use with CO2
2. This range of equipment is approved for use with Ceodeux Design Manual Reference: B 04800 - CO2 Revision: C
3. System pressure is specified as 60 bar at +20ºC

Certificate No: 724a to EN 12094-4

Ceodeux 200 bar Inert Container valves

Product Name	Description	LPCB Ref. No.
B0480 1002	200 bar Inert Container Valve	724a/02
B0480 1003	200 bar Inert Container Valve	
B0480 1206	200 bar Inert Container Valve	
B0480 1207	200 bar Inert Container Valve	
B0480 1208	200 bar Inert Container Valve	
B0480 1209	200 bar Inert Container Valve	
B0480 1210	200 bar Inert Container Valve	
B0480 1211	200 bar Inert Container Valve	
B0480 1212	200 bar Inert Container Valve	
B0480 1213	200 bar Inert Container Valve	
B0480 1219	200 bar Inert Container Valve	

1. This range of equipment is suitable for storage temperatures from -20ºC to +60ºC and is approved for use with 200 bar inert gas
2. This range of equipment is approved for use with Ceodeux Design Manual Reference B 04801 - 200 bar Revision: F
3. System pressure is specified as 200 bar at +15ºC

Certificate No: 724a to EN 12094-4

Ceodeux 300 bar Inert Container valves

Product Name	Description	LPCB Ref. No.
B0480 2007	300 bar Inert Container Valve	724a/03
B0480 2008	300 bar Inert Container Valve	
B0480 2009	300 bar Inert Container Valve	
B0480 2010	300 bar Inert Container Valve	
B0480 2012	300 bar Inert Container Valve	
B0480 2014	300 bar Inert Container Valve	
B0480 2016	300 bar Inert Container Valve	
B0480 2021	300 bar Inert Container Valve	

1. This range of equipment is suitable for storage temperatures from -20ºC to +60ºC and is approved for use with 300 bar inert gas.
2. This range of equipment is approved for use with Ceodeux Design. Manual Reference: B 04802 - 300bar Revision: K.
3. System pressure is specified as 300 bar at +15ºC.

Certificate No: 724a to EN 12094-4

Ceodeux Inert Container Valves Discharge Regulator

Product Name	Description	LPCB Ref. No.
B08400002	Inertech Discharge Constant Pressure Regulator	724a/05
B08400003	Inertech Discharge Constant Pressure Regulator	
B08400004	Inertech Discharge Constant Pressure Regulator	
B08400005	Inertech Discharge Constant Pressure Regulator	
B08400006	Inertech Discharge Constant Pressure Regulator	
B08400007	Inertech Discharge Constant Pressure Regulator	
B08400009	Inertech Discharge Constant Pressure Regulator	
NF311250	Discharge Constant Pressure Regulator	

1. This range of equipment is suitable for storage temperatures from -20ºC to +60ºC and is approved for use with 200 and 300 bar inert gas container valves listed above.
2. This range of equipment is approved for use with Ceodeux Design Manual References: 04801 - 200 bar Revision: F and B 04802 - 300bar Revision: K
3. System pressure is specified as 200 or 300 bar at +15ºC

Certificate No: 724a to EN 12094-4

Ceodeux Actuators

Product Name	Description	LPCB Ref. No.
B04420092	Pneumatic / Manual Actuator	724a/04
B04420093	Pneumatic Actuator	

Product Name	Description	LPCB Ref. No.
B04420096	Pneumatic Actuator	
B04420097	Pneumatic Actuator	
B04425131	Electrical Actuator	
B04425132	Electrical Actuator	
B04425146	Electrical Actuator	
B04425147	Electrical Actuator	
B04425148	Electrical Actuator	
B04425149	Electrical Actuator	
B04420065	Pneumatic / Manual Actuator	
B04420066	Pneumatic Actuator	
B04420076	Pneumatic Actuator	
B04420081	Pneumatic Actuator	
B04420082	Pneumatic Actuator	
B04420083	Pneumatic / Manual Actuator	
B04425137	Electrical Actuator	

1. This range of equipment is suitable for storage temperatures from -20ºC to +60ºC and is approved for use with Ceodeux CO2, 200 bar inert gas and 300 bar inert gas Container Valves.
2. This range of equipment is approved for use with Ceodeux Design Manual References: B04420065 Revision: B, B04420076 Revision: C and B04420575 Revision: C.

Eurotech Fire Protection Ltd, in collaboration with Firetec Systems Ltd

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Certificate No: 1222f to an LPCB Schedule of requirements

Inertech Manifolds

Product Name	Description	System pressure (bar)	LPCB Ref. No.
NF33x*1xx*2x*3x*4	Inertech Manifold	60	1222f/01

According to the following:
x*[1] = 5 for 267 +/- 5mm or 6 for 356 +/- 5mm diameter cylinders
xx*[2] = 50 for DN50 or 80 for DN80
x*[3] = 1 for single row or 2 for double row
x*[4] = blank for BSPT or N for NPT

Notes:
Inertech manifolds are only for use with Inertech container valves when fitted with the 60 bar constant discharge regulator (Model Ref NF311250).

Eurotech227, Eurosafe227, Eurotech1230 & Eurosafe1230 Fire Fighting Components

a. This range of equipment is suitable for storage temperatures of -20°C to 50°C and is approved for use with HFC227ea and FK 5-1-12 (Novec™ 1230)
b. HFC227ea equipment is approved for use in conjunction with Eurotech Fire Protection Ltd Design Manual Reference 'Eurotech Fire HFC227 Manual' - Issue 13-03
c. FK 5-1-12 equipment is approved for use in conjunction with Eurotech Fire Protection Ltd Design Manual Reference 'Eurotech Fire Novec1230 Manual' - Issue 13-04
d. Nominal system pressure for HFC227ea components at 20°C is stated at 25 bar or 42 bar.
e. Nominal system pressure for FK 5-1-12 components at 20°C is stated at 25 bar or 42 bar.

Certificate No: 1222b to EN 12094-4

Eurotech227, Eurosafe227, Eurotech1230 & Eurosafe1230 Container Valves

Product Name	Description	LPCB Ref. No.
NF21330x (1)	33mm Container Valve	1222b/01
NF21331x (1)	33mm Container Valve with Integral Solenoid Actuator	1222b/02
NF21490x (1)	49mm Container Valve	1222b/03

Product Name	Description	LPCB Ref. No.
NF21491x (1)	49mm Container Valve with Integral Solenoid Actuator	1222b/04

1. Where 'x' in container valve part number is replaced with '2' for 25 bar nominal charge pressure or '4' for 42 bar nominal charge pressure.

Certificate No: 1222b to EN 12094-8

Eurotech227, Eurosafe227, Eurotech1230 & Eurosafe1230 Flexible Connectors

Product Name	Description	LPCB Ref. No.
NF271xxx (1)	Pilot hose (Type 3 Connector)	1222b/09
NF2333xxx (1)	33mm Discharge hose (Type 1 Connector)	1222b/10
NF2349xxx (1)	49mm Discharge hose (Type 1 Connector)	1222b/11

Notes:

1. Where 'xxx' in connector part number is replaced with the connector length in mm, up to a maximum of 999mm.

Certificate No: 1222b to EN 12094-13

Eurotech227, Eurosafe227, Eurotech1230 & Eurosafe1230 Check and Non Return Valves

Product Name	Description	LPCB Ref. No.
NF2433x (2)	33mm Discharge Check Valve	1222b/12
NF2449x (2)	49mm Discharge Check Valve	1222b/13

Notes:

2. Where 'x' in connector part number is replaced with replaced with '1' for BSPT thread or '2' for NPT thread.

Certificate No: 1222c to prEN 12094-7

Eurotech227, Eurosafe227, Eurotech1230 & Eurosafe1230 Nozzles

Product Name	Description	LPCB Ref. No.
NF2515 xyzzz (1,2,3)	15mm Nozzle	1222c/01
NF2520 xyzzz (1,2,3)	20mm Nozzle	1222c/02
NF2525 xyzzz (1,2,3)	25mm Nozzle	1222c/03
NF2532 xyzzz (1,2,3)	32mm Nozzle	1222c/04
NF2540 xyzzz (1,2,3)	40mm Nozzle	1222c/05
NF2550 xyzzz (1,2,3)	50mm Nozzle	1222c/06

Notes:

1) Where 'x' in nozzle part number is replaced with '1' for NPT thread or '2' for BSPT thread.
2) Where 'y' in nozzle part number is replaced with '1' for 180° coverage pattern or '2' for 360° coverage pattern.
3) Approved drilling size range is 3mm to 14.5mm where 'zzz' in nozzle part number is the nozzle drill size (00.0mm) in increments of 0.1mm up to 10mm and increments of 0.5mm for sizes above 10mm.

Inertech Firefighting Components

a. This Range of equipment is suitable for storage temperatures of -20°C to 50°C and is approved for use with IG-01, IG-55, IG-100 and IG-541.
b. Inertech equipment is approved for use in conjunction with Eurotech Fire Protection Ltd Design Manual Reference 'Eurotech Inertech Manual' Issue June 13
c. Nominal system pressure for Inertech components at 15°C is stated at 200 bar or 300 bar

Certificate No: 1222d to EN 12094-4

Inertech Container Valves and Regulator

Product Name	Description	LPCB Ref. No.
NF311202	Inertech 200 bar Container Valve	1222d/02
NF311203	Inertech 300 bar Container Valve	1222d/03
NF311250	Inertech Discharge Constant Pressure Regulator	1222d/05

Certificate No: 1222d to EN 12094-4

Eurotech227, Eurosafe227, Eurotech1230, Eurosafe1230 & Inertech Container Valve Actuators

Product Name	Description	LPCB Ref. No.
NF26010	Solenoid Actuator	1222d/04
NF26011	Solenoid Actuator with reverse EMF diode	
NF26020	Pneumatic Actuator	
NF26030	Pneumatic/Manual Actuator	

Certificate No: 1222b to EN 12094-8

Inertech Flexible Connectors

Product Name	Description	LPCB Ref. No.
NF3312xxx (1)	Inertech Discharge Hose	1222b/14
NF370xxx (1)	Inertech Actuation Hose	1222b/15

Note:
1. Where 'xxx' in connector part number is replaced with the connector length in mm; i.e. 300, 400 and 500mm for discharge connectors and 350, 450 and 600mm for actuation connectors.

Certificate No: 1222b to EN 12094-13

Inertech Check Valve

Product Name	Description	LPCB Ref. No.
NF34131	Inertech Check Valve	1222b/16

Certificate No: 1222c to prEN 12094-7

Inertech Nozzles

Product Name	Description	LPCB Ref. No.
NF35151 (1)	Inertech Nozzle DN15 180° & 360°	1222c/07
NF35152 (1)	Inertech Nozzle DN15 180° & 360°	
NF35201	Inertech Nozzle DN20 180° & 360°	1222c/08
NF35251	Inertech Nozzle DN25 180° & 360°	1222c/09
NF35321	Inertech Nozzle DN32 180° & 360°	1222c/10
NF35401	Inertech Nozzle DN40 180° & 360°	1222c/11
NF35501	Inertech Nozzle DN50 180° & 360°	1222c/12

Note:
1. Nozzle NF35152 is as NF35151 with additional strainer/filter to allow openings below 3mm.

Certificate No: 1222b to EN 12094-5

Selector Valves

Product Name	Description	Working Pressure	LPCB Ref. No.
NF34015 (1)	Inertech Selector Valve DN15	60 bar	1222b/17
NF34020 (1)	Inertech Selector Valve DN20	60 bar	
NF34025 (1)	Inertech Selector Valve DN25	60 bar	
NF34032 (1)	Inertech Selector Valve DN32	60 bar	
NF34040 (1)	Inertech Selector Valve DN40	60 bar	
NF34050 (1)	Inertech Selector Valve DN50	60 bar	

Firefighting Components - Selector Valves:

a. This range of equipment is suitable for storage temperatures of -20°C to 50°C and is approved for used with IG-01, IG-55, IG-100 and IG-541.

b. Inertech equipment is approved for use in conjunction with Eurotech Fire Protection Ltd Design Manual Reference 'Eurotech Inertech Manual' Issue June 2013.

c. Nominal system pressure for Inertech components at 15°C is stated at 200 bar or 300 bar.

d. This range of equipment is suitable for storage temperatures of -20°C to 50°C and is approved for use with HFC227ea and FK 5-1-12 (Novec™ 1230).

e. HFC227ea equipment is approved for use in conjunction with 'Eurotech Fire Protection Ltd Design Manual Reference 'Eurotech Fire HFC227 Manual' - Issue 13-03.

f. FK 5-1-12 equipment is approved for use in conjunction with 'Eurotech Fire Protection Ltd Design Manual Reference 'Eurotech Fire Novec1230 Manual' - Issue 13-04.

g. Nominal system pressure for HFC227ea components at 20°C is stated at 25 bar or 42 bar.Nominal system pressure for FK 5-1-12 components at 20°C is stated at 25 bar or 42 bar.

Notes:
Selector valves are only for use with Inertech agents when the container valves are fitted with the 60 bar constant discharge regulator (Model Ref NF311250). The Working Pressure is specified as ≤ 60 bar for all agents and temperatures in accordance with the Note in Table 1 of EN 12094-5.

Certificate No: 1222e to IS 7285-2:2004

Inertech Cylinders - PESO (Seamless)

Product Name	Description	LPCB Ref. No.
51152677-1-xxx (1,4,6)	Inertech 300 bar WP nominal 267mm diameter Seamless Cylinder (PESO)	1222e/01
51173568-1-yyy (2,4,7)	Inertech 300 bar WP nominal 356mm diameter Seamless Cylinder (PESO)	1222e/02
51126726-2-zzz (3,5,8)	Inertech 200 bar WP nominal 267mm diameter Seamless Cylinder (PESO)	1222e/03

Notes:

1. Cylinders are approved for use in the Indian service market only in accordance with IS 7285-2:2004 by Chief Controller of Explosives (Reference G3(42)530/II) fitted with Valve Reference G3(4)201 [P/N NF311203]. The cylinders do not comply with European Directive 84/225/EEC or TPED.
2. Cylinders are approved for use in the Indian service market only in accordance with IS 7285-2:2004 by Chief Controller of Explosives (Reference G3(42)530/III) fitted with Valve Reference G3(4)201. [P/N NF311203] The cylinders do not comply with European Directive 84/225/EEC or TPED.
3. Cylinders are approved for use in the Indian service market only in accordance with IS 7285-2:2004 by Chief Controller of Explosives (Reference G3(42)530/I) fitted with Valve Reference G3(4)201. [P/N NF311203]The cylinders do not comply with European Directive 84/225/EEC or TPED.
4. Maximum Working Pressure 300 Bar @ 15°C.
5. Maximum Working Pressure 200 Bar @ 15°C.
6. Where, 'xxx' in the seamless cylinder part number is replaced with the cylinder capacity in litres; applicable sizes are 90, 95 or 100 litres only.
7. Where, 'yyy' in the seamless cylinder part number is replaced with the cylinder capacity in litres; applicable sizes are 120, 125, 130, 135, 140, 145, 150, 155, 160, 165, 170, 175, 180 litres only.
8. Where, 'zzz' in the seamless cylinder part number is replaced with the cylinder capacity in litres; applicable sizes are 35, 40, 45, 50, 56, 60, 68, 80 litres only.

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Certificate No: 980Ba to EN12094-10

Pressure gauges with switch

Product Name	Description	LPCB Ref. No.
02-12391	0-40 bar range	980Ba/01
02-14229	0-250 bar range	
02-14694	0-250 bar range	
02-12562	0-250 bar range	
02-12561	0-315 bar range	
02-12560	0-400 bar range	

Certificate No: 331v

ProInert Fixed Gas System Components

- This range of equipment is suitable for storage from -20° to 50°C
- This range of equipment is approved for use in conjunction with Fike Design, Installation, Maintenance and User Manual P/N 06-677 rev 2, 06-678 rev 2, 06-679 rev 2 & 06-680 rev 2
- ProInert is supplied in Containers at either 200 or 300 bar @ 15°C
- These components are suitable for use with IG-01, IG-55, IG-100 and IG-541
- System pressure downstream of container valves is specified as 42 bar nominal

Certificate No: 331v

PROINERT Container Valves

Product Name	Description	LPCB Ref. No.
IG71-001-1	300 bar	331v/01
IG71-001-2	200 bar	

- This range of equipment is suitable for storage from -20° to 50°C
- This range of equipment is approved for use in conjunction with Fike Design, Installation, Maintenance and User Manual P/N 06-677 rev 2, 06-678 rev 2, 06-679 rev 2 & 06-680 rev 2
- ProInert is supplied in Containers at either 200 or 300 bar @ 15°C
- These components are suitable for use with IG-01, IG-55, IG-100 and IG-541
- System pressure downstream of container valves is specified as 42 bar nominal

Certificate No: 331v

PROINERT Container Valve Assemblies

Product Name	Description	LPCB Ref. No.
IG71-006-300	10L-300 bar	331v/09
IG71-067-200	67L-200 bar	
IG71-080-200-01	80L-200 bar	
IG71-080-300-01	80L-300 bar	
IG71-080-200-55	80L-200 bar	
IG71-080-300-55	80L-300 bar	
IG71-080-200-100	80L-200 bar	
IG71-080-300-100	80L-300 bar	
IG71-080-200-541	80L-200 bar	

Product Name	Description	LPCB Ref. No.
IG71-080-300-541	80L-300 bar	
IG71-103-200-55	80L-300 bar	
IG71-103-300-55	80L-300 bar	
IG71-103-200-100	80L-200 bar	
IG71-103-300-100	80L-300 bar	
IG71-103-200-541	80L-200 bar	
IG71-103-300-541	80L-300 bar	
IG71-140-200-01	140L-200 bar	
IG71-140-300-01	140L-300 bar	
IG71-140-200-55	140L-200 bar	
IG71-140-300-55	140L-300 bar	
IG71-140-200-100	140L-200 bar	
IG71-140-300-100	140L-300 bar	
IG71-140-200-541	140L-200 bar	
IG71-140-300-541	140L-300 bar	

- This range of equipment is suitable for storage from -20° to 50°C
- This range of equipment is approved for use in conjunction with Fike Design, Installation, Maintenance and User Manual P/N 06-677 rev 2, 06-678 rev 2, 06-679 rev 2 & 06-680 rev 2
- ProInert is supplied in Containers at either 200 or 300 bar @ 15°C
- These components are suitable for use with IG-01, IG-55, IG-100 and IG-541
- System pressure downstream of container valves is specified as 42 bar

Certificate No: 331v

PROINERT Actuators

Product Name	Description	LPCB Ref. No.
IG71-002	Pneumatic actuator	331v/02
02-13571	Electrical/manual actuator	

- This range of equipment is suitable for storage from -20° to 50°C
- This range of equipment is approved for use in conjunction with Fike Design, Installation, Maintenance and User Manual P/N 06-677 rev 2, 06-678 rev 2, 06-679 rev 2 & 06-680 rev 2
- ProInert is supplied in Containers at either 200 or 300 bar @ 15°C
- These components are suitable for use with IG-01, IG-55, IG-100 and IG-541
- System pressure downstream of container valves is specified as 42 bar

Certificate No: 331v

PROINERT Pressure Gauges

Product Name	Description	LPCB Ref. No.
02-14229/14964	200 bar gauge	331v/03
02-12562	160 bar gauge	
02-12560	300 bar gauge	
02-12561	200 bar gauge	

- This range of equipment is suitable for storage from -20° to 50°C
- This range of equipment is approved for use in conjunction with Fike Design, Installation, Maintenance and User Manual P/N 06-677 rev 2, 06-678 rev 2, 06-679 rev 2 & 06-680 rev 2
- ProInert is supplied in Containers at either 200 or 300 bar @ 15°C
- These components are suitable for use with IG-01, IG-55, IG-100 and IG-541
- System pressure downstream of container valves is specified as 42 bar nominal

Certificate No: 331v

PROINERT Pilot Actuation Packages

Product Name	Description	LPCB Ref. No.
70-325-2 (1)	Nitrogen Actuator Assembly (Normally Open Pressure Switch Contacts)	331v/04
70-325-4 (1)	Nitrogen Actuator Assembly (Normally Closed Pressure Switch Contacts)	

Product Name	Description	LPCB Ref. No.
IG71-120 (1)	Relay Actuator	
IG71-118	Primary ProInert Actuator Kit	
IG71-119	Secondary ProInert Actuator Kit	

- This range of equipment is suitable for storage from -20° to 50°C
- This range of equipment is approved for use in conjunction with Fike Design, Installation, Maintenance and User Manual P/N 06-677 rev 2, 06-678 rev 2, 06-679 rev 2 & 06-680 rev 2
- ProInert is supplied in Containers at either 200 or 300 bar @ 15°C
- These components are suitable for use with IG-01, IG-55, IG-100 and IG-541
- System pressure downstream of container valves is specified as 42 bar nominal

Note:

(1) These items are also approved for use with Fike clean agent container valves 331x/03, 331x/04 and 331x/05

Certificate No: 331v

PROINERT Flexible Connectors

Product Name	Description	LPCB Ref. No.
02-10721	Discharge hose - Inert gas	331v/05
02-10798	Pneumatic hose - Valve actuator	
02-10801	Pneumatic hose - Pilot actuator	
02-13713	Pneumatic hose - Pilot connector	

- This range of equipment is suitable for storage from -20° to 50°C
- This range of equipment is approved for use in conjunction with Fike Design, Installation, Maintenance and User Manual P/N 06-677 rev 2, 06-678 rev 2, 06-679 rev 2 & 06-680 rev 2
- ProInert is supplied in Containers at either 200 or 300 bar @ 15°C
- These components are suitable for use with IG-01, IG-55, IG-100 and IG-541
- System pressure downstream of container valves is specified as 42 bar nominal

Certificate No: 331v to EN 12094-13

PROINERT Check Valve

Product Name	Description	LPCB Ref. No.
IG71-008	Check valve	331v/06
02-10927	Non-Return Valve	

- This range of equipment is suitable for storage from -20° to 50°C
- This range of equipment is approved for use in conjunction with Fike Design, Installation, Maintenance and User Manual P/N 06-677 rev 2, 06-678 rev 2, 06-679 rev 2 & 06-680 rev 2
- ProInert is supplied in Containers at either 200 or 300 bar @ 15°C
- These components are suitable for use with IG-01, IG-55, IG-100 and IG-541
- System pressure downstream of container valves is specified as 42 bar nominal

Certificate No: 331v

PROINERT Manifold

Product Name	Description	LPCB Ref. No.
IG71-004-2	2-way manifold	331v/07
IG71-004-3	3-way manifold	
IG71-004-4	4-way manifold	
IG71-004-5	5-way manifold	

- This range of equipment is suitable for storage from -20° to 50°C
- This range of equipment is approved for use in conjunction with Fike Design, Installation, Maintenance and User Manual P/N 06-677 rev 2, 06-678 rev 2, 06-679 rev 2 & 06-680 rev 2

- ProInert is supplied in Containers at either 200 or 300 bar @ 15°C
- These components are suitable for use with IG-01, IG-55, IG-100 and IG-541
- System pressure downstream of container valves is specified as 42 bar nominal

Certificate No: 331v

PROINERT Nozzles

Product Name	Description	LPCB Ref. No.
IG71-010-XXX	15mm	331v/08
IG71-011-XXX	20mm	
IG71-012-XXX	25mm	
IG71-013-XXX	40mm	

- This range of equipment is suitable for storage from -20° to 50°C
- This range of equipment is approved for use in conjunction with Fike Design, Installation, Maintenance and User Manual P/N 06-677 rev 2, 06-678 rev 2, 06-679 rev 2 & 06-680 rev 2
- ProInert is supplied in Containers at either 200 or 300 bar @ 15°C
- These components are suitable for use with IG-01, IG-55, IG-100 and IG-541
- System pressure downstream of container valves is specified as 42 bar nominal

Certificate No: 331v

PROINERT Selector Valves

Product Name	Description	Working Pressure(bar)	LPCB Ref. No.
IG71-025-SV3	25mm selector valve	64	331v/10
IG71-040-SV3	40mm selector valve	64	
IG71-050-SV3	50mm selector valve	64	
IG71-080-SV3	80mm selector valve	64	

- This range of equipment is suitable for storage from -20° to 50°C
- This range of equipment is approved for use in conjunction with Fike Design, Installation, Maintenance and User Manual P/N 06-677 rev 2, 06-678 rev 2, 06-679 rev 2 & 06-680 rev 2
- ProInert is supplied in Containers at either 200 or 300 bar @ 15°C
- These components are suitable for use with IG-01, IG-55, IG-100 and IG-541
- System pressure downstream of container valves is specified as 42 bar nominal
- A manifold relief valve, rated at 55 bar, must be incorporated in any Fike ProInert system that includes any of these selector valves.
- Minimum pneumatic operating pressure required is 8 bar.

Certificate No: 331x

CLEAN AGENT Pilot Actuation Packages

Product Name	Description	LPCB Ref. No.
70-339	Primary Clean Agent Actuator Completer Kit	331x/01
70-340	Secondary Clean Agent Actuator Completer Kit	

Notes:
This equipment is suitable for use at storage temperatures from -20°C to 50°C

Certificate No: 331x

CLEAN AGENT Flexible connectors

Product Name	Description	LPCB Ref. No.
02-4977	Actuator hose - Pilot Actuator	331x/02

Note:
This equipment is suitable for use at storage temperatures from -20ºC to 50ºC

Certificate No: 331x

CLEAN AGENT 12mm Container Valve

Product Name	Description	LPCB Ref. No.
70-187-X	12mm Container Master Valve	331x/03
70-188	12mm Container Slave Valve	

Notes:
This equipment is suitable for use at storage temperatures from -20ºC to 50ºC
Containers are superpressurised to 25bar at 21ºC with maximum system working pressures@ 50ºC as follows;
HFC227ea - 34.6 bar; fill ratios 0.5 kg/l min. to 1.1 kg/l max.
HFC125 - 37.2 bar; fill ratios 0.4 kg/l min. to 0.8 kg/l max.
CO_2 - 140 bar

Certificate No: 331x

CLEAN AGENT SAV Container Valve

Product Name	Description	LPCB Ref. No.
70-144-X	SAV Container Valve	331x/04

Notes:
This equipment is suitable for use at storage temperatures from 0°C to 50°C;
Containers are superpressurised to 25bar at 21ºC with maximum system working pressures @ 50°C as follows;
HFC227ea - 34.6 bar; fill ratios 0.5 kg/l min. to 1.1 kg/l max.
HFC125 - 37.2 bar; fill ratios 0.4 kg/l min. to 0.8 kg/l max.
Fike pneumatic actuation pack IG71-002 is used for actuation of these valves.

Certificate No: 331x

CLEAN AGENT Impulse Container Valves

Product Name	Description	LPCB Ref. No.
70-243	3" Impulse Container Valve	331x/05
70-242	1" Impulse Container Valve	

Notes:
The following equipment is suitable for use at storage temperatures from-20°C to 50°C
Containers are superpressurised to 25bar at 21ºC with maximum system working pressures @ 50°C as follows;
HFC227ea - 34.6 bar; fill ratios 0.5 kg/l min. to 1.1 kg/l max.
FK-5-1-12 – 29.0 bar; fill ratios 0.32 kg/l min. to 1.15 kg/l max.

Certificate No: 331x

CLEAN AGENT Container Valve Actuators

Product Name	Description	LPCB Ref. No.
02-12728	Electronic/manual actuator	331x/06
02-12729	Pneumatic actuator	
70-290	Impulse Releasing Interface	
02-14231	Direct Impulse Valve actuator	

Certificate No: 331x

CLEAN AGENT Impulse Valve and Container Assemblies

Product Name	Description	LPCB Ref. No.
70-348	1 Valve 5L HFC227ea	331x/07
70-349	1 Valve 9L HFC227ea	
70-350	1 Valve 16L HFC227ea	
70-278	1" Valve 26L HFC227ea	
70-255	1" Valve 45L HFC227ea	
70-256	3" Valve 83L HFC227ea	

Product Name	Description	LPCB Ref. No.
70-257	3" Valve 150L HFC227ea	
70-377-R-NA	1" Valve 5L FK-5-1-12	
70-378-R-NA	1" Valve 9L FK-5-1-12	
70-379-R-NA	1" Valve 16L FK-5-1-12	
70-380-R-NA	1 Valve 26L FK-5-1-12	
70-381-R-NA	1 Valve 45L FK-5-1-12	
70-382-R-NA	3 Valve 83L FK-5-1-12	
70-383-R-NA	3 Valve 150L FK-5-1-12	

Fire Eater A/S

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Certificate No: 1287a

Fire Eater Containers and Hand Wheel Valve Assemblies for INERGEN (200 bar) and (300 bar)

Product Name	Description	Hand Wheel Valve Outlet Thread	LPCB Ref. No.
200604	20 litre cylinder (200 bar)	W24.32 x 1¼	1287a/01
200606	30 litre cylinder (200 bar)	W24.32 x 1¼	
200610	50 litre cylinder (200 bar)	W24.32 x 1¼	
200616	80 litre cylinder (200 bar)	W24.32 x 1¼	
200609	30 litre cylinder (300 bar)	M25 x 1.5	
200615	50 litre cylinder (300 bar)	M25 x 1.5	
200624	80 litre cylinder (300 bar)	M25 x 1.5	
200642	140 litre cylinder (300 bar)	M25 x 1.5	

1. This range of equipment is suitable for storage and environmental conditions from -20°C to +65°C and is approved for use with INERGEN (IG541).
2. Nominal system pressure is specified as 200 bar and 300 bar at 15°C .

Certificate No: 1287a to EN12094-4

Fire Eater Discharge Valves

Product Name	Description	LPCB Ref. No.
305421	Ci IV8 container valve (200 bar)	1287a/02
305411	Ci IV8 container valve (300 bar)	
305420	Ci IV8 container valve (200 bar) + Manoswitch	1287a/03
305410	Ci IV8 container valve (300 bar) + Manoswitch	

1. This range of equipment is suitable for storage and environmental conditions from -20ºC to +65ºC and is approved for use with INERGEN (IG541).
2. Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.
3. The above discharge valves may be actuated by any of the actuators listed below or by built-in pneumatic actuator via pilot or manifold back-pressure.

Certificate No: 1287a to EN12094-4

Fire Eater Discharge Valve Actuators

Product Name	Description	LPCB Ref. No.
305450	Ci IS8B solenoid actuator	1287a/04
305451	Ci IS8B solenoid and manual actuator	
305442	Ci IM8 manual actuator	

Product Name	Description	LPCB Ref. No.
305448	Ci PA8 pneumatic actuator	

1. This range of equipment is suitable for storage and environmental conditions from -20ºC to +65ºC and is approved for use with INERGEN (IG541).
2. Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 1287a to EN12094-10

Fire Eater Pressure Gauge and Switch

Product Name	Description	LPCB Ref. No.
305373	Manoswitch 0-284 bar	1287a/05
305374	Manoswitch 0-431 bar	

1. This range of equipment is suitable for storage and environmental conditions from -20ºC to +65ºC and is approved for use with INERGEN (IG541).
2. Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 1287a to EN12094-8

Fire Eater Connectors

Product Name	Description	LPCB Ref. No.
303302	Ci DN10 discharge hose with straight ends, 0.5 m	1287a/06
303304	Ci DN10 discharge hose with straight ends, 1 m	
303306	Ci DN10 discharge hose with straight ends, 1.5 m	
303308	Ci DN10 discharge hose with straight ends, 2 m	
303309	Ci DN10 discharge hose with straight ends, 2.5 m	
303311	Ci DN10 discharge hose with straight ends, 3 m	
303313	Ci DN10 discharge hose with straight ends, 4 m	
303102	Ci DN10 discharge hose with 90° elbow one end, 0.5 m	
303104	Ci DN10 discharge hose with 90° elbow one end, 1 m	
303106	Ci DN10 discharge hose with 90° elbow one end, 1.5 m	
303108	Ci DN10 discharge hose with 90° elbow one end, 2 m	
303109	Ci DN10 discharge hose with 90° elbow one end, 2.5 m	
303111	Ci DN10 discharge hose with 90° elbow one end, 3 m	
303113	Ci DN10 discharge hose with 90° elbow one end, 4 m	
303162	Ci DN6 pilot hose PA1 with straight ends, 0.18 m	1287a/07
303166	Ci DN6 pilot hose PA1 with straight ends, 0.22 m	
303169	Ci DN6 pilot hose PA1 with straight ends, 0.25 m	
303172	Ci DN6 pilot hose PA1 with straight ends, 0.28 m	
303174	Ci DN6 pilot hose PA1 with straight ends, 0.33 m	
303180	Ci DN6 pilot hose PA1 with straight ends, 0.5 m	
205064	Ci DN6 pilot hose PA1 with straight ends, 0.4 m	
205063	Ci DN6 pilot hose PA1 with straight ends, 1.0 m	
303182	Ci DN6 pilot hose PA2 with 90° elbow one end, 1 m	
303183	Ci DN6 pilot hose PA2 with 90° elbow one end, 3 m	
303184	Ci DN6 pilot hose PA2 with 90° elbow one end, 0.4 m	
303155	Ci DN6 pilot hose PA3 with 90° elbow each end, 0.35 m	
303156	Ci DN6 pilot hose PA3 with 90° elbow each end, 0.45 m	

1. This range of equipment is suitable for storage and environmental conditions from -20ºC to +65ºC and is approved for use with INERGEN (IG541).
2. Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 1287a to EN12094-13

Fire Eater Manifold and Check Valve / Non Return Valve Assemblies

Product Name	Description	LPCB Ref. No.
3057xx	Ci MT manifold assembly	1287a/08
30517n	SV22 manifold kit	
305302	DN6 pilot line non-return valve	

xx = number of discharge connectors up to a maximum of 10. Each connection is fitted with an integral check valve device
n = number of discharge connectors up to a maximum of 8. Each connection is fitted with an integral non-return valve device

1. This range of equipment is suitable for storage and environmental conditions from -20ºC to +65ºC and is approved for use with INERGEN (IG541).
2. Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 1287a to prEN12094-7 and LPCB schedule

Fire Eater Nozzles

Product Name	Description	LPCB Ref. No.
210203	DN15 360° nozzle (1-3mm DN orifices) (1)	1287a/09
210204	DN15 360° nozzle (1)	
210206	DN20 360° nozzle (1)	
210208	DN25 360° nozzle (1)	
210210	DN32 360° nozzle (1)	
210223	DN15 360° nozzle (1-3mm DN orifices) (2)	
210224	DN15 360° nozzle (2)	
210226	DN20 360° nozzle (2)	
210228	DN25 360° nozzle (2)	
210230	DN32 360° nozzle (2)	
210123	½" IN nozzle silencer 112	
210125	½" IN nozzle silencer	
210126	¾" IN nozzle silencer	
210128	1 IN nozzle silencer	

(1) = ISO7/1 thread
(2) = NPT thread
1. This range of equipment is suitable for storage and environmental conditions from -20ºC to +65ºC and is approved for use with INERGEN (IG541).
2. Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

FiWaRec Valves & Regulators GmbH & Co. KG

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Certificate No: 1239a to EN12094-4

Container Valves DN12

Product Name	Description	LPCB Ref. No.
F2020001	DN12 Container Valve 50 bar, HFC227ea & FK-5-1-12	1239a/01
F2020003	DN12 Container Valve 50 bar, HFC227ea & FK-5-1-12	
F2020005	DN12 Container Valve 50 bar, HFC227ea & FK-5-1-12	
F2021000	DN12 Container Valve 250 bar, CO_2	
F2021001	DN12 Container Valve 190 bar, CO_2	
F2021002	DN12 Container Valve 190 bar, CO_2	
F2021003	DN12 Container Valve 190 bar, CO_2	
F2021004	DN12 Container Valve 190 bar, CO_2	
F2022000	DN12 Container Valve 270 bar, Inert	
F2022001	DN12 Container Valve 270 bar, Inert	
F2022002	DN12 Container Valve 270 bar, Inert	
F2023000	DN12 Container Valve 405 bar, Inert	
F2023001	DN12 Container Valve 405 bar, Inert	
F2023002	DN12 Container Valve 405 bar, Inert	
F2023003	DN12 Container Valve 405 bar, Inert	

All above items to be used in accordance with the relevant Instruction Manual

Certificate No: 1239a to EN12094-4

Container Valves DN33 and DN50 for use HFC125, HFC227ea & FK-5-1-12

Product Name	Description	LPCB Ref. No.
F2050003	DN33 Container Valve 50 bar, (60 bar burst disc)	1239a/03
F2050004	DN33 Container Valve 50 bar, (95 bar burst disc)	
F2050005	DN33 Container Valve 50 bar, (95 bar burst disc)	
F2050006	DN33 Container Valve 50 bar, (95 bar burst disc)	
F2050007	DN33 Container Valve 50 bar, (60 bar burst disc)	
F2050008	DN33 Container Valve 50 bar, (60 bar burst disc)	
F2050009	DN33 Container Valve 50 bar, (95 bar burst disc)	
F2060004	DN50 Container Valve 50 bar, (60 bar burst disc)	1239a/04
F2060005	DN50 Container Valve 50 bar, (95 bar burst disc)	
F2060007	DN50 Container Valve 50 bar, (95 bar burst disc)	
F2060008	DN50 Container Valve 50 bar, (95 bar burst disc)	
F2060009	DN50 Container Valve 50 bar, (60 bar burst disc)	
F2060010	DN50 Container Valve 50 bar, (60 bar burst disc)	
F2060011	DN50 Container Valve 50 bar, (95 bar burst disc)	

All above items to be used in accordance with the relevant Instruction Manual

Certificate No: 1239a to EN12094-4

Container Valve Actuators

Product Name	Description	LPCB Ref. No.
F1120004	Electrical actuator	1239a/02
F1120005	Manual actuator	
F1120006	Pneumatic /manual actuator	
F1120007	Pneumatic actuator	
F1120008	Pneumatic actuator	
F1120009	Pneumatic /manual actuator (with plug)	
F1120010	Pneumatic actuator (with plug)	
F1120011	Pneumatic actuator	
F1120015	Pneumatic actuator	
F1120016	Pneumatic actuator	
F1120019	Pneumatic actuator	
F1120020	Manual actuator	
F1120021	Electrical actuator	
F1120023	Pneumatic /manual actuator	
F1120030	Electrical actuator	

All above items to be used in accordance with the relevant Instruction Manual

Certificate No: 1239a to EN12094-8

Connectors

Product Name	Description	LPCB Ref. No.
F104xxxx	Pilot connector (type 3) inert gas (360 bar) DN5 150-1500mm	1239a/05
F105xxxx	Discharge connector (type 1) inert gas (360 bar) DN12 250-1200mm	
F106xxxx	Discharge connector (type 1) inert gas (360 bar) DN16 250-1200mm	
F107xxxx	Discharge connector (type 1) HFCs (70 bar) DN38 300-1500mm	
F108xxxx	Discharge connector (type 1) HFCs (70 bar) DN50 300-1500mm	

Note:
Various combinations of 0° and 90° end fittings are available for the above items

Certificate No: 1239a to EN12094-13

Check Valves

Product Name	Description	LPCB Ref. No.
F017	DN12 inert gas (360 bar)	1239a/06
F018	DN50 HFCs (70 bar)	
F019	DN33 HFCs (70 bar)	

Certificate No: 1239a to EN12094-13

Non-Return Valve

Product Name	Description	LPCB Ref. No.
F016	DN4 (360 bar)	1239a/07

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Certificate No: 331Ax to EN 12094-4

CLEAN AGENT Impulse Container Valves

Product Name	Description	LPCB Ref. No.
AZ-70-242	1" Impulse Container Valve	331Ax/05
AZ-70-243	3" Impulse Container Valve	

Notes:

- The range of equipment is approved for use in conjunction with Ayvaz Equipment, Design & Service Manual P/N AZ-06-439 (Rev. 0 / October, 2018)

- The following equipment is suitable for use at storage temperatures from-20˚C to 50°C

- Containers are superpressurised to 25bar at 21˚C

- Maximum system working pressure at 50°C for HFC227ea is 34.6 bar; fill ratios 0.5 kg/l min. to 1.1 kg/l max.

Certificate No: 331Ax to EN 12094-4

CLEAN AGENT Container Valve Actuators

Product Name	Description	LPCB Ref. No.
AZ-02-12728	Electronic/manual actuator	331Ax/06
AZ-02-12729	Pneumatic actuator	
AZ-70-290	Impulse Releasing Interface	
AZ-02-14231	Direct Impulse Valve actuator	

Notes:

- The range of equipment is approved for use in conjunction with Ayvaz Equipment, Design & Service Manual P/N AZ-06-439 (Rev. 0 / October, 2018)

- The following equipment is suitable for use at storage temperatures from-20˚C to 50°C

- Containers are superpressurised to 25bar at 21°C

- Maximum system working pressure at 50°C for HFC227ea is 34.6 bar; fill ratios 0.5 kg/l min. to 1.1 kg/l max.

Certificate No: 331Ax to EN 12094-4

CLEAN AGENT Impulse Valve and Container Assemblies

Product Name	Description	LPCB Ref. No.
AZ-70-348	1" Valve 5L - HFC227ea	331Ax/07
AZ-70-349	1" Valve 9L - HFC227ea	
AZ-70-350	1" Valve 16L - HFC227ea	
AZ-70-278	1" Valve 26L - HFC227ea	
AZ-70-255	1" Valve 45L - HFC227ea	

Product Name	Description	LPCB Ref. No.
AZ-70-256	3" Valve 83L - HFC227ea	
AZ-70-257	3" Valve 150L - HFC227ea	

Notes:

- The range of equipment is approved for use in conjunction with Ayvaz Equipment, Design & Service Manual P/N AZ-06-439 (Rev. 0 / October, 2018)

- The following equipment is suitable for use at storage temperatures from-20°C to 50°C

- Containers are superpressurised to 25bar at 21°C

- Maximum system working pressure at 50°C for HFC227ea is 34.6 bar; fill ratios 0.5 kg/l min. to 1.1 kg/l max.

Certificate No: 331Av to EN 12094-4 & an LPCB schedule of requirements

Actuator Assemblies

Product Name	Description	LPCB Ref. No.
AZ-71-120	Relay actuator	331Av/04
AZ-70-325-2	Nitrogen Actuator Assembly (Normally Open Pressure Switch Contacts)	
AZ-70-325-4	Nitrogen Actuator Assembly (Normally Closed Pressure Switch Contacts)	

Notes:

- The range of equipment is approved for use in conjunction with Ayvaz Equipment, Design & Service Manual P/N AZ-06-439 (Rev. 0 / October, 2018)

- The following equipment is suitable for use at storage temperatures from-20°C to 50°C

- Containers are superpressurised to 25bar at 21°C

- Maximum system working pressure at 50°C for HFC227ea is 34.6 bar; fill ratios 0.5 kg/l min. to 1.1 kg/l max.

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ARGONITE C60 FIXED FIRE FIGHTING COMPONENTS

[1] This range of equipment is suitable for storage temperatures from -20°C to +50°C and is approved for use with Argonite.
[2] This range of equipment is approved for use in conjunction with the Kidde Fenwal design manual reference MA-01-9008-0102 (revision 0 dated July 2010)
[3] System pressure is specified at 300 bar @ 15°C.
[4] Cylinder is designed and manufactured in accordance with European Directive 1999/36/EEC (TPED) through compliance with EN1964-2
[5] Actuation hoses are available in a variety of lengths

Certificate No: 594Ba

ARGONITE Hoses

Product Name	Description	Nominal bore (mm)	System pressure (bar)	LPCB Ref. No.
01-3260-0100/1000	Actuation Hose [5]	DN5	300	594Ba/03
01-3261-0100/1000	Actuation Hose [5]	DN5	300	
01-3271-1100/1200	Actuation Hose [5]	DN5	300	
01-3272-1100/1200	Actuation Hose [5]	DN5	300	
01-3273-1100/1200	Actuation Hose [5]	DN5	300	

Certificate No: 594Ba

ARGONITE Pilot Line Equipment

Product Name	Description	Nominal Bore (mm)	System pressure (bar)	LPCB Ref. No.
01-6363-0000	¼" Pilot Line Check Valve	-	300	594Ba/18
01-3388-0000	Actuation Line Leak Bleeder Unit	-	300	
15-8685-0651	Actuation Line T-Piece	DN5	-	

Certificate No: 594Ba
Certificate No: 594Ba

ARGONITE Divertor Valves

Product Name	Description	System pressure (bar)

Certificate No: 594Ba

ARGONITE Pressure Relief Devices

Product Name	Description	System pressure (bar)	LPCB Ref. No.
01-6653-0003/0103	Pressure Relief Device	300	594Ba/17

Certificate No: 594Ba

ARGONITE Pressure Monitoring Devices

Product Name	Description	System pressure (bar)	LPCB Ref. No.
01-7221-0300	Manifold Pressure Gauge (½")	300	594Ba/15
03-5713-0000	Discharge Pressure Switch	300	

Kidde Fire Protection

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KIDDE GX20 RANGE OF FM200 FIXED FIRE FIGHTING COMPONENTS
a. This range of equipment is suitable for storage temperatures from -20°C to +54°C and is approved for use with FM200.
b. This range of equipment is approved for use in conjunction with the Kidde Fire Protection Ltd, FM200 Design Manual.
c. System pressure is specified at 25 bar @ 20°C and max service pressure of 34.5 bar @ 55°C.
d. Nitrogen pilot pressure is specified as 124 bar @ 20°C.

[1] Cylinders are designed and manufactured to 84/525/EEC or TRG 330
[2] Vertical mount cylinder with straight syphon tube
[3] Horizontal mount cylinder with angled syphon tube continued

KIDDE GX20 Container Valve, Container and Container Bracket Assemblies

Product Name	Description	Capacity (ltr)	Strap	Bracket No.
E7763-102	Cyl & GCV40 Valve Assy	8 (1), (2)	C6331-103	D1162-002
E7763-122	Cyl & GCV40 Valve Assy	8 (1), (3)	C6331-103	D1162-002
E7763-103	Cyl & GCV40 Valve Assy	16 (1), (2)	C6331-104	D1162-003
E7763-123	Cyl & GCV40 Valve Assy	16 (1), (3)	C6331-104	D1162-003
E7763-104	Cyl & GCV40 Valve Assy	28 (1), (2)	C6331-104	D1162-004
E7763-124	Cyl & GCV40 Valve Assy	28 (1), (3)	C6331-104	D1162-004
E7763-105	Cyl & GCV40 Valve Assy	51 (1), (2)	C6331-105	
E7763-106	Cyl & GCV50 Valve Assy	81 (1), (2)	C6331-105	
E7763-108	Cyl & GCV50 Valve Assy	142 (1), (2)	C6331-106	
B6793-720	Nitrogen Pilot Cylinder	1.77		B6793-721

Product Name	Description	Capacity (ltr)	Strap	Bracket No.
E7763-101	Cyl & GCV40 Valve Assy	5 (1), (2)	C6331-103	D1162-001
E7763-121	Cyl & GCV40 Valve Assy	5 (1), (3)	C6331-103	D1162-001

KIDDE GX20 Container Valves

Product Name	Description
B6793-793	GCV40 valve
B6793-792	GCV50 valve

KIDDE GX20 Discharge Hoses, Outlet Adapters, Discharge Manifolds, including Check Valves and Bracket

Product Name	Description	Nominal bore (mm)
B6793-760	GCV40 Outlet Hose	40
B6793-761	GCV50 Outlet Hose	50
K63497-02	GCV40 Outlet Adaptor	40
K63497-03	GCV50 Outlet Adaptor	50
B6793-762	Elbow Check	50
D1511-006	2 Port Manifold	50
D1511-007	2 Port Manifold	80
D1511-009	2 Port Manifold	100
D1511-008	3 Port Manifold	80
D1511-010	3 Port Manifold	100

KIDDE GX20 Pressure Switches and Devices

Product Name	Description
B6793-730	Cylinder Contents Supervisory Pressure Switch
B6793-731	Discharge Pressure Switch
B6793-732	Discharge Pressure Switch (Explosion Proof)
	Pressure Switch
B6793-733	Pressure Trip

KIDDE GX20 Discharge Nozzles

Product Name	Description	Nominal bore (mm)
C3333-301-xx	180° Nozzle (4), (5)	15
C3333-302-xx	180° Nozzle (4), (5)	20
C3333-303-xx	180° Nozzle (4), (5)	25
C3333-304-xx	180° Nozzle (4), (5)	32
C3333-305-xx	180° Nozzle (4), (5)	40
C3333-306-xx	180° Nozzle (4), (5)	50
C3333-307-xx	360° Nozzle (4), (5)	15
C3333-308-xx	360° Nozzle (4), (5)	20
C3333-309-xx	360° Nozzle (4), (5)	25
C3333-310-xx	360° Nozzle (4), (5)	32
C3333-311-xx	360° Nozzle (4), (5)	40
C3333-312-xx	360° Nozzle (4), (5)	50

[4] Nozzles drilled in accordance with system calculations.
[5] Nozzles are manufactured from brass.

KIDDE GX20 Valve Actuators

Product Name	Description
B6793-701	Electric Control Head
B6793-702	Electric & Cable Control Head
B6793-703	Cable & Electric Control Head (Flameproof)
B6793-704	Cable Operated Control Head
B6793-705	Lever Operated Control Head
B6793-706	Pressure & Lever Operated Control Head
B6793-707	Pressure Operated Control Head
B6793-708	Pressure Operated Control Head (6)
B6793-709	Electric Control Head (6)

[6] Stackable configuration

KIDDE GX20 Pilot Equipment

Product Name	Description
B6793-770	Master Cylinder Adaptor Kit
B6793-771	559mm Long Pilot hose
B6793-772	762mm Long Pilot hose
B6793-773	Male Straight Adaptor
B6793-774	Male Elbow Adaptor
B6793-775	Male Branch Tee

Certificate No: 273a/01

Kidde GX20 Check Valves

Product Name	LPCB Ref. No.
B6793-808	273a/01
B6793-809	
B6793-810	
B6793-811	
B6793-812	

Notes:
1) This range of equipment is suitable for storage temperatures from -20°C to +50°C and is approved for use with HFC227ea (FM200).
2) This range of equipment is approved in conjunction with the Kidde GX20 Design, Installation, Operation and Maintenance Manual Ref. No. 59812-422 Issue D.
3) System pressure is specified as 25 bar @ 20°C and max. service pressure is 30 bar @ 50°C.

ARGONITE C SERIES FIXED FIRE FIGHTING COMPONENTS

1. This range of equipment is suitable for storage temperatures from -20°C to +50°C and is approved for use with Argonite.
2. This range of equipment is approved for use in conjunction with the Kidde Products Design manual reference: c60;- MA-01-9008-0100 (revision 1 dated November 2011)
3. System pressure is specified at 200 bar or 300 bar @ 15°C.
4. Cylinder is designed and manufactured in accordance with European Directive 2010/35/EU (TPED) through compliance with ISO 9809-2
5. A range of wall brackets, clamping bars, spacers and clamping bolts for secure container installation are also available.

Certificate No: 273b

ARGONITE C Series Container/Valve Assemblies

Product Name	Description	Capacity (ltr)	System Pressure (bar)	LPCB Ref. No.
01-1524-5900	C60 - 80.0 Litre Cylinder	80.0	300 (3), (4), (5)	273b/01

Certificate No: 273b

ARGONITE C Series Single Area Manifolds

Product Name	Description	No. cylinders	System pressure (bar)	LPCB Ref. No.
01-3506-5112 to 01-3506-5116	Single Row Argonite C Series Discharge Manifold	2 to 6	60	273b/04
01-3506-5124 to 01-3506-5128	Double Row Argonite C Series Discharge Manifold	4 to 8	60	

Certificate No: 273b to EN 12094-13

ARGONITE C Series Manifold Check Valves

Product Name	Description	Nominal bore (mm)	System pressure (bar)	LPCB Ref. No.
01-6546-0000	Manifold Check Valve	1" BSPT x ¾" BSPP	300	273b/05

Certificate No: 273b to EN 12094-8

ARGONITE C Series Hoses

Product Name	Description	Nominal bore (mm)	System pressure (bar)	LPCB Ref. No.
01-3288-0100	Discharge Hose	DN15	300	273b/06

Certificate No: 273b to EN 12094-4

ARGONITE C Series Container Valves

Product Name	Description	System Pressure (bar)	LPCB Ref. No.
01-6481-0300	Argonite C60 Valve	300	273b/02

Certificate No: 273b to EN 12094-4

ARGONITE C Series Valve Actuators & Release Units

Product Name	Description	System pressure (bar)	LPCB Ref. No.
01-4181-0000	Pneumatic Actuator	300	273b/03
01-7172-8300	Manual/Electrical Release Unit	300	

Certificate No: 273b to EN12094 Part 10

Argonite C Series Pressure Monitoring Devices

Product Name	Description	System Pressure (bar)	LPCB Ref. No.
01-7171-8300	Pressure Gauge Unit	300	273b/07

KIDDE INERT GAS FIXED FIRE FIGHTING COMPONENTS

1. This range of equipment is suitable for storage temperatures -20°C to +50°C and is approved for use with Argonite® (IG55), IG01, IG100 and IG541.
2. This range of equipment is approved for use in cojuction with Kidde Products Design manual reference MA-01-9006-0100 (Revision 11 dated January 2015)
3. System pressure is specified at 150 bar, 200 bar and 300 bar @ 15°C.

Certificate No: 273d to Schedule of Requirements

Kidde Inert Gas - Container and Container Bracket Assemblies

Product Name	Description	Capacity (ltr)	System Pressure (bar)	LPCB Ref. No.
01-1331-590X (7)	15.9 Litre Cylinder	15.9	150 (4), (5)	273d/01
01-1311-590X (7)	67.5 Litre Cylinder	67.5	150 (4), (5)	
01-1321-590X (7)	80.0 Litre Cylinder	80.0	150 (4), (5)	
01-1332-590X (7)	15.9 Litre Cylinder	15.9	200 (4), (5)	
01-1312-590X (7)	67.5 Litre Cylinder	67.5	200 (4), (5)	
01-1322-590X (7)	80.0 Litre Cylinder	80.0	200 (4), (5)	
01-1334-590X (7)	15.9 Litre Cylinder	15.9	300 (4), (5)	
01-1314-590X (7)	67.5 Litre Cylinder	67.5	300 (4), (5)	
01-1324-590X (7)	80.0 Litre Cylinder	80.0	300 (4), (5)	
01-1394-590X (7)	140.0 Litre Cylinder	140.0	300 (4), (5)	

4. Cylinder is designed and manufactured in accordance with European Directive 2010/35/EU (TPED) through compliance with ISO 9809-2

5. A range of wall brackets, clamping bars, spacers and clamping bolts for secure container installation are also available
6. Cylinder is designed and manufactured in accordance with BS 5045-1 and is for Indian service only. Cylinder is not compliant with European Directive 84/225/EEC and the TPED.
7. Where X can be: 0 - Argonite® (IG55), 2 - Nitrogen (IG-100), 4 - Argon (IG-01) & 5 - IG-541.

Certificate No: 273d to EN 12094 part 8

Kidde Inert Gas and Argonite® C Series - Hoses

Product Name	Description	Nominal bore (mm)	System pressure (bar)	Length (mm)	LPCB Ref. No.
01-3260-0200/1000	Actuation hose	DN5	150, 200 & 300	200-1000	273d/03
01-3261-0200/1000	Actuation Hose	DN5	150, 200 & 300	200-1000	
01-3271-1100/1200	Actuation Hose	DN5	150, 200 & 300	200-300	
01-3272-1100/1200	Actuation Hose	DN5	150, 200 & 300	250-500	
01-3273-1100/1200	Actuation Hose	DN5	150, 200 & 300	350-700	

Certificate No: 273d to EN 12094 part 8

Kidde Inert Gas - Hoses

Product Name	Description	Nominal bore (mm)	System pressure (bar)	Length (mm)	LPCB Ref. No.
01-3284-0100/0200	Discharge Hose	DN9	150, 200 & 300	400-700	273d/03

Certificate No: 273d to Schedule of Requirements

Kidde Inert Gas - Pressure Restrictor Assemblies

Product Name	Description	Orifice size (mm)	System pressure (bar)	LPCB Ref. No.
01-370X-1030/1070 (8), (9), (10)	½" Restrictor Assembly	3-7	150, 200 & 300	273d/04
01-370X-3050/3180 (9)	1.0" Restrictor Assembly	5-18	150, 200 & 300	
01-370X-4120/4270 (9)	1½" Restrictor Assembly	12-27	150, 200 & 300	
01-370X-5200/5360 (9)	2.0" Restrictor Assembly	20-36	150, 200 & 300	

[8.] Not available with NPT Female/NPT Female or NPT Female/BSP Female connections
[9] Where X can be 1 for NPT Male/NPT Female, 2 for NPT Female/NPT Female, 3 for NPT Male/BSP Female or 4 for NPT Female/BSP Female
[10] Also available with BSP Male/BSP Female (part no. 01-3706-1030/1070) or BSP Male/NPT Female connections (part no. 01-3705-1030/1070)

Certificate No: 273d to Schedule of Requirements

Kidde Inert Gas and Argonite® C Series - Pressure Regulator Assemblies

Product Name	Description	Orifice Size (mm)	System pressure (bar)	LPCB Ref. No.
01-6017-0000	Pressure Regulator	N/A	150, 200 & 300	273d/04

Certificate No: 273d to EN 12094 part 7

Kidde Inert Gas and Argonite® C Series - Discharge Nozzles

Product Name	Description	Orifice size (mm)	Nozzle pressure (bar)	LPCB Ref. No.
01-3465-X2030/X2100 (11)	½" Nozzle Assembly	3-10	60	273d/05
01-3465-X3070/X3140 (11)	¾" Nozzle Assembly	7-14	60	
01-3465-X4100/X4180 (11)	1" Nozzle Assembly	10-18	60	
01-3465-X5150/X5260 (11)	1½" Nozzle Assembly	15-26	60	

[11.] Where X can be 1 for BSP or 2 for NPT connections

Certificate No: 273d to Schedule of Requirements

Kidde Inert Gas - Single Area Manifolds

Product Name	Description	No. cylinders	System pressure (bar)	LPCB Ref. No.
01-3506-2011 to 01-3506-2019	Single Row Discharge Manifold	1 to 10	150, 200	273d/06
01-3506-2021 to 01-3506-2029	Double Row Discharge Manifold	4 to 20	150, 200	
01-3506-3011 to 01-3506-3019	Single Row Discharge Manifold	1 to 10	300	
01-3506-3021 to 01-3506-3029	Double Row Discharge Manifold	4 to 20	300	

Certificate No: 273d to Schedule of Requirements

Kidde Inert Gas and Argonite® C Series - Multi-Area Manifold Accessories

Product Name	Description	System Pressure (bar)	LPCB Ref. No.
01-3508-0002	Pilot Manifold (2 Diverter Valves)	150, 200, 300 (12)	273d/06
01-3508-0003	Pilot Manifold (3 Diverter Valves)	150, 200 , 300 (12)	
01-3508-0004	Pilot Manifold (4 Diverter Valves)	150, 200, 300 (12)	
01-3508-0005	Pilot Manifold (5 Diverter Valves)	150, 200, 300 (12)	

[12.] Working Pressure Outlet 8 bar

Certificate No: 273d to EN 12094 part 5

Kidde Inert Gas and Argonite® C Series - Diverter Valves

Product Name	Description	Size	System pressure (bar)	LPCB Ref. No.
01-6240-1000	Diverter Valve	½"	150, 200 & 300	273d/08
01-6242-1000	Diverter Valve	1"	150, 200 & 300	
01-6244-1000	Diverter Valve	1½"	150, 200 & 300	
01-6246-1000	Diverter Valve	2"	150, 200 & 300	

Certificate No: 273d to EN 12094 part 13

Kidde Inert Gas - Manifold Check Valves

Product Name	Description	Nominal bore (mm)	System pressure (bar)	LPCB Ref. No.
01-6454-0000	Manifold Check Valve	½" BSP & ¾" NPT	150, 200 & 300	273d/09

Certificate No: 273d to EN 12094 part 4

Kidde Inert Gas - Container Valves

Product Name	Description	System pressure (bar)	LPCB Ref. No.
01-6471-0150	Pneumatic Argonite Valve	150	273d/10
01-6471-0200	Pneumatic Argonite Valve	200	
01-6471-0300	Pneumatic Argonite Valve	300	

Certificate No: 273d to EN 12094 part 4

Kidde Inert Gas - Release Units

Product Name	Description	System pressure (bar)	LPCB Ref. No.
01-7172-1150	Release Unit	150	273d/11
01-7172-1200	Release Unit	200	
01-7172-1300	Release Unit	300	
01-7173-1150	Release Unit	150	
01-7173-1200	Release Unit	200	
01-7173-1300	Release Unit	300	

Certificate No: 273d to EN 12094 part 10

Kidde Inert Gas and Argonite® C Series - Pressure Monitoring Devices

Product Name	Description	System pressure (bar)	LPCB Ref. No.
01-7221-0300	Manifold Pressure Gauge ½	150, 200 & 300	273d/15
03-5713-0000	Discharge Pressure Switch	Max operating pressure 90 bar	

Certificate No: 273d to EN 12094 part 10

Kidde Inert Gas - Pressure Monitoring Devices

Product Name	Description	System pressure (bar)	LPCB Ref. No.
01-7171-1500	Pressure Gauge Unit	150	273d/15
01-7171-1200	Pressure Gauge Unit	200	
01-7171-1300	Pressure Gauge Unit	300	

Certificate No: 273d to Schedule of Requirements

Kidde Inert Gas and Argonite® C Series - Pressure Relief Devices

Product Name	Description	System pressure (bar)	LPCB Ref. No.
01-6653-0001/0101	Pressure Relief Device	150	273d/17
01-6653-0002/0102	Pressure Relief Device	200	
01-6653-0003/0103	Pressure Relief Device	300	

Certificate No: 273d to EN 12094 part 13 and Schedule of Requirements

Kidde Inert Gas and Argonite® C Series - Pilot Line Equipment

Product Name	Description	Nominal bore (mm)	System pressure (bar)	LPCB Ref. No.
01-6363-0000	Pilot Line Check Valve	¼" BSP	150, 200 & 300	273d/18
01-3388-0000	Actuation Line Leak Bleeder Unit	-	150, 200 & 300	
01-4131-0000	Actuation Line T-Piece	DN5	150, 200 & 300	
01-4130-1000	Actuation Line Cross	DN5	150, 200 & 300	

Certificate No: 273e to EN 12094-13

CO2 FIXED FIREFIGHTING COMPONENTS.

Product Name	Description	Nominal Bore (mm)	System pressure (bar)	LPCB Ref. No.
D8562-008	Co2 NRV	DN2	140	273e/01

Certificate No: 273f to an LPCB schedule of requirements

Kidde Inert Gas System (400 Series) Containers

Product Name	Description	Container pressure, bar	LPCB Ref. No.
38-418021-XXX (3)	80.0 litre cylinder	200 (1) (2)	273f/01
38-418031-XXX (3)	80.0 litre cylinder	300 (1) (2)	273f/02
38-411431-XXX (3)	140.0 litre cylinder	300 (1) (2)	273f/03

KIDDE INERT GAS SYSTEM (400) SERIES), FIXED FIRE FIGHTING COMPONENTS

- This range of equipment is suitable for storage temperatures -20°C to +50°C and is approved for use with: Argonite® (IG55), Nitrogen (IG-100), Argon (IG-01) and IG541
- This range of equipment is approved for use in conjunction with Kidde Fire Protection Design manual reference: 06-237518-001 (Revision AA dated May 2018)
- System pressure is specified at 200 bar and 300 bar @ 15°C.

Notes:

(1) Cylinder is designed and manufactured in accordance with European Directive 2010/35/EU (TPED) and/or UN (USA) through compliance with
ISO 9809-2, ADR and/or DOT
(2) A range of wall brackets, clamping bars, spacers and clamping bolts for secure container installation are available.
(3) Where XXX can be: 055" = Argonite® (IG55), "100" = Nitrogen (IG-100), "001" = Argon (IG-01) or "541" = IG-541.

Certificate No: 273g to EN 12094-4

Kidde Inert Gas (M400 Series) Container Valves

Product Name	Description	LPCB Ref. No.
38-400000-001	Kidde Inert Gas Valve (400 Series) (1) 200/300 bar	273g/01

KIDDE INERT GAS SYSTEM (400) SERIES), FIXED FIRE FIGHTING COMPONENTS

- This range of equipment is suitable for storage temperatures -20°C to +50°C and is approved for use with: Argonite® (IG55), Nitrogen (IG-100), Argon (IG-01) and IG541
- This range of equipment is approved for use in conjunction with Kidde Fire Protection Design manual reference: 06-237518-001 (Revision AA dated May 2018)
- System pressure is specified at 200 bar and 300 bar @ 15°C.

Notes:
(1) Nominal outlet pressure 55 bar.

Certificate No: 273h to EN 12094-4

Kidde Inert Gas (M400 Series) Release Assemblies

Product Name	Description	LPCB Ref. No.
38-400001-001	Release Unit (400 Series)-200 bar, manual/electric, N.O. Gauge 160 bar switch (1)	273h/01
38-400001-002	Release Unit (400 Series)-200 bar, manual/electric, N.C. Gauge 160 bar switch (1)	273h/02
38-400001-003	Release Unit (400 Series)-300 bar, manual/electric, N.O. Gauge 240 bar switch (1)	273h/03
38-400001-004	Release Unit (400 Series)-300 bar, manual/electric, N.C. Gauge 240 bar switch (1)	273h/04

KIDDE INERT GAS SYSTEM (400) SERIES), FIXED FIRE FIGHTING COMPONENTS

- This range of equipment is suitable for storage temperatures -20°C to +50°C and is approved for use with: Argonite® (IG55), Nitrogen (IG-100), Argon (IG-01) and IG541
- This range of equipment is approved for use in conjunction with Kidde Fire Protection Design manual reference: 06-237518-001 (Revision AA dated May 2018)
- System pressure is specified at 200 bar and 300 bar @ 15°C.

Notes:

(1) Gauge switch type; Normally Closed (N.C.) or Normally Open (N.O.) under pressure at and above the Switchpoint

Certificate No: 273i to EN 12094-10 and an LPCB schedule of requirements

Kidde Inert Gas System(400 Series) Pressure Monitoring Devices

Product Name	Description	LPCB Ref. No.
38-400005-001	Pressure Gauge Unit, Gauge Switch N.O. 160 bar (1)	273i/01
38-400005-002	Pressure Gauge Unit, Gauge Switch N.C. 160 bar (1)	273i/02
38-400005-003	Pressure Gauge Unit, Gauge Switch N.O. 240 bar (1)	273i/03
38-400005-004	Pressure Gauge Unit, Gauge Switch N.C. 240 bar (1)	273i/04
01-7221-0300	Manifold Pressure Gauge	273i/05
03-5713-0000	Discharge Pressure Switch	273i/06

KIDDE INERT GAS SYSTEM (400) SERIES), FIXED FIRE FIGHTING COMPONENTS

- This range of equipment is suitable for storage temperatures -20°C to +50°C and is approved for use with: Argonite® (IG55), Nitrogen (IG-100), Argon (IG-01) and IG541

- This range of equipment is approved for use in conjunction with Kidde Fire Protection Design manual reference: 06-237518-001 (Revision AA dated May 2018)
- System pressure is specified at 200 bar and 300 bar @ 15°C.

Notes:

(1) Gauge switch type; Normally Closed (N.C.) or Normally Open (N.O.) under pressure at and above the Switchpoint

Certificate No: 273j to EN 12094-8:2006

Kidde Inert Gas System (400 Series) Discharge and Pilot Connectors

Product Name	Description	LPCB Ref. No.
38-401ABX-XXX (1)	Pilot Hose, ¼" Quick Connect (2)	273j/01
38-400ABX-XXX (3)	Discharge Hose ¾"	273j/02
01-3273-1000	¼" Straight x 90° for Selector Valve actuation	273j/03

KIDDE INERT GAS SYSTEM (400) SERIES), FIXED FIRE FIGHTING COMPONENTS

- This range of equipment is suitable for storage temperatures -20°C to +50°C and is approved for use with: Argonite® (IG55), Nitrogen (IG-100), Argon (IG-01) and IG541
- This range of equipment is approved for use in conjunction with Kidde Fire Protection Design manual reference: 06-237518-001 (Revision AA dated May 2018)
- System pressure is specified at 200 bar and 300 bar @ 15°C.

Notes:

(1) A or B at either end or both ends of the hose is defined as:
1 = Straight coupling, zinc plated mild steel
2 = 45°, set 0°, zinc plated mild steel
3 = 90°, set 0°, zinc plated mild steel
X-XXX = length of Hose in mm (300-3000)
(2) Approved for use with Festo couplings
(3) A or B at either end or both ends of the hose is defined as:
1 = Straight coupling, zinc plated mild steel
2 = 45°, set 180°, zinc plated mild steel
3 = 90°, set 180°, zinc plated mild steel
X-XXX = length of Hose in mm (300-3000)

Certificate No: 273k to EN 12094-13

Kidde Inert Gas System (400 Series) Pilot Line Equipment

Product Name	Description	Nominal bore, mm	Working pressure, bar	LPCB Ref. No.
38-400002-003	Pilot Line Non-Return Valve	2	10	273k/01

KIDDE INERT GAS SYSTEM (400) SERIES), FIXED FIRE FIGHTING COMPONENTS

- This range of equipment is suitable for storage temperatures -20°C to +50°C and is approved for use with: Argonite® (IG55), Nitrogen (IG-100), Argon (IG-01) and IG541
- This range of equipment is approved for use in conjunction with Kidde Fire Protection Design manual reference: 06-237518-001 (Revision AA dated May 2018)
- System pressure is specified at 200 bar and 300 bar @ 15°C.

Certificate No: 273l to an LPCB schedule of requirements

Kidde Inert Gas System (400 Series) Manifolds

Product Name	Description	No. cylinders	Working pressure, bar	LPCB Ref. No.
38-351000-004 to 38-351000-008	Single Row, Kidde IGS 400 Series Discharge Manifold (80L cylinders)	2 to 6	70	273l/01
38-351000-009 to 38-351000-011	Double Row, Kidde IGS 400 Series Discharge Manifold (80L cylinders)	4 to 8	70	273l/02

Product Name	Description	No. cylinders	Working pressure, bar	LPCB Ref. No.
38-351140-004 to 38-351140-008	Single Row, Kidde IGS 400 Series Discharge Manifold (140L cylinders)	2 to 6	70	273l/03
38-351140-009 to 38-351140-011	Single Row, Kidde IGS 400 Series Discharge Manifold (140L cylinders)	4 to 8	70	273l/04

KIDDE INERT GAS SYSTEM (400) SERIES), FIXED FIRE FIGHTING COMPONENTS

- This range of equipment is suitable for storage temperatures -20°C to +50°C and is approved for use with: Argonite® (IG55), Nitrogen (IG-100), Argon (IG-01) and IG541
- This range of equipment is approved for use in conjunction with Kidde Fire Protection Design manual reference: 06-237518-001 (Revision AA dated May 2018)
- System pressure is specified at 200 bar and 300 bar @ 15°C.

Certificate No: 273m to EN 12094-13

Kidde Inert Gas System (400 Series) Manifold Check Valve

Product Name	Description	Nominal bore, mm	Working pressure, bar	LPCB Ref. No.
38-400002-002	Manifold Check Valve	14	300	273m/01

KIDDE INERT GAS SYSTEM (400) SERIES), FIXED FIRE FIGHTING COMPONENTS

- This range of equipment is suitable for storage temperatures -20°C to +50°C and is approved for use with: Argonite® (IG55), Nitrogen (IG-100), Argon (IG-01) and IG541
- This range of equipment is approved for use in conjunction with Kidde Fire Protection Design manual reference: 06-237518-001 (Revision AA dated May 2018)
- System pressure is specified at 200 bar and 300 bar @ 15°C.

Certificate No: 273n to an LPCB schedule of requirements

Kidde Inert Gas System(400 Series) Pressure Relief Devices

Product Name	Description	Working pressure, bar	LPCB Ref. No.
38-400006-002	Manifold Pressure Relief Device	70	273n/01

KIDDE INERT GAS SYSTEM (400) SERIES), FIXED FIRE FIGHTING COMPONENTS

- This range of equipment is suitable for storage temperatures -20°C to +50°C and is approved for use with: Argonite® (IG55), Nitrogen (IG-100), Argon (IG-01) and IG541
- This range of equipment is approved for use in conjunction with Kidde Fire Protection Design manual reference: 06-237518-001 (Revision AA dated May 2018)
- System pressure is specified at 200 bar and 300 bar @ 15°C.

Certificate No: 273o to EN 12094-5

Kidde Inert Gas System (400 Series) Selector Valves

Product Name	Description	Max Working pressure, bar	LPCB Ref. No.
01-6242-1000	1 Selector Valve	300	273o/01
01-6244-1000	1½" Selector Valve	300	273o/02
01-6246-1000	2 Selector Valve	300	273o/03

KIDDE INERT GAS SYSTEM (400) SERIES), FIXED FIRE FIGHTING COMPONENTS

- This range of equipment is suitable for storage temperatures -20°C to +50°C and is approved for use with: Argonite® (IG55), Nitrogen (IG-100), Argon (IG-01) and IG541
- This range of equipment is approved for use in conjunction with Kidde Fire Protection Design manual reference: 06-237518-001 (Revision AA dated May 2018)
- System pressure is specified at 200 bar and 300 bar @ 15°C.

Certificate No: 273p to an LPCB schedule of requirements

Kidde Inert Gas System (400 Series) Multi-area Manifold Accessories

Product Name	Description	LPCB Ref. No.
01-3508-0002	Pilot Manifold (2 Divertor Valves)	273p/01
01-3508-0003	Pilot Manifold (3 Divertor Valves)	273p/02
01-3508-0004	Pilot Manifold (4 Divertor Valves)	273p/03
01-3508-0005	Pilot Manifold (5 Divertor Valves)	273p/04

KIDDE INERT GAS SYSTEM (400) SERIES), FIXED FIRE FIGHTING COMPONENTS

- This range of equipment is suitable for storage temperatures -20°C to +50°C and is approved for use with: Argonite® (IG55), Nitrogen (IG-100), Argon (IG-01) and IG541
- This range of equipment is approved for use in conjunction with Kidde Fire Protection Design manual reference: 06-237518-001 (Revision AA dated May 2018)
- System pressure is specified at 200 bar and 300 bar @ 15°C.

Notes:
Outlet pressure 8 bar.

Certificate No: 273q to prEN12094-7 and an LPCB schedule of requirements

Kidde Inert Gas System(400 Series) Nozzles

Product Name	Description	Orifice Size (mm)	LPCB Ref. No.
38-4A7100-XXX (1)(2)	½" Nozzle assembly - 360° Holes	3 10	273q/01
38-4A7200-XXX (1)(2)	¾" Nozzle assembly - 360° Holes	7 13.5	273q/02
38-4A7300-XXX (1)(2)	1" Nozzle assembly - 360° Holes	10 17	273q/03
38-4A7400-XXX (1)(2)	1½" Nozzle assembly - 360° Holes	14 - 26	273q/04
38-4A7500-XXX (1)(2)	½" Nozzle assembly - 180° Holes	3 10	273q/05
38-4A7600-XXX (1)(2)	¾" Nozzle assembly - 180° Holes	7 13.5	273q/06
38-4A7700-XXX (1)(2)	1" Nozzle assembly - 180° Holes	10 17	273q/07
38-4A7800-XXX (1)(2)	1½" Nozzle assembly - 180° Holes	14 - 26	273q/08

KIDDE INERT GAS SYSTEM (400) SERIES), FIXED FIRE FIGHTING COMPONENTS

- This range of equipment is suitable for storage temperatures -20°C to +50°C and is approved for use with: Argonite® (IG55), Nitrogen (IG-100), Argon (IG-01) and IG541
- This range of equipment is approved for use in conjunction with Kidde Fire Protection Design manual reference: 06-237518-001 (Revision AA dated May 2018)
- System pressure is specified at 200 bar and 300 bar @ 15°C.

Notes:
(1) Where XXX is Orifice size, e.g. 070 = 7mm, 075 = 7.5mm, 115 = 11.5mm, etc
(2) Where A can be 1 for BSP and 0 for NPT connections

Certificate No: 273r to an LPCB schedule of requirements

Kidde Inert Gas System (400, 469 & C60 Series) Nozzle Sound Reduction Devices

Product Name	Description	Orifice Size (mm)	LPCB Ref. No.
01-3470-0015	½" Nozzle Silencer (1)	3 10 (2)	273r/01
01-3470-0020	¾" Nozzle Silencer (1)	7 13.5 (2)	273r/02
01-3470-0025	1 Nozzle Silencer (1)	10 17 (2)	273r/03
01-3470-1015	½" FSN 112 Nozzle Silencer (1)	3 10 (2)	273r/04

KIDDE INERT GAS SYSTEM (400) SERIES), FIXED FIRE FIGHTING COMPONENTS

- This range of equipment is suitable for storage temperatures -20°C to +50°C and is approved for use with: Argonite® (IG55), Nitrogen (IG-100), Argon (IG-01) and IG541
- This range of equipment is approved for use in conjunction with Kidde Fire Protection Design manual reference: 06-237518-001 (Revision AA dated May 2018)
- System pressure is specified at 200 bar and 300 bar @ 15°C.

Notes:
(1) BSP thread

(2) For use in connection with Kidde with Kidde IGS - 400, 469 & C60 Series 360° Nozzle Assemblies

LPG Técnicas En Extinción De Incendios, S.L.

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Certificate No: 446a

LPG Discharge Valves for Inert (200 bar) and Inert (300 bar)

Product Name	Description	LPCB Ref. No.
2000306V	128-60 container valve (200 bar)	446a/01
26512800	128-65 container valve (300 bar)	

a) This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.

b) This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.

c) Inert(200 bar) & Inert (300 bar) Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 446a

LPG Container Valve Assemblies for Inert (200 bar)

Product Name	Description	LPCB Ref. No.
73131018H	80L Container Valve Assembly, LPG128-60 IG541 (1)	446a/24
73131018T	80L Container Valve Assembly, LPG128-60 IG541 (1)	
73131018	80L Container Valve Assembly, LPG128-60 IG541 (1)	
73119039	80L Container Valve Assembly, LPG128-60 IG55 (1)	
73119039H	80L Container Valve Assembly, LPG128-60 IG55 (1)	
73119039T	80L Container Valve Assembly, LPG128-60 IG55 (1)	
73119039F	80L Container Valve Assembly, LPG128-60 IG55 (1)	
73106035	80L Container Valve Assembly, LPG128-60 IG01 (1)	
73106035T	80L Container Valve Assembly, LPG128-60 IG01 (1)	
73121036	80L Container Valve Assembly, LPG128-60 IG100 (1)	
76131009	140L Container Valve Assembly, LPG128-60 IG541 (1)	
76119012	140L Container Valve Assembly, LPG128-60 IG55 (1)	
76119012H	140L Container Valve Assembly, LPG128-60 IG55 (1)	
76119012T	140L Container Valve Assembly, LPG128-60 IG55 (1)	
76119012F	140L Container Valve Assembly, LPG128-60 IG55 (1)	
76106008	140L Container Valve Assembly, LPG128-60 IG01 (1)	
76106008T	140L Container Valve Assembly, LPG128-60 IG01 (1)	
73106034	80L Container Valve assembly, LPG128-60 IG01 (2)	
73106034T	80L Container Valve assembly, LPG128-60 IG01 (2)	
73121035	80L Container Valve assembly, LPG128-60 IG100 (2)	
76131015	140L Container Valve assembly, LPG128-60 IG100 (2)	
76121010	140L Container Valve assembly, LPG128-60 IG100 (2)	
76131009H	140L Container Valve assembly, LPG128-60 IG541 (2)	
76131009T	140L Container Valve assembly, LPG128-60 IG541 (2)	

Notes:
(1) Includes pressure gauge + switch
(2) Includes pressure gauge

a) This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.

b) This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.

c) Inert(200 bar) & Inert (300 bar) Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 446a

LPG Container Valve Assemblies for Inert (300 bar)

Product Name	Description	LPCB Ref. No.
73130002	80L Container Valve Assembly, LPG128-65 IG541 (1)	446a/25
73130002H	80L Container Valve Assembly, LPG128-65 IG541 (1)	
73130002T	80L Container Valve Assembly, LPG128-65 IG541 (1)	
73120025	80L Container Valve Assembly, LPG128-65 IG55 (1)	
73120025H	80L Container Valve Assembly, LPG128-65 IG55 (1)	
73120025T	80L Container Valve Assembly, LPG128-65 IG55 (1)	
73120025F	80L Container Valve Assembly, LPG128-65 IG55 (1)	
73107018	80L Container Valve Assembly, LPG128-65 IG01 (1)	
73107018T	80L Container Valve Assembly, LPG128-65 IG01 (1)	
73122018	80L Container Valve Assembly, LPG128-65 IG100 (1)	
76130002	140L Container Valve Assembly, LPG128-65 IG541 (1)	
76130002H	140L Container Valve Assembly, LPG128-65 IG541 (1)	
76130002T	140L Container Valve Assembly, LPG128-65 IG541 (1)	
76120005	140L Container Valve Assembly, LPG128-65 IG55 (1)	
76120005H	140L Container Valve Assembly, LPG128-65 IG55 (1)	
76120005T	140L Container Valve Assembly, LPG128-65 IG55 (1)	
76120005F	140L Container Valve Assembly, LPG128-65 IG55 (1)	
76107001	140L Container Valve Assembly, LPG128-65 IG01 (1)	
76107001T	140L Container Valve Assembly, LPG128-65 IG01 (1)	
76122005	140L Container Valve assembly, LPG128-65 IG100 (1)	
73107017	80L Container Valve assembly, LPG128-65 IG01 (2)	
73107017T	80L Container Valve assembly, LPG128-65 IG01 (2)	
73122017	80L Container Valve assembly, LPG128-65 IG100 (2)	
76130004	140L Container Valve assembly, LPG128-65 IG541 (2)	
76130007	140L Container Valve assembly, LPG128-65 IG100 (2)	
73130030	80L PESO Container Valve Assembly, LPG128-65 IG541 (1)	
73120017	80L PESO Container Valve assembly, LPG128-65 IG55 (1)	
73130030H	80L PESO Container Valve assembly, LPG128-65 IG541 (1)	
73130030T	80L PESO Container Valve assembly, LPG128-65 IG541 (1)	

Notes:
(1) Includes pressure gauge + switch
(2) Includes pressure gauge

a) This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.

b) This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.

c) Inert(200 bar) & Inert (300 bar) Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 446a

LPG Restrictors for Inert (200 bar) and Inert (300 bar)

Product Name	Description	LPCB Ref. No.
61350005	¾" Restrictor NPT x NPT	446a/17
61350006	1 Restrictor NPT x NPT	
61350007	1 ¼" Restrictor NPT x NPT	
61350008	1 ½" Restrictor NPT x NPT	
61350009	2 Restrictor NPT x NPT	
61350012	2 ½" Restrictor NPT x NPT	
61350013	3 Restrictor NPT x NPT	
61350014	4 Restrictor NPT x NPT	
61016121	¾" Restrictor NPT x BSPT	
61016122	1 Restrictor NPT x BSPT	
61016123	1 ¼" Restrictor NPT x BSPT	
61016124	1 ½" Restrictor NPT x BSPT	
61016125	2 Restrictor NPT x BSPT	
61016126	2 ½" Restrictor NPT x BSPT	
61016127	3 Restrictor NPT x BSPT	
61016128	4 Restrictor NPT x BSPT	

a) This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.

b) This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.

c) Inert(200 bar) & Inert (300 bar) Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 446a

LPG Discharge Hoses for Inert (200 bar) and Inert (300 bar)

Product Name	Description	LPCB Ref. No.
30522010	¾" flexible hose	446a/18

a) This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.

b) This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.

c) Inert(200 bar) & Inert (300 bar) Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 446a

LPG Discharge Containers for Inert (200 bar) and Inert (300 bar)

Product Name	Description	LPCB Ref. No.
10800080	80 litre cylinder (200 bar)	446a/19
11400060	140 litre cylinder (200 bar)	
10800300	80 litre cylinder (300 bar)	
11400300	140 litre cylinder (300 bar)	

a) This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.

b) This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.

c) Inert(200 bar) & Inert (300 bar) Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 446a

LPG Check Valves for Inert (200 bar) and Inert (300 bar)

Product Name	Description	LPCB Ref. No.
20006050	¾" check valve	446a/20

a) This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.

b) This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.

c) Inert(200 bar) & Inert (300 bar) Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 446a

LPG Inerts Pressure Gauges for Inert (200bar) and Inert (300bar)

Product Name	Description	LPCB Ref. No.
30245003	0-400 gauge + switch set 270 bar	446a/22
30116035	0-315 gauge + switch set 180 bar	
30116043	0-450 bar pressure gauge	
3021316B	0-315 bar pressure gauge	

a) This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.

b) This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.

c) Inert(200 bar) & Inert (300 bar) Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 446a

LPG Nozzles for Inert (200 bar),(300 bar), HFC23, HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
30400000	⅜" 360° nozzle	446a/21
30400001	½" 360° nozzle	

Product Name	Description	LPCB Ref. No.
30400002	¾" 360° nozzle	
30400003	1" 360° nozzle	
30400004	1 ¼" 360° nozzle	
30400005	1 ½" 360° nozzle	
30400006	2" 360° nozzle	
30400007	⅜" 180° nozzle	
30400008	½" 180° nozzle	
30400009	¾" 180° nozzle	
30400010	1" 180° nozzle	
30400011	1 ¼" 180° nozzle	
30400012	1 ½" 180° nozzle	
30400013	2" 180° nozzle	

a) This range of equipment is suitable for storage from - 20º to 50ºC
b) Systems are specified as follows:
HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
c) Systems with HFC23 are not superpressurised.
d) Components listed are appropriate for the gas as indicated.

Certificate No: 446a

LPG HFCS Discharge Valves, including syphon tube for HFC23

Product Name	Description	LPCB Ref. No.
2131910B	LPG190-13	446a/03
2131450B	LPG145-13	
2131280B	LPG128-13	

a) This range of equipment is suitable for storage from - 20º to 50ºC
b) Systems are specified as follows:
HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
c) Systems with HFC23 are not superpressurised.
d) Components listed are appropriate for the gas as indicated.

Certificate No: 446a

LPG HFCS Discharge Valves, including syphon tube for HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
2001910B	LPG190-00	446a/04
2001450B	LPG145-00	
2001280B	LPG128-00	

a) This range of equipment is suitable for storage from - 20º to 50ºC
b) Systems are specified as follows:
HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
c) Systems with HFC23 are not superpressurised.
d) Components listed are appropriate for the gas as indicated.

Certificate No: 446a

LPG HFCS Discharge Containers for HFC23, HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
10120100	120 l. container	446a/05
10950100	100 l. container	
10750100	75 l. container	
10670080	67 l. container	
10400080	40.2 l. container	

Product Name	Description	LPCB Ref. No.
10260060	26.8 l. container	
10130060	13.4 l. container	
10050060	5.0 l. container	

a) This range of equipment is suitable for storage from - 20º to 50ºC
b) Systems are specified as follows:
HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
c) Systems with HFC23 are not superpressurised.
d) Components listed are appropriate for the gas as indicated.

Certificate No: 446a

LPG HFC227ea Container Valve Assemblies

Product Name	Description	LPCB Ref. No.
70102070	5L Container Valve Assembly, LPG128-00 (1)	446a/23
70102076	13.4L Container Valve Assembly, LPG128-00 (1)	
70102079	13.4L Container Valve Assembly, LPG128-00 (2)	
70102057	26.8L Container Valve Assembly, LPG128-00 (1)	
70102060	26.8L Container Valve Assembly, LPG128-00 (2)	
70102063	40.2L Container Valve Assembly, LPG145-00 (1)	
70102066	40.2L Container Valve Assembly, LPG145-00 (2)	
71102019	67L Container Valve Assembly, LPG145-00 (1)	
71102022	67L Container Valve Assembly, LPG145-00 (3)	
71102024	67L Container Valve Assembly, LPG145-00 (2)	
72102019	75L Container Valve Assembly, LPG190-00 (1)	
72102023	75L Container Valve Assembly, LPG190-00 (3)	
72102017	75L Container Valve Assembly, LPG190-00 (2)	
74102016	100L Container Valve Assembly, LPG190-00 (1)	
74102019	100L Container Valve Assembly, LPG190-00 (3)	
74102020	100L Container Valve Assembly, LPG190-00 (2)	
75102018	120L Container Valve Assembly, LPG190-00 (1)	
75102021	120L Container Valve Assembly, LPG190-00 (3)	
75102023	120L Container Valve Assembly, LPG190-00 (2)	

Notes:
(1) Master with solenoid actuator
(2) Slave with blind cap w/out solenoid actuator
(3) Master with 1/8 " solenoid actuator
All above assemblies include pressure gauge + switch

a) This range of equipment is suitable for storage from - 20º to 50ºC
b) Systems are specified as follows:
HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
c) Systems with HFC23 are not superpressurised.
d) Components listed are appropriate for the gas as indicated.

Certificate No: 446a

LPG HFCS Discharge Hoses for HFC23, HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
30508HFC	Rigid telescopic hose 1.5" (1)	446a/06
30508080	Rigid hose 1½" HG/MF (1)	
30508000	Rigid hose 1½" HG/HG (1)	
30506HFC	Rigid telescopic hose 1" (1)	
30502140	R2F hose 400 G 1" HG/HF (1)	
30506000	R2F hose 320 G 1" HG/HG (1)	
30506070	R2F hose 400 G ¾ " HG/HF (1)	

(1) Maximum Working Pressure 160 bar

a) This range of equipment is suitable for storage from - 20º to 50ºC
b) Systems are specified as follows:

HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.

c) Systems with HFC23 are not superpressurised.
d) Components listed are appropriate for the gas as indicated.

Certificate No: 446a

LPG HFCS Manifolds for HFC23, HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
3811VCCD	Single Row manifold	446a/12

According to the following:
V denotes container size: '1' means 67L, '2' means 75L and '4' means 100L/120L
CC denotes number of ports
D denotes manifold diameter where '3' means 1 ¼", '4' means 1 ½", '5' means 2", '6' means 2 ½", '7' means 3" and '8' means 4"

a) This range of equipment is suitable for storage from - 20º to 50ºC
b) Systems are specified as follows:
HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
c) Systems with HFC23 are not superpressurised.
d) Components listed are appropriate for the gas as indicated.

Certificate No: 446a

LPG Discharge Pressure Switch for Inert 200 bar, Inert 300 bar, HFC23, HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
30330010	Discharge pressure switch	446a/14

a) This range of equipment is suitable for storage from - 20º to 50ºC
b) Systems are specified as follows:
HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
c) Systems with HFC23 are not superpressurised.
d) Components listed are appropriate for the gas as indicated.

Certificate No: 446a

LPG HFCS Pressure Gauges for HFC23

Product Name	Description	LPCB Ref. No.
30216010	0-160 pressure gauge short socket	446a/15
30116052	0-160 pressure gauge + switch, short socket, set 90 bar	
30116053	0-160 pressure gauge + switch, long socket, set 90 bar	
3021160B	0-160 pressure gauge, long socket	

a) This range of equipment is suitable for storage from - 20º to 50ºC
b) Systems are specified as follows:
HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
c) Systems with HFC23 are not superpressurised.
d) Components listed are appropriate for the gas as indicated.

Certificate No: 446a

LPG Pressure Gauge for Inert (100 bar)

Product Name	Description	LPCB Ref. No.
30116054	0-160 pressure gauge + switch	446a/27

Certificate No: 446a

LPG HFCS Pressure Gauges for HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
30210100	0-100 pressure gauge short socket	446a/16
3021100B	0-100 pressure gauge long socket	
30116040	0-100 pressure gauge + switch, short socket	
30116037	0-100 pressure gauge + switch, long socket	

a) This range of equipment is suitable for storage from - 20º to 50ºC
b) Systems are specified as follows:
HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
c) Systems with HFC23 are not superpressurised.
d) Components listed are appropriate for the gas as indicated.

Certificate No: 446a

LPG Check Valves for HFC23, HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
20006060	Ball check valve 1.0" (brass) (1)	446a/07
20006067	Ball check valve 1" (steel) (1)	
20006HFC	Ball telescopic check valve 1.0" (brass) (1)	
20007HFC	Ball telescopic check valve 1" (steel) (1)	
20008000	Piston check valve 2" (1)	
2008HFC	Piston telescopic check valve 2" (1)	
21006302	Piston check valve 2" (U. L. version) (1)	
21006303	Piston telescopic check valve 2" (U.L. version) (1)	

(1) these check valves are rated for a maximum working pressure of 160bar

a) This range of equipment is suitable for storage from - 20º to 50ºC
b) Systems are specified as follows:
HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
c) Systems with HFC23 are not superpressurised.
d) Components listed are appropriate for the gas as indicated.

Certificate No: 446a

LPG HFCS Brackets for HFC23, HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
30620310	Modular 3L	446a/11
30621310	Modular 5/7/13L	
30625010	Modular 26/40L	
30626711	Modular 67/75L	
30621010	Modular 100/120L	
306XX6SS(1)	Single row 67L	
306XX7SN(1)	Single row 75L	
306021002	Kit 2 bottles 100/120L single row	
306031002	Kit 3 bottles 100/120L single row	

[1] XX denotes the number of containers.
[2] The number and combination of kits depends on the number of containers in the battery.

a) This range of equipment is suitable for storage from - 20º to 50ºC

b) Systems are specified as follows:
HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
c) Systems with HFC23 are not superpressurised.
d) Components listed are appropriate for the gas as indicated.

Certificate No: 446a

LPG Pneumatic Line Actuation for Inert 200 bar, Inert 300 bar, HFC23, HFC125 and HFC 227ea

Product Name	Description	LPCB Ref. No.
3023024B	Solenoid actuator 13W/24V	446a/09
30130197	Solenoid actuator 1/8" output	
30180APB	Manual actuator	
3018NAPB	Dual manual actuator	
30118APB	3 ways cone high pressure with blind plug (used with inerts)	446a/10
30116APBH	3 ways cone high pressure with blind plug (used with HFCs)	
302.200.075	¼" relief valve	
3080008C	Pressure relief screw (short)	
3080008L	Pressure relief screw (long)	
30522001	PTFE hose ¼" x 700mm (1)	
30506014	PTFE hose ¼" x 580mm (1)	
29012804	128-90 pilot container valve with pressure gauge + switch	
29012804.SOL	128-90 pilot container valve with pressure gauge and std solenoid	
2901280B	128-90 pilot container valve with pressure gauge	
2901280B.SOL	128-90 pilot container valve with pressure gauge and std solenoid	
21114045	128-97 pilot container valve with pressure gauge + switch	
21114045.SOL	128-97 pilot container valve with pressure gauge + switch and std solenoid	
21114008	128-97 pilot container valve with pressure gauge	
21114008.SOL	128-97 pilot container valve with pressure gauge and std solenoid	

Notes:
(1) Maximum working pressure = 140 bar

Certificate No: 446a

LPG Pilot Valve Assemblies (100 bar Nitrogen)

Product Name	Description	LPCB Ref. No.
10030000	3L Pilot Valve Assembly, LPG128-90, W28.8 DIN477	446a/26
10030NPT	3L Pilot Valve Assembly, LPG128-97, 1 NGT	
70100075	3L Pilot Valve Assembly, LPG128-90, W28.8 DIN477	
70100075H	3L Pilot Valve Assembly, LPG128-90, W28.8, DIN477	
70100075F	3L Pilot Valve Assembly, LPG128-90, W28.8, DIN477	
70100075T	3L Pilot Valve Assembly, LPG128-90, W28.8 DIN477	
70100075TCH	3L Pilot Valve Assembly, LPG128-90, W28.8, DIN477	
441403	3L Pilot Valve Assembly, LPG128-97, 1 NGT	
70100082	13L Pilot Valve Assembly, LPG128-90	
70100082H	13L Pilot Valve Assembly, LPG128-90	
70100082F	13L Pilot Valve Assembly, LPG128-90	
70100082T	13L Pilot Valve Assembly, LPG128-90	
70100082TCH	13L Pilot Valve Assembly, LPG128-90	
70121011	50L Pilot Valve Assembly, LPG128-90	
70121011H	50L Pilot Valve Assembly, LPG128-90	
70121011T	50L Pilot Valve Assembly, LPG128-90	
70121011TCH	50L Pilot Valve Assembly, LPG128-90	
70121011F	50L Pilot Valve Assembly, LPG128-90	
70121012	50L Pilot Valve Assembly, LPG128-90	
70100083	13L PESO Pilot Valve Assembly, LPG128-90	

Certificate No: 446c

LPG Sapphire (Novec 1230) Fixed Fire Fighting Components

- This range of equipment is suitable for storage temperatures -20°C to 50°C and is approved for use with Sapphire™ (Novec 1230)
- This range of equipment is approved for use in conjunction with the LPG Design Manual Reference : 14A-06L issue 5

- System pressure is specified @ 25bar @ 20°C
- Containers are designed to be mounted vertically
- All container assemblies with the exception of modular assemblies include container valve, container, siphon tube and pressure gauge.
- Modular assemblies include container valve, container, siphon tube, nozzle, bracket, pressure gauge and supervisory switch.

Certificate No: 446c

LPG Sapphire (Novec 1230) Container Valve Assemblies

Product Name	Description	LPCB Ref. No.
303.207.010	4.5 litre container assembly (DOT) (Welded)	446c/02
303.207.001	8 litre container assembly (DOT) (Welded)	
303.207.002	16 litre container assembly (DOT) (Welded)	
303.207.003	32 litre container assembly (DOT) (Welded)	
303.207.004	52 litre container assembly (DOT) (Welded)	
303.207.005	106 litre container assembly (DOT) (Welded)	
303.207.006	147 litre container assembly (DOT) (Welded)	
303.207.007	180 litre container assembly (DOT) (Welded)	
303.207.015	8 litre container assembly (TPED) (Welded)	
303.207.016	16 litre container assembly (TPED) (Welded)	
303.207.017	32 litre container assembly (TPED) (Welded)	
303.207.012	52 litre container assembly (TPED) (Welded)	
303.207.013	106 litre container assembly (TPED) (Welded)	
303.207.014	147 litre container assembly (TPED) (Welded)	
303.207.018	180 litre container assembly (TPED) (Welded)	

Certificate No: 446c

LPG Sapphire (Novec 1230) Discharge Nozzles

Product Name	Description	LPCB Ref. No.
310.207.101/102	Aluminium nozzle - 15 mm 180°/360° (BSP)	446c/04
310.207.103/104	Aluminium nozzle - 20mm 180°/360° (BSP)	
310.207.105/106	Aluminium nozzle - 25mm 180°/360° (BSP)	
310.207.107/108	Aluminium nozzle - 32mm 180°/360° (BSP)	
310.207.109/110	Aluminium nozzle - 40mm 180°/360° (BSP)	
310.207.111/112	Aluminium nozzle - 50mm 180°/360° (BSP)	
310.207.113/114	Aluminium nozzle - 15mm 180°/360° (NPT)	
310.207.115/116	Aluminium nozzle - 20mm 180°/360° (NPT)	
310.207.117/118	Aluminium nozzle - 25mm 180°/360° (NPT)	
310.207.119/120	Aluminium nozzle - 32mm 180°/360° (NPT)	
310.207.121/122	Aluminium nozzle - 40mm 180°/360° (NPT)	
310.207.123/124	Aluminium nozzle - 50mm 180°/360° (NPT)	
310.207.201/202	Brass nozzle - 15 mm 180°/360° (BSP)	
310.207.203/204	Brass nozzle - 20mm 180°/360° (BSP)	
310.207.205/206	Brass nozzle - 25mm 180°/360° (BSP)	
310.207.207/208	Brass nozzle - 32mm 180°/360° (BSP)	
310.207.209/210	Brass nozzle - 40mm 180°/360° (BSP)	
310.207.211/212	Brass nozzle - 50mm 180°/360° (BSP)	
310.207.213/214	Brass nozzle - 15 mm 180°/360° (NPT)	
310.207.215/216	Brass nozzle - 20mm 180°/360° (NPT)	
310.207.217/218	Brass nozzle - 25mm 180°/360° (NPT)	
310.207.219/220	Brass nozzle - 32mm 180°/360° (NPT)	
301.207.221/222	Brass nozzle - 40mm 180°/360° (NPT)	
310.207.223/224	Brass nozzle - 50mm 180°/360° (NPT)	

Certificate No: 446c

LPG Sapphire Container Labels

Product Name	Description	LPCB Ref. No.
314.207.064	Sapphire™ (Novec 1230) Container Label, 32, 106, 147 & 180 litre	446c/17
314.207.065	Sapphire ™ (Novec 1230) Container Label, 4.5, 8, 16 & 52 litre	

Certificate No: 446c

LPG Sapphire Actuators

Product Name	Description	LPCB Ref. No.
304.001.001	Electrical actuator - DIN plug and lead (suppression diode)	446c/05
304.001.002	Electrical actuator - DIN plug and lead (bridge rectifier)	
304.205.001	Electrical actuator - standard (suppression diode)	
304.209.001	Electrical actuator - standard (bridge rectifier)	
304.205.002	ATEX Electrical actuator (flameproof)	
304.209.002	Local manual actuator	
304.209.004	Pneumatic actuator	
304.209.003	Remote manual actuator	

Certificate No: 446c

LPG Sapphire Pressure Gauges & Switches

Product Name	Description	LPCB Ref. No.
304.205.006	Supervisory pressure switch - standard (open on fall)	446c/06
305.209.005	Supervisory pressure switch - special (close on fall)	
305.209.002	Supervisory pressure switch - 15 bar modular	
305.205.004	Supervisory pressure switch - ATEX	
305.205.005	Discharge pressure switch - standard	446c/07
305.205.003	Discharge pressure switch- ATEX	
302.207.012	Pressure Gauge (50mm) Sapphire™ (Novec 1230) 0-40 bar	446c/08
302.207.010	Pressure Gauge (50mm) Sapphire™ (Novec 1230) 0-60 bar	
302.209.012	Pilot Pressure Gauge (50mm) 0-100 bar	

Certificate No: 446c

LPG Sapphire Discharge and Pilot Hoses

Product Name	Description	LPCB Ref. No.
306.205.003	Flexible pilot hose	446c/09
306.207.001	25 mm discharge hose	
306.207.002	50 mm discharge hose	

Certificate No: 446c

LPG Sapphire Check and Non-Return Valves

Product Name	Description	LPCB Ref. No.
302.209.004	25 mm manifold check valve	446c/10
302.209.005	50 mm manifold check valve	
302.209.009	Non return valve	
302.209.011	Non return valve Male Adaptor	446c/11
302.209.010	Non return valve Standpipe adaptor	

Certificate No: 446c

LPG Sapphire Manifolds and Accessories

Product Name	Description	LPCB Ref. No.
307.209.022-024	65mm manifold BSPT - 2 to 4 Port	446c/12
307.209.001-003	65 mm manifold NPT - 2 to 4 Port	
307.209.025-29	80 mm manifold BSPT - 2 to 6 Port	
307.209.004-008	80 mm manifold NPT - 2 to 6 Port	
307.209.030-034	100 mm manifold BSPT - 2 to 6 Port	
307.209.009-013	100 mm manifold NPT - 2 to 6 Port	
307.209.014-021	150 mm manifold Flanged - 3 to 10 Port	
302.200.016	Vent valve	
13281	Manifold burst disc assembly	

- 65 mm manifolds for use on 4.5/8/16/32 litre containers only

- 80/100/150 mm manifolds for use with 52/106/147/180 litre containers

- 150 mm manifolds require a DN150 300 lb carbon steel A105 mating flange to connect to the pipework

- Manifolds are supplied without check valve and end caps

Certificate No: 446c

LPG Sapphire Brackets

Product Name	Description	LPCB Ref. No.
311.205.020	4.5 litre container bracket (strap style)	446c/13
311.205.013	8/16/32 litre container bracket (strap style)	
311.205.014	52/106/147/180 litre container bracket (strap style)	
311.205.021	40 litre container bracket (strap style)	
311.205.017	67.5 litre container bracket (strap style)	
311.205.018	80 litre container bracket (strap style)	
311.209.002	8/16/32 litre container brackets (hoop style)	
311.209.003	52/106/147/180 litre container bracket (hoop style)	
304.209.011	ATEX electrical actuator - 25 mm valve support brackets	446c/14
304.209.012	ATEX electrical actuator - 50 mm valve support brackets	
311.205.015	65mm manifold bracket assembly	446c/15
311.205.010	80mm manifold bracket assembly	
311.205.011	100mm manifold bracket assembly	
311.205.012	150mm manifold bracket assembly	

Certificate No: 446c

LPG Sapphire Pilot Actuation and Accessories

Product Name	Description	LPCB Ref. No.
302.200.076	¼" NPT Bleed valve	446c/16
304.209.007	Pilot cylinder	

Macron Safety Systems (UK) Ltd

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Certificate No: 587a

FM-200® 25bar CONTAINER ASSEMBLIES - DOT (WELDED)

Product Name	Description	LPCB Ref. No.
303.205.026	4.5 litre container assembly (DOT) (Welded)	587a/01
303.205.015	8 litre container assembly (DOT) (Welded)	
303.205.016	16 litre container assembly (DOT) (Welded)	
303.205.017	32 litre container assembly (DOT) (Welded)	
303.205.018	52 litre container assembly (DOT) (Welded)	
303.205.019	106 litre container assembly (DOT) (Welded)	
303.205.020	147 litre container assembly (DOT) (Welded)	
303.205.021	180 litre container assembly (DOT) (Welded)	
303.205.068	4.5 litre container assembly (DOT) (Welded) (ATEX)	
303.205.069	8 litre container assembly (DOT) (Welded) (ATEX)	
303.205.070	16 litre container assembly (DOT) (Welded) (ATEX)	
303.205.071	32 litre container assembly (DOT) (Welded) (ATEX)	
303.205.072	52 litre container assembly (DOT) (Welded) (ATEX)	
303.205.073	106 litre container assembly (DOT) (Welded) (ATEX)	
303.205.074	147 litre container assembly (DOT) (Welded) (ATEX)	
303.205.075	180 litre container assembly (DOT) (Welded) (ATEX)	

FM-200® Fixed Fire Fighting Components

1. The above products are supplied under the brand names TSP, Hygood, Fireater, Thorn
2. This range of equipment is suitable for storage temperatures 0 C to 50 C and is approved for use with FM-200®

3a. This range of equipment is approved for use in conjunction with TSP Design Manual Reference : 14A-03T issue 8
3b. This range of equipment is approved for use in conjunction with Hygood Design Manual Reference : 14A-03H issue 8
3c. This range of equipment is approved for use in conjunction with Fireater Design Manual Reference : 14A-03F issue 8
3d. This range of equipment is approved for use in conjunction with Thorn Design Manual Reference : 14A-03 issue 8
4. System pressure is specified @ 25bar @ 20 C
5. Containers are designed to be mounted vertically.

Certificate No: 587a

FM-200® 25bar CONTAINER ASSEMBLIES - TPED (WELDED)

Product Name	Description	LPCB Ref. No.
303.205.002	8 litre container assembly (TPED)	587a/01
303.205.003	16 litre container assembly (TPED)	
303.205.004	32 litre container assembly (TPED)	
303.205.012	52 litre container assembly (TPED)	
303.205.013	106 litre container assembly (TPED)	
303.205.014	147 litre container assembly (TPED)	
303.205.005	180 litre container assembly (TPED)	
303.205.076	8 litre container assembly (TPED) (ATEX)	
303.205.077	16 litre container assembly (TPED) (ATEX)	
303.205.078	32 litre container assembly (TPED) (ATEX)	
303.205.079	52 litre container assembly (TPED) (ATEX)	
303.205.080	106 litre container assembly (TPED) (ATEX)	
303.205.081	147 litre container assembly (TPED) (ATEX)	
303.205.082	180 litre container assembly (TPED) (ATEX)	

FM-200® Fixed Fire Fighting Components

1. The above products are supplied under the brand names TSP, Hygood, Fireater, Thorn
2. This range of equipment is suitable for storage temperatures 0 C to 50 C and is approved for use with FM-200®
3a. This range of equipment is approved for use in conjunction with TSP Design Manual Reference : 14A-03T issue 8
3b. This range of equipment is approved for use in conjunction with Hygood Design Manual Reference : 14A-03H issue 8
3c. This range of equipment is approved for use in conjunction with Fireater Design Manual Reference : 14A-03F issue 8
3d. This range of equipment is approved for use in conjunction with Thorn Design Manual Reference : 14A-03 issue 8
4. System pressure is specified @ 25bar @ 20 C
5. Containers are designed to be mounted vertically.

Certificate No: 587a

SAPPHIRE™ (NOVEC 1230) 25bar CONTAINER ASSEMBLIES - DOT (WELDED)

Product Name	Description	LPCB Ref. No.
303.207.010	4.5 litre container assembly (DOT) (Welded)	587a/02
303.207.001	8 litre container assembly (DOT) (Welded)	
303.207.002	16 litre container assembly (DOT) (Welded)	
303.207.003	32 litre container assembly (DOT) (Welded)	
303.207.004	52 litre container assembly (DOT) (Welded)	
303.207.005	106 litre container assembly (DOT) (Welded)	
303.207.006	147 litre container assembly (DOT) (Welded)	
303.207.007	180 litre container assembly (DOT) (Welded)	
303.207.051	4.5 litre container assembly (DOT) (Welded) (ATEX)	
303.207.052	8 litre container assembly (DOT) (Welded) (ATEX)	
303.207.053	16 litre container assembly (DOT) (Welded) (ATEX)	
303.207.054	32 litre container assembly (DOT) (Welded) (ATEX)	
303.207.055	52 litre container assembly (DOT) (Welded) (ATEX)	
303.207.056	106 litre container assembly (DOT) (Welded) (ATEX)	
303.207.057	147 litre container assembly (DOT) (Welded) (ATEX)	
303.207.058	180 litre container assembly (DOT) (Welded) (ATEX)	

Sapphire™ (NOVEC 1230) Fixed Fire Fighting Components

1. The above products are supplied under the brand names TSP, Hygood, Fireater, Thorn
2. This range of equipment is suitable for storage temperatures -20 C to 50 C and is approved for use with Sapphire™ (Novec 1230)
3a. This range of equipment is approved for use in conjunction with the TSP Design Manual Reference : 14A-06T issue 8
3b. This range of equipment is approved for use in conjunction with the Hygood Design Manual Reference : 14A-06H issue 8
3c. This range of equipment is approved for use in conjunction with the Fireater Design Manual Reference : 14A-06F issue 8
3d. This range of equipment is approved for use in conjunction with the Thorn Design Manual Reference : 14A-06 issue 8
3e. This range of equipment is approved for use in conjunction with the LPG Design Manual Reference : 14A-06L issue 8

4. System pressure is specified @ 25bar @ 20 C or 41bar @ 20 C
5. Containers are designed to be mounted vertically.

Certificate No: 587a

SAPPHIRE™ (NOVEC 1230) 25bar CONTAINER ASSEMBLIES - TPED (WELDED)

Product Name	Description	LPCB Ref. No.
303.207.015	8 litre container assembly (TPED)	587a/02
303.207.016	16 litre container assembly (TPED)	
303.207.017	32 litre container assembly (TPED)	
303.207.012	52 litre container assembly (TPED)	
303.207.013	106 litre container assembly (TPED)	
303.207.014	147 litre container assembly (TPED)	
303.207.018	180 litre container assembly (TPED)	
303.207.059	8 litre container assembly (TPED) (ATEX)	
303.207.060	16 litre container assembly (TPED) (ATEX)	
303.207.061	32 litre container assembly (TPED) (ATEX)	
303.207.062	52 litre container assembly (TPED) (ATEX)	
303.207.063	106 litre container assembly (TPED) (ATEX)	
303.207.064	147 litre container assembly (TPED) (ATEX)	
303.207.065	180 litre container assembly (TPED) (ATEX)	

Sapphire™ (NOVEC 1230) Fixed Fire Fighting Components

1. The above products are supplied under the brand names TSP, Hygood, Fireater, Thorn
2. This range of equipment is suitable for storage temperatures -20 C to 50 C and is approved for use with Sapphire™ (Novec 1230)
3a. This range of equipment is approved for use in conjunction with the TSP Design Manual Reference : 14A-06T issue 8
3b. This range of equipment is approved for use in conjunction with the Hygood Design Manual Reference : 14A-06H issue 8
3c. This range of equipment is approved for use in conjunction with the Fireater Design Manual Reference : 14A-06F issue 8
3d. This range of equipment is approved for use in conjunction with the Thorn Design Manual Reference : 14A-06 issue 8
3e. This range of equipment is approved for use in conjunction with the LPG Design Manual Reference : 14A-06L issue 8
4. System pressure is specified @ 25bar @ 20 C or 41bar @ 20 C
5. Containers are designed to be mounted vertically.

Certificate No: 587a

SAPPHIRE™ (NOVEC 1230) 41 bar CONTAINER ASSEMBLIES - TPED (WELDED)

Product Name	Description	LPCB Ref. No.
303.207.030	8 litre container assembly (TPED)	587a/20
303.207.031	16 litre container assembly (TPED)	
303.207.032	32 litre container assembly (TPED)	
303.207.033	52 litre container assembly (TPED)	
303.207.034	106 litre container assembly (TPED)	
303.207.035	147 litre container assembly (TPED)	
303.207.036	180 litre container assembly (TPED)	

Sapphire™ (NOVEC 1230) Fixed Fire Fighting Components

1. The above products are supplied under the brand names TSP, Hygood, Fireater, Thorn
2. This range of equipment is suitable for storage temperatures -20 C to 50 C and is approved for use with Sapphire™ (Novec 1230)
3a. This range of equipment is approved for use in conjunction with the TSP Design Manual Reference : 14A-06T issue 8
3b. This range of equipment is approved for use in conjunction with the Hygood Design Manual Reference : 14A-06H issue 8
3c. This range of equipment is approved for use in conjunction with the Fireater Design Manual Reference : 14A-06F issue 8
3d. This range of equipment is approved for use in conjunction with the Thorn Design Manual Reference : 14A-06 issue 8
3e. This range of equipment is approved for use in conjunction with the LPG Design Manual Reference : 14A-06L issue 8
4. System pressure is specified @ 25bar @ 20 C or 41bar @ 20 C
5. Containers are designed to be mounted vertically.

Certificate No: 587a

CONTAINERS BRACKETS (WELDED CONTAINERS)

Product Name	Description	LPCB Ref. No.
311.205.020	4.5 litre container bracket (strap style)	587a/13
311.205.013	8/16/32 litre container bracket (strap style)	

Product Name	Description	LPCB Ref. No.
311.205.014	52/106/147/180 litre container bracket (strap style)	
311.209.002	8/16/32 litre container brackets (hoop style)	
311.209.003	52/106/147/180 litre container bracket (hoop style)	

Certificate No: 587a

CONTAINER VALVES & ACTUATORS 25bar

Product Name	Description	LPCB Ref. No.
302.209.001	25mm container valve	587a/05
302.209.002	50mm container valve	
304.001.001	Electrical actuator - DIN plug and lead (suppression diode)	587a/05
304.001.002	Electrical actuator - DIN plug and lead (bridge rectifier)	
304.205.001	Electrical actuator - standard (suppression diode)	
304.209.001	Electrical actuator - standard (bridge rectifier)	
304.205.002	ATEX Electrical actuator (flameproof)	
304.209.002	Local manual actuator	
304.209.004	Pneumatic actuator	
304.209.011	ATEX electrical actuator - 25 mm valve support brackets	587a/14
304.209.012	ATEX electrical actuator - 50 mm valve support brackets	

Note:
System pressure is specified @25 bar @ 20 C

Certificate No: 587a

CONTAINER VALVES & ACTUATORS 41bar

Product Name	Description	LPCB Ref. No.
302.209.006	25mm valve assembly	587a/18
302.209.022	25mm valve assembly (alternative burst disc)	
302.209.007	50mm valve assembly	
302.209.023	50mm valve assembly (alternative burst disc)	
304.205.010	Electrical actuator (suppression diode UL)	
304.207.003	Remote manual actuator (mechanical)	
304.209.002	Local manual actuator	
304.209.004	Pneumatic actuator	
304.205.001	Electrical actuator - standard (suppression diode)	
304.209.001	Electrical actuator - standard (bridge rectifier)	

Note:
System pressure is specified @41 bar @ 20 C

Certificate No: 587a

PRESSURE GAUGES and PRESSURE SWITCHES

Product Name	Description	LPCB Ref. No.
304.205.006	Supervisory pressure switch - standard (open on fall)	587a/06
305.209.005	Supervisory pressure switch - special (close on fall)	
305.205.004	Supervisory pressure switch - ATEX	
305.209.009	Discharge pressure switch - standard	587a/07
305.205.003	Discharge pressure switch- ATEX	
302.205.022	Pressure Gauge (50mm) FM-200® 0-60 bar	587a/08
302.207.010	Pressure Gauge (50mm) Sapphire™ (Novec 1230) 0-60 bar	
302.207.011	Pressure Gauge (50mm) Sapphire™ (Novec 1230) 0-100 bar	
302.209.012	Pilot Pressure Gauge (50mm) 0-100 bar	
302.209.027	Pressure Gauge 0-40 bar	
302.209.026	Pressure Gauge 0-60 bar	

Certificate No: 587a

DISCHARGE AND PILOT HOSES

Product Name	Description	LPCB Ref. No.
306.205.003	Flexible pilot hose	587a/09

Product Name	Description	LPCB Ref. No.
306.207.002	25 mm discharge hose	
306.207.003	50 mm discharge hose	

Certificate No: 587a

CHECK VALVES

Product Name	Description	LPCB Ref. No.
302.209.004	25 mm manifold check valve	587a/10
302.209.005	50 mm manifold check valve	

Certificate No: 587a

MANIFOLDS

Product Name	Description	LPCB Ref. No.
307.209.022-024	65mm manifold BSPT - 2 to 4 Port	587a/12
307.209.001-003	65 mm manifold NPT - 2 to 4 Port	
307.209.025-029	80 mm manifold BSPT - 2 to 6 Port	
307.209.004-008	80 mm manifold NPT - 2 to 6 Port	
307.209.030-034	100 mm manifold BSPT - 2 to 6 Port	
307.209.009-013	100 mm manifold NPT - 2 to 6 Port	
307.209.014-021	150 mm manifold Flanged - 3 to 10 Port	

- 65 mm manifolds for use on 4.5/8/16/32 litre containers only
- 80/100/150 mm manifolds for use with 52/106/147/180 litre containers
- 150 mm manifolds require a DN150 300 lb carbon steel A105 mating flange to connect to the pipework
- Manifolds are supplied without check valve and end caps

Certificate No: 587a

MANIFOLD BRACKET ASSEMBLIES

Product Name	Description	LPCB Ref. No.
311.205.015	65mm manifold bracket assembly	587a/15
311.205.010	80mm manifold bracket assembly	
311.205.011	100mm manifold bracket assembly	
311.205.012	150mm manifold bracket assembly	

Certificate No: 587a

FM-200® DISCHARGE NOZZLES

Product Name	Description	LPCB Ref. No.
310.205.101/102	Aluminium nozzle - 10mm 180°/360° (BSP)	587a/03
310.205.103/104	Aluminium nozzle - 15 mm 180°/360° (BSP)	
310.205.105/106	Aluminium nozzle - 20mm 180°/360° (BSP)	
310.205.107/108	Aluminium nozzle - 25mm 180°/360° (BSP)	
310.205.109/110	Aluminium nozzle - 32mm 180°/360° (BSP)	
310.205.111/112	Aluminium nozzle - 40mm 180°/360° (BSP)	
310.205.113/114	Aluminium nozzle - 50mm 180°/360° (BSP)	
310.205.115/116	Aluminium nozzle - 10mm 180°/360° (NPT)	
310.205.117/118	Aluminium nozzle - 15mm 180°/360° (NPT)	
310.205.119/120	Aluminium nozzle - 20mm 180°/360° (NPT)	
310.205.121/122	Aluminium nozzle - 25mm 180°/360° (NPT)	
310.205.123/124	Aluminium nozzle - 32mm 180°/360° (NPT)	
310.205.125/126	Aluminium nozzle - 40mm 180°/360° (NPT)	
310.205.127/128	Aluminium nozzle - 50mm 180°/360° (NPT)	
310.205.201/202	Brass nozzle - 10mm 180°/360° (BSP)	
310.205.203/204	Brass nozzle - 15 mm 180°/360° (BSP)	
310.205.205/206	Brass nozzle - 20mm 180°/360° (BSP)	
310.205.207/208	Brass nozzle - 25mm 180°/360° (BSP)	
310.205.209/210	Brass nozzle - 32mm 180°/360° (BSP)	

Product Name	Description	LPCB Ref. No.
301.205.211/212	Brass nozzle - 40mm 180°/360° (BSP)	
310.205.213/214	Brass nozzle - 50mm 180°/360° (BSP)	
310.205.215/216	Brass nozzle - 10mm 180°/360° (NPT)	
310.205.217/218	Brass nozzle - 15mm 180°/360° (NPT)	
310.205.219/220	Brass nozzle - 20mm 180°/360° (NPT)	
310.205.221/222	Brass nozzle - 25mm 180°/360° (NPT)	
310.205.223/224	Brass nozzle - 32mm 180°/360° (NPT)	
301.205.225/226	Brass nozzle - 40mm 180°/360° (NPT)	
310.205.227/228	Brass nozzle - 50mm 180°/360° (NPT)	

FM-200® Fixed Fire Fighting Components

1. The above products are supplied under the brand names TSP, Hygood, Fireater, Thorn
2. This range of equipment is suitable for storage temperatures 0 C to 50 C and is approved for use with FM-200®
3a. This range of equipment is approved for use in conjunction with TSP Design Manual Reference : 14A-03T issue 8
3b. This range of equipment is approved for use in conjunction with Hygood Design Manual Reference : 14A-03H issue 8
3c. This range of equipment is approved for use in conjunction with Fireater Design Manual Reference : 14A-03F issue 8
3d. This range of equipment is approved for use in conjunction with Thorn Design Manual Reference : 14A-03 issue 8
4. System pressure is specified @ 25bar @ 20 C
5. Containers are designed to be mounted vertically.

Certificate No: 587a

SAPPHIRE™ (NOVEC 1230) DISCHARGE NOZZLES

Product Name	Description	LPCB Ref. No.
310.207.101/102	Aluminium nozzle - 15 mm 180°/360° (BSP)	587a/04
310.207.103/104	Aluminium nozzle - 20mm 180°/360° (BSP)	
310.207.105/106	Aluminium nozzle - 25mm 180°/360° (BSP)	
310.207.107/108	Aluminium nozzle - 32mm 180°/360° (BSP)	
310.207.109/110	Aluminium nozzle - 40mm 180°/360° (BSP)	
310.207.111/112	Aluminium nozzle - 50mm 180°/360° (BSP)	
310.207.113/114	Aluminium nozzle - 15mm 180°/360° (NPT)	
310.207.115/116	Aluminium nozzle - 20mm 180°/360° (NPT)	
310.207.117/118	Aluminium nozzle - 25mm 180°/360° (NPT)	
310.207.119/120	Aluminium nozzle - 32mm 180°/360° (NPT)	
310.207.121/122	Aluminium nozzle - 40mm 180°/360° (NPT)	
310.207.123/124	Aluminium nozzle - 50mm 180°/360° (NPT)	
310.207.201/202	Brass nozzle - 15 mm 180°/360° (BSP)	
310.207.203/204	Brass nozzle - 20mm 180°/360° (BSP)	
310.207.205/206	Brass nozzle - 25mm 180°/360° (BSP)	
310.207.207/208	Brass nozzle - 32mm 180°/360° (BSP)	
310.207.209/210	Brass nozzle - 40mm 180°/360° (BSP)	
310.207.211/212	Brass nozzle - 50mm 180°/360° (BSP)	
310.207.213/214	Brass nozzle - 15 mm 180°/360° (NPT)	
310.207.215/216	Brass nozzle - 20mm 180°/360° (NPT)	
310.207.217/218	Brass nozzle - 25mm 180°/360° (NPT)	
310.207.219/220	Brass nozzle - 32mm 180°/360° (NPT)	
301.207.221/222	Brass nozzle - 40mm 180°/360° (NPT)	
310.207.223/224	Brass nozzle - 50mm 180°/360° (NPT)	

Sapphire™ (NOVEC 1230) Fixed Fire Fighting Components

1. The above products are supplied under the brand names TSP, Hygood, Fireater, Thorn
2. This range of equipment is suitable for storage temperatures -20 C to 50 C and is approved for use with Sapphire™ (Novec 1230)
3a. This range of equipment is approved for use in conjunction with the TSP Design Manual Reference : 14A-06T issue 8
3b. This range of equipment is approved for use in conjunction with the Hygood Design Manual Reference : 14A-06H issue 8
3c. This range of equipment is approved for use in conjunction with the Fireater Design Manual Reference : 14A-06F issue 8
3d. This range of equipment is approved for use in conjunction with the Thorn Design Manual Reference : 14A-06 issue 8
3e. This range of equipment is approved for use in conjunction with the LPG Design Manual Reference : 14A-06L issue 8
4. System pressure is specified @ 25bar @ 20 C or 41bar @ 20 C
5. Containers are designed to be mounted vertically.

Certificate No: 587a

PILOT CYLINDER AND ACCESSORIES

Product Name	Description	LPCB Ref. No.
302.209.011	Non return valve 1/4" BSPT x 10mm male adaptor	587a/11
302.209.010	Non return valve 6mm x 10mm Standpipe reducer	
302.209.009	Non return valve	587a/10
302.200.016	Vent valve	587a/12
13281	Manifold burst disc assembly	
302.200.076	1/4" NPT Bleed valve	587a/16
304.209.007	Pilot cylinder	

Certificate No: 587a

FM-200® CONTAINER LABELS

Product Name	Description	LPCB Ref. No.
314.205.025	Hygood Container Label - 32, 106, 147, 180 & 343 litre	587a/17
314.205.026	Hygood Container Label - 4.5, 8, 16 & 52 litre	
314.205.029	TSP Container Label - 32, 106, 147, 180 & 343 litre	
314.205.030	TSP Container Label - 4.5, 8, 16 & 52 litre	
314.205.027	Fireater Container Label - 32, 106, 147, 180 & 343 litre	
314.205.028	Fireater Container Label - 4.5, 8, 16 & 52 litre	
314.205.031	Thorn Container Label - 32, 106, 147, 180 & 343 litre	
314.205.032	Thorn Container Label - 4.5, 8, 16 & 52 litre	

FM-200® Fixed Fire Fighting Components

1. The above products are supplied under the brand names TSP, Hygood, Fireater, Thorn
2. This range of equipment is suitable for storage temperatures 0 C to 50 C and is approved for use with FM-200®
3a. This range of equipment is approved for use in conjunction with TSP Design Manual Reference : 14A-03T issue 8
3b. This range of equipment is approved for use in conjunction with Hygood Design Manual Reference : 14A-03H issue 8
3c. This range of equipment is approved for use in conjunction with Fireater Design Manual Reference : 14A-03F issue 8
3d. This range of equipment is approved for use in conjunction with Thorn Design Manual Reference : 14A-03 issue 8
4. System pressure is specified @ 25bar @ 20 C
5. Containers are designed to be mounted vertically.

Certificate No: 587a

SAPPHIRE™ (NOVEC 1230) 25bar CONTAINER LABELS

Product Name	Description	LPCB Ref. No.
314.207.017	Hygood Container Label - 32, 106, 147, 180 & 343 litre	587a/17
314.207.018	Hygood Container Label - 4.5, 8, 16 & 52 litre	
314.207.023	TSP Container Label - 32, 106, 147, 180 & 343 litre	
314.207.024	TSP Container Label - 4.5, 8, 16, 52 litre	
314.207.019	Fireater Container Label - 32, 106, 147, 180 & 343 litre	
314.207.020	Fireater Container Label - 4.5, 8, 16, 52 litre	
314.207.021	Thorn Container Label - 32, 106, 147, 180 & 343 litre	
314.207.022	Thorn Container Label - 4.5, 8, 16, 52 litre	
314.207.073	LPG Container Label - 32, 106, 147, 180 & 343 litre	
314.207.074	LPG Container Label - 4.5, 8, 16, 52 litre	
314.207.064	LPG Container Label - 32, 106, 147, 180 litre (ESP)	
314.207.065	LPG Container Label - 4.5, 8, 16, 52 litre (ESP)	

Sapphire™ (NOVEC 1230) Fixed Fire Fighting Components

1. The above products are supplied under the brand names TSP, Hygood, Fireater, Thorn
2. This range of equipment is suitable for storage temperatures -20 C to 50 C and is approved for use with Sapphire™ (Novec 1230)
3a. This range of equipment is approved for use in conjunction with the TSP Design Manual Reference : 14A-06T issue 8
3b. This range of equipment is approved for use in conjunction with the Hygood Design Manual Reference : 14A-06H issue 8
3c. This range of equipment is approved for use in conjunction with the Fireater Design Manual Reference : 14A-06F issue 8
3d. This range of equipment is approved for use in conjunction with the Thorn Design Manual Reference : 14A-06 issue 8
3e. This range of equipment is approved for use in conjunction with the LPG Design Manual Reference : 14A-06L issue 8
4. System pressure is specified @ 25bar @ 20 C or 41bar @ 20 C
5. Containers are designed to be mounted vertically.

Certificate No: 587a

SAPPHIRE™ (NOVEC 1230) 42bar CONTAINER LABELS

Product Name	Description	LPCB Ref. No.
314.207.058	Hygood Container Label - 32, 106, 147 & 180 litre	587a/17
314.207.099	Hygood (India) Contianer Label - 80 & 120 litre	
314.207.059	Hygood Container Label - 8, 16 & 52 litre	
314.207.056	TSP Container Label - 32, 106, 147 & 180 litre	
314.207.057	TSP Container Label - 8, 16, 52 litre	
314.207.052	Fireater Container Label - 32, 106, 147 & 180 litre	
314.207.053	Fireater Container Label - 8, 16, 52 litre	
314.207.054	Thorn Container Label - 32, 106, 147 & 180 litre	
314.207.055	Thorn Container Label - 8, 16, 52 litre	
314.207.087	LPG Container Label - 32, 106, 147 & 180 litre	
314.207.088	LPG Container Label - 8, 16, 52 litre	
314.207.091	LPG Container Label - 32, 106, 147, 180 litre (ESP)	
314.207.092	LPG Container Label - 8, 16, 52 litre (ESP)	

Sapphire™ (NOVEC 1230) Fixed Fire Fighting Components

1. The above products are supplied under the brand names TSP, Hygood, Fireater, Thorn
2. This range of equipment is suitable for storage temperatures -20 C to 50 C and is approved for use with Sapphire™ (Novec 1230)
3a. This range of equipment is approved for use in conjunction with the TSP Design Manual Reference : 14A-06T issue 8
3b. This range of equipment is approved for use in conjunction with the Hygood Design Manual Reference : 14A-06H issue 8
3c. This range of equipment is approved for use in conjunction with the Fireater Design Manual Reference : 14A-06F issue 8
3d. This range of equipment is approved for use in conjunction with the Thorn Design Manual Reference : 14A-06 issue 8
3e. This range of equipment is approved for use in conjunction with the LPG Design Manual Reference : 14A-06L issue 8
4. System pressure is specified @ 25bar @ 20 C or 41bar @ 20 C
5. Containers are designed to be mounted vertically.

Certificate No: 587a

SELECTOR VALVES

Product Name	Description	Connection	Working Pressure (bar)	LPCB Ref. No.
308.209.001	40mm Selector valve	NPT Threaded	49	587a/19
308.209.002	50mm Selector valve	NPT Threaded	49	
308.209.003	65mm Selector valve	NPT Threaded	49	
308.209.004	80mm Selector valve	NPT Threaded	49	
308.209.005	100mm Selector valve	NPT Threaded	49	
308.209.007	40mm Selector valve	BSPT Threaded	49	
308.209.008	50mm Selector valve	BSPT Threaded	49	
308.209.009	65mm Selector valve	BSPT Threaded	49	
308.209.010	80mm Selector valve	BSPT Threaded	49	
308.209.011	100mm Selector valve	BSPT Threaded	49	

Certificate No: 587a

LPG Discharge Valves for Inert (200 bar) and Inert (300 bar)

Product Name	Description	LPCB Ref. No.
2000306V	128-60 container valve (200 bar)	587a/21
26512800	128-65 container valve (300 bar)	

LPG 200 bar and 300 bar Inert Fixed fire Fighting Components

1. This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.
2. This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.
3. Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 587a

LPG Container Valve Assemblies for Inert (200 bar)

Product Name	Description	LPCB Ref. No.
73131018	80L Container Valve Assembly, LPG128-60 IG541 (1)	587a/22
73131018H	80L Container Valve Assembly, LPG128-60 IG541 (1)	
73131018T	80L Container Valve Assembly, LPG128-60 IG541 (1)	
73119039	80L Container Valve Assembly, LPG128-60 IG55 (1)	
73119039H	80L Container Valve Assembly, LPG128-60 IG55 (1)	
73119039T	80L Container Valve Assembly, LPG128-60 IG55 (1)	
73119039F	80L Container Valve Assembly, LPG128-60 IG55 (1)	
73106035	80L Container Valve Assembly, LPG128-60 IG01 (1)	
73106035T	80L Container Valve Assembly, LPG128-60 IG01 (1)	
73121036	80L Container Valve Assembly, LPG128-60 IG100 (1)	
76131009	140L Container Valve Assembly, LPG128-60 IG541 (1)	
76131009H	140L Container Valve assembly, LPG128-60 IG541 (1)	
76131009T	140L Container Valve assembly, LPG128-60 IG541 (1)	
76119012	140L Container Valve Assembly, LPG128-60 IG55 (1)	
76119012H	140L Container Valve Assembly, LPG128-60 IG55 (1)	
76119012T	140L Container Valve Assembly, LPG128-60 IG55 (1)	
76119012F	140L Container Valve Assembly, LPG128-60 IG55 (1)	
76106008	140L Container Valve Assembly, LPG128-60 IG01 (1)	
76106008T	140L Container Valve Assembly, LPG128-60 IG01 (1)	
76121010	140L Container Valve assembly, LPG128-60 IG100 (1)	
73106034	80L Container Valve assembly, LPG128-60 IG01 (2)	
73106034T	80L Container Valve assembly, LPG128-60 IG01 (2)	
73121035	80L Container Valve assembly, LPG128-60 IG100 (2)	
76131015	140L Container Valve assembly, LPG128-60 IG100 (2)	

Notes:

(1) includes pressure gauge + switch

(2) includes pressure gauge

LPG 200 bar and 300 bar Inert Fixed fire Fighting Components

1. This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.
2. This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.
3. Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 587a

LPG Container Valve Assemblies for Inert (300 bar)

Product Name	Description	LPCB Ref. No.
73130002	80L Container Valve Assembly, LPG128-65 IG541 (1)	587a/23
73130002H	80L Container Valve Assembly, LPG128-65 IG541 (1)	
73130002T	80L Container Valve Assembly, LPG128-65 IG541 (1)	
73120025	80L Container Valve Assembly, LPG128-65 IG55 (1)	
73120025H	80L Container Valve Assembly, LPG128-65 IG55 (1)	
73120025T	80L Container Valve Assembly, LPG128-65 IG55 (1)	
73120025F	80L Container Valve Assembly, LPG128-65 IG55 (1)	
73107018	80L Container Valve Assembly, LPG128-65 IG01 (1)	
73107018T	80L Container Valve Assembly, LPG128-65 IG01 (1)	
73122018	80L Container Valve Assembly, LPG128-65 IG100 (1)	
76130002	140L Container Valve Assembly, LPG128-65 IG541 (1)	
76130002H	140L Container Valve Assembly, LPG128-65 IG541 (1)	
76130002T	140L Container Valve Assembly, LPG128-65 IG541 (1)	
76120005	140L Container Valve Assembly, LPG128-65 IG55 (1)	
76120005H	140L Container Valve Assembly, LPG128-65 IG55 (1)	
76120005T	140L Container Valve Assembly, LPG128-65 IG55 (1)	
76120005F	140L Container Valve Assembly, LPG128-65 IG55 (1)	
76107001	140L Container Valve Assembly, LPG128-65 IG01 (1)	
76107001T	140L Container Valve Assembly, LPG128-65 IG01 (1)	
76122005	140L Container Valve assembly, LPG128-65 IG100 (1)	
73107017	80L Container Valve assembly, LPG128-65 IG01 (2)	
73107017T	80L Container Valve assembly, LPG128-65 IG01 (2)	
73122017	80L Container Valve assembly, LPG128-65 IG100 (2)	
76130004	140L Container Valve assembly, LPG128-65 IG541 (2)	

Product Name	Description	LPCB Ref. No.
76130007	140L Container Valve assembly, LPG128-65 IG100 (2)	
73130030	80L PESO Container Valve Assembly, LPG128-65 IG541 (1)	
73130030H	80L PESO Container Valve assembly, LPG128-65 IG541 (1)	
73130030T	80L PESO Container Valve assembly, LPG128-65 IG541 (1)	
73120017	80L PESO Container Valve assembly, LPG128-65 IG55 (1)	

Notes:

(1) includes pressure gauge + switch

(2) includes pressure gauge

LPG 200 bar and 300 bar Inert Fixed fire Fighting Components

1. This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.
2. This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.
3. Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

LPG Restrictors for Inert (200 bar) and Inert (300 bar)

Product Name	Description	LPCB Ref. No.
61350005	¾" Restrictor NPT x NPT	587a/24
61350006	1 Restrictor NPT x NPT	
61350007	1 ¼" Restrictor NPT x NPT	
61350008	1 ½" Restrictor NPT x NPT	
61350009	2 Restrictor NPT x NPT	
61350012	2 ½" Restrictor NPT x NPT (1)	
61350013	3 Restrictor NPT x NPT (1)	
61350014	4 Restrictor NPT x NPT (1)	
61016121	¾" Restrictor NPT x BSPT	
61016122	1 Restrictor NPT x BSPT	
61016123	1 ¼" Restrictor NPT x BSPT	
61016124	1 ½" Restrictor NPT x BSPT	
61016125	2 Restrictor NPT x BSPT	
61016126	2 ½" Restrictor NPT x BSPT (1)	
61016127	3 Restrictor NPT x BSPT (1)	
61016128	4 Restrictor NPT x BSPT (1)	

Notes:

(1) 200 bar only

LPG 200 bar and 300 bar Inert Fixed fire Fighting Components

1. This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.
2. This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.
3. Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 587a

LPG Discharge Hoses for Inert (200 bar) and Inert (300 bar)

Product Name	Description	LPCB Ref. No.
30522010	¾" flexible hose	587a/25

LPG 200 bar and 300 bar Inert Fixed fire Fighting Components

1. This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.

2. This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.
3. Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 587a

LPG Discharge Containers for Inert (200 bar) and Inert (300 bar)

Product Name	Description	LPCB Ref. No.
10800080	80 litre cylinder (200 bar)	587a/26
11400060	140 litre cylinder (200 bar)	
10800300	80 litre cylinder (300 bar)	
11400300	140 litre cylinder (300 bar)	

LPG 200 bar and 300 bar Inert Fixed fire Fighting Components

1. This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.
2. This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.
3. Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 587a

LPG Check Valves for Inert (200 bar) and Inert (300 bar)

Product Name	Description	LPCB Ref. No.
20006050	¾" check valve	587a/27

LPG 200 bar and 300 bar Inert Fixed fire Fighting Components

1. This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.
2. This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.
3. Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 587a

LPG Inerts Pressure Gauges for Inert (200bar) and Inert (300bar)

Product Name	Description	LPCB Ref. No.
30245003	0-400 gauge + switch set 270 bar	587a/28
30116035	0-315 gauge + switch set 180 bar	
30116043	0-450 bar pressure gauge	
3021316B	0-315 bar pressure gauge	

LPG 200 bar and 300 bar Inert Fixed fire Fighting Components

1. This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.
2. This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.
3. Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 587a

LPG Nozzles for Inert (200 bar),(300 bar), HFC23, HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
30400000	⅜" 360° nozzle	587a/29
30400001	½" 360° nozzle	
30400002	¾" 360° nozzle	
30400003	1" 360° nozzle	
30400004	1 ¼" 360° nozzle	
30400005	1 ½" 360° nozzle	
30400006	2" 360° nozzle	
30400007	3/8" 180° nozzle	
30400008	½" 180° nozzle	
30400009	¾" 180° nozzle	
30400010	1" 180° nozzle	
30400011	1 ¼" 180° nozzle	
30400012	1 ½" 180° nozzle	
30400013	2" 180° nozzle	

LPG 200 bar and 300 bar Inert Fixed fire Fighting Components

1. This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with IG541, IG55, IG100 and IG01.
2. This range of equipment is approved for use with LPG Design Manual reference: MD/55/01/IN.
3. Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

LPG HFCS Fixed Fire Fighting Components

1. This range of equipment is suitable for storage from -20º to 55ºC
2. Systems are specified as follows:
   HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
   HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
   HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
3. Systems with HFC23 are not superpressurised.
4. Components listed are appropriate for the gas as indicated.

Certificate No: 587a

LPG HFCS Discharge Valves, including syphon tube for HFC23

Product Name	Description	LPCB Ref. No.
2131910B	LPG190-13	587a/30
2131450B	LPG145-13	
2131280B	LPG128-13	

LPG HFCS Fixed Fire Fighting Components

1. This range of equipment is suitable for storage from -20º to 55ºC
2. Systems are specified as follows:
   HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
   HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
   HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
3. Systems with HFC23 are not superpressurised.
4. Components listed are appropriate for the gas as indicated.

Certificate No: 587a

LPG HFCS Discharge Valves, including syphon tube for HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
2001910B	LPG190-00	587a/31
2001450B	LPG145-00	
2001280B	LPG128-00	

LPG HFCS Fixed Fire Fighting Components

1. This range of equipment is suitable for storage from -20º to 55ºC
2. Systems are specified as follows:
   HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
   HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
   HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
3. Systems with HFC23 are not superpressurised.
4. Components listed are appropriate for the gas as indicated.

Certificate No: 587a

LPG HFCS Discharge Containers for HFC23, HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
10120100	120 l. container	587a/32
10950100	100 l. container	
10750100	75 l. container	
10670080	67 l. container	
10400080	40.2 l. container	
10260060	26.8 l. container	
10130060	13.4 l. container	
10050060	5.0 l. container	

LPG HFCS Fixed Fire Fighting Components

1. This range of equipment is suitable for storage from -20º to 55ºC
2. Systems are specified as follows:
   HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
   HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
   HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
3. Systems with HFC23 are not superpressurised.
4. Components listed are appropriate for the gas as indicated.

Certificate No: 587a

LPG HFC227ea Container Valve Assemblies

Product Name	Description	LPCB Ref. No.
70102070	5L Container Valve Assembly, LPG128-00 (1)	587a/33
70102076	13.4L Container Valve Assembly, LPG128-00 (1)	
70102079	13.4L Container Valve Assembly, LPG128-00 (2)	
70102057	26.8L Container Valve Assembly, LPG128-00 (1)	
70102060	26.8L Container Valve Assembly, LPG128-00 (2)	
70102063	40.2L Container Valve Assembly, LPG145-00 (1)	
70102066	40.2L Container Valve Assembly, LPG145-00 (2)	
71102019	67L Container Valve Assembly, LPG145-00 (1)	
71102022	67L Container Valve Assembly, LPG145-0 (3)	
71102024	67L Container Valve Assembly, LPG145-00 (2)	
72102019	75L Container Valve Assembly, LPG190-00 (1)	
72102023	75L Container Valve Assembly, LPG190-00 (3)	
72102017	75L Container Valve Assembly, LPG190-00 (2)	
74102016	100L Container Valve Assembly, LPG190-00 (1)	
74102019	100L Container Valve Assembly, LPG190-00 (3)	
74102020	100L Container Valve Assembly, LPG190-00 (2)	
75102018	120L Container Valve Assembly, LPG190-00 (1)	
75102021	120L Container Valve Assembly, LPG190-00 (3)	
75102023	120L Container Valve Assembly, LPG190-00 (2)	

Notes:

(1) Master with solenoid actuator
(2) Slave with blind cap w/out solenoid actuator
(3) Master with 1/8 " solenoid actuator

All above assemblies include pressure gauge + switch

LPG HFCS Fixed Fire Fighting Components

1. This range of equipment is suitable for storage from -20º to 55ºC
2. Systems are specified as follows:
   HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
   HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
   HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
3. Systems with HFC23 are not superpressurised.
4. Components listed are appropriate for the gas as indicated.

Certificate No: 587a

LPG HFCS Discharge Hoses for HFC23, HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
30508HFC	Rigid telescopic hose 1.5" (1)	587a/34
30508080	Rigid hose 1½" HG/MF (1)	
30508000	Rigid hose 1½" HG/HG (1)	
30506HFC	Rigid hose 1" (1)	
30502140	R2F hose 400 G 1" HG/HF (1)	
30506000	R2F hose 320 G 1" HG/HG (1)	
30506070	R2F hose 400 G ¾" HG/HF (1)	

Notes:

(1) Maximum Working Pressure 160 bar

LPG HFCS Fixed Fire Fighting Components

1. This range of equipment is suitable for storage from -20º to 55ºC
2. Systems are specified as follows:
   HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
   HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.

HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.

3. Systems with HFC23 are not superpressurised.
4. Components listed are appropriate for the gas as indicated.

Certificate No: 587a

LPG HFCS Manifolds for HFC23, HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
3811VCCD	Single Row manifold	587a/35

Notes: According to the following:

V denotes container size: '1' means 67L, '2' means 75L and '4' means 100L/120L

CC denotes number of ports

D denotes manifold diameter where '3' means 1 ¼", '4' means 1 ½", '5' means 2", '6' means 2 ½", '7' means 3" and '8' means 4"

LPG HFCS Fixed Fire Fighting Components

1. This range of equipment is suitable for storage from -20º to 55ºC
2. Systems are specified as follows:
   HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
   HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
   HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
3. Systems with HFC23 are not superpressurised.
4. Components listed are appropriate for the gas as indicated.

Certificate No: 587a

LPG Discharge Pressure Switches for Inert 200 bar, Inert 300 bar, HFC23, HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
30330010	Discharge Pressure Switch	587a/36

LPG HFCS Fixed Fire Fighting Components

1. This range of equipment is suitable for storage from -20º to 55ºC
2. Systems are specified as follows:
   HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
   HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
   HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
3. Systems with HFC23 are not superpressurised.
4. Components listed are appropriate for the gas as indicated.

Certificate No: 587a

LPG HFCS Pressure Gauges for HFC23

Product Name	Description	LPCB Ref. No.
30216010	0-160 pressure gauge short socket	587a/37
3021160B	0-160 pressure gauge, long socket	
30116052	0-160 pressure gauge + switch, short socket, set 90 bar	
30116053	0-160 pressure gauge + switch, long socket, set 90 bar	

LPG HFCS Fixed Fire Fighting Components

1. This range of equipment is suitable for storage from -20º to 55ºC
2. Systems are specified as follows:
   HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
   HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
   HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
3. Systems with HFC23 are not superpressurised.
4. Components listed are appropriate for the gas as indicated.

Certificate No: 587a

LPG HFCS Pressure Gauges for HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
30210100	0-100 pressure gauge short socket	587a/38
3021100B	0-100 pressure gauge long socket	
30116040	0-100 pressure gauge + switch, short socket	
30116037	0-100 pressure gauge + switch, long socket	

LPG HFCS Fixed Fire Fighting Components

1. This range of equipment is suitable for storage from -20º to 55ºC
2. Systems are specified as follows:
   HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
   HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
   HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
3. Systems with HFC23 are not superpressurised.
4. Components listed are appropriate for the gas as indicated.

Certificate No: 587a

LPG Pressure Gauge for Inert (100 bar)

Product Name	Description	LPCB Ref. No.
30116054	0-160 pressure gauge + switch	587a/39

Certificate No: 587a

LPG Check Valves for HFC23, HFC125 & HFC227ea

Product Name	Description	LPCB Ref. No.
20006060	Ball check valve 1.0" (brass) (1)	587a/40
20006067	Ball check valve 1" (steel) (1)	
20006HFC	Ball telescopic check valve 1.0" (brass) (1)	
20007HFC	Ball telescopic check valve 1" (steel) (1)	
20008000	Piston check valve 2"(1)	
20008HFC	Piston telescopic check valve 2" (1)	
21006302	Pistonvalve 2" (U. L. version) (1)	
21006303	Piston telescopic check valve 2" (U.L. version) (1)	

Notes:

(1) These check valves are rated for a maximum working pressure of 160bar

Certificate No: 587a

LPG HFCS Brackets for HFC23, HFC125 and HFC227ea

Product Name	Description	LPCB Ref. No.
30620310	Modular 3L	587a/41
30621310	Modular 5/7/13L	
30625010	Modular 26/40L	
30626711	Modular 67/75L	
30621010	Modular 100/120L	
306XX6SS(1)	Single row 67L	
306XX7SN(1)	Single row 75L	
306021002	Kit 2 bottles 100/120L single row	
306031002	Kit 3 bottles 100/120L single row	

Notes:

1. XX denotes the number of containers
2. The number and combination of kits depends on the number of containers in the battery.

LPG HFCS Fixed Fire Fighting Components

1. This range of equipment is suitable for storage from -20º to 55ºC
2. Systems are specified as follows:
   HFC23: System pressure is specified as 41 bar @ 20°C, maximum filling density 0.85 kg/l.
   HFC125: System pressure is specified as 41 bar @ 20ºC, maximum filling density 0.93 kg/l.
   HFC227ea: System pressure is specified as 41 bar @ 20ºC, maximum filling density 1.15 kg/l.
3. Systems with HFC23 are not superpressurised.
4. Components listed are appropriate for the gas as indicated.

Certificate No: 587a

LPG Pneumatic Line Actuation for Inert 200 bar, Inert 300 bar, HFC23, HFC125 and HFC 227ea

Product Name	Description	LPCB Ref. No.
3023024B	Solenoid actuator 13W/24V	587a/42
30130197	Solenoid actuator 1/8 output	
30180APB	Manual actuator	
3018NAPB	Dual manual actuator	

Certificate No: 587a

LPG Pneumatic Line Actuation for Inert 200 bar, Inert 300 bar, HFC23, HFC125 and HFC 227ea

Product Name	Description	LPCB Ref. No.
30027200	Pneumatic cone (used with HFCs)	587a/43
30027201	Pneumatic cone (used with Inerts)	
35116429	Tee for pneumatic cone (3 way + ¼" plug)	
302.200.075	¼" relief valve	
30027301	Decompression screw (short)	
30506014	PTFE hose ¼" x 580mm (1)	
30522001	PTFE hose ¼" x 700mm (1)	
29012804	128-90 pilot container valve with pressure gauge + switch	
29012804.SOL	128-90 pilot container valve with pressure gauge and std solenoid	
2901280B	128-90 pilot container valve with pressure gauge	
2901280B.SOL	128-90 pilot container valve with pressure gauge and std solenoid	
21114045	128-97 pilot container valve with pressure gauge + switch	
21114045.SOL	128-97 pilot container valve with pressure gauge + switch and std solenoid	
21114008	128-97 pilot container valve with pressure gauge	
21114008.SOL	128-97 pilot container valve with pressure gauge and std solenoid	

Notes:

(1) Maximum working pressure = 140 bar

Certificate No: 587a

LPG Pilot Valve Assemblies (100 bar Nitrogen)

Product Name	Description	LPCB Ref. No.
70100075	3L Pilot Valve Assembly, LPG128-90, W28.8, DIN477	587a/44
70100082	13L Pilot Valve Assembly, LPG128-90, DIN 477	
70121011	50L Pilot Valve Assembly, LPG128-90, DIN 477	
70100083	13L PESO Pilot Valve Assembly, LPG128-90, DIN 477	
70121012	50L PESO Pilot Valve Assembly, LPG128-90, DIN 477	

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Certificate No: 463l

NAFFCO 200 bar Inert Container valves

Product Name	Part Number	LPCB Ref. No.
200 bar Inert Container Valve	NF-IG-CV200	463l/01

- This range of equipment is suitable for storage temperatures from -20ºC to +50ºC and is approved for use with 200 bar inert gas
- System pressure is specified as 200 bar at +15ºC

Certificate No: 463l

NAFFCO 300 bar Inert Container valves

Product Name	Part number	LPCB Ref. No.
300 bar Inert Container valve	NF-IG-CV300	463l/02

- This range of equipment is suitable for storage temperatures from -20ºC to +50ºC and is approved for use with 300 bar inert gas

- System pressure is specified as 300 bar at +15ºC

Certificate No: 463l

NAFFCO Actuators

Product Name	Part number	LPCB Ref. No.
Electrical Actuator	NF-IG-EMA	463l/03
Pneumatic / Manual Actuator	NF-IG-PMA	
Pneumatic Actuator	NF-IG-PA (PN20)	
	NF-IG-PA (PN10)	

- This range of equipment is suitable for storage temperatures from -20ºC to +50ºC and is approved for use with NAFFCO 200 bar inert gas and 300 bar inert gas container valves

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Certificate No: 855h to IS 7285-2:2004

Inertech Cylinders - PESO (Seamless)

Product Name	Description	LPCB Ref. No.
51152677-1-xxx (1,4,6)	Inertech 300 bar WP nominal 267mm diameter Seamless Cylinder (PESO)	855h/01
51173568-1-yyy (2,4,7)	Inertech 300 bar WP nominal 356mm diameter Seamless Cylinder (PESO)	855h/02
51126726-2-zzz (3,5,8)	Inertech 200 bar WP nominal 267mm diameter Seamless Cylinder (PESO)	855h/03

Notes:

1. Cylinders are approved for use in the Indian service market only in accordance with IS 7285-2:2004 by Chief Controller of Explosives (Reference G3(42)530/II) fitted with Valve Reference G3(4)201 [P/N NF311203]. The cylinders do not comply with European Directive 84/225/EEC or TPED.
2. Cylinders are approved for use in the Indian service market only in accordance with IS 7285-2:2004 by Chief Controller of Explosives (Reference G3(42)530/III) fitted with Valve Reference G3(4)201. [P/N NF311203] The cylinders do not comply with European Directive 84/225/EEC or TPED.
3. Cylinders are approved for use in the Indian service market only in accordance with IS 7285-2:2004 by Chief Controller of Explosives (Reference G3(42)530/I) fitted with Valve Reference G3(4)201. [P/N NF311203]The cylinders do not comply with European Directive 84/225/EEC or TPED.
4. Maximum Working Pressure 300 Bar @ 15°C.
5. Maximum Working Pressure 200 Bar @ 15°C.
6. Where, ‘xxx’ in the seamless cylinder part number is replaced with the cylinder capacity in litres; applicable sizes are 90, 95 or 100 litres only.
7. Where, ‘yyy’ in the seamless cylinder part number is replaced with the cylinder capacity in litres; applicable sizes are 120, 125, 130, 135, 140, 145, 150, 155, 160, 165, 170, 175, 180 litres only.
8. Where, ‘zzz’ in the seamless cylinder part number is replaced with the cylinder capacity in litres; applicable sizes are 35, 40, 45, 50, 56, 60, 68, 80 litres only.

Certificate No: 855g to EN 12094-4

Inertech Container Valves and Regulator

Product Name	Description	LPCB Ref. No.
NF311202	Inertech 200 bar Container Valve	855g/02
NF311203	Inertech 300 bar Container Valve	855g/03
NF311250	Inertech Discharge Constant Pressure Regulator	855g/05

Inertech Firefighting components:

a. This range of equipment is suitable for storage temperatures of -20 to 50°C and is approved for use with IG-01, IG-55, IG-100 and IG-541.

b. Inertech equipment is approved for use in conjunction with Eurotech Fire Protection Ltd Design Manual Reference 'Eurotech Inertech Manual' Issue June 2013.

c. Nominal system pressure for Inertech components at 15°C is stated at 200 bar or 300 bar.

Certificate No: 855e

Nitin227 & Nitin1230 Fire Fighting Components

a. This range of equipment is suitable for storage temperatures of -20°C to 50°C and is approved for use with HFC227ea and FK 5-1-12 (Novec™ 1230)
b. HFC227ea equipment is approved for use in conjunction with Nitin Fire Protection Industries Ltd Design Manual Reference **'**Nitin Fire HFC227 Manual' - Issue 09-06 'June 2009'.
c. FK 5-1-12 equipment is approved for use in conjunction with Nitin Fire Protection Industries Ltd Design Manual Reference **'**Nitin Fire Novec1230 Manual' - Issue 09-06 'June 2009'.
d. Nominal system pressure for HFC227ea components at 20°C is stated at 25 bar or 42 bar.
e. Nominal system pressure for FK 5-1-12 components at 20°C is stated at 25 bar or 42 bar.

Certificate No: 855e

Nitin227 & Nitin1230 Container Valves

Product Name	Description	LPCB Ref. No.
NF21330x	33mm Container Valve (1, 2)	855e/01
NF21331x	33mm Container Valve with Integral Solenoid Actuator (1)	855e/02
NF21490x	49mm Container Valve	855e/03
NF21491x	49mm Container Valve with Integral Solenoid Actuator	855e/04

Certificate No: 855g to EN 12094-4

Nitin227, Nitin1230 & Inertech Container Valve Actuators

Product Name	Description	LPCB Ref. No.
NF26010	Solenoid Actuator	855g/04
NF26011	Solenoid Actuator with reverse EMF diode	
NF26020	Pneumatic Actuator	
NF26030	Pneumatic/Manual Actuator	

Nitin227 & Nitin1230 Firefighting Components:

This range of equipment is suitable for storage temperatures of -20°C to 50°C and is approved for use with HFC227ea and FK 5-1-12 (Novec™ 1230).

a. HFC227ea equipment is approved for use in conjunction with Eurotech Fire Protection Ltd Design Manual Reference 'Eurotech Fire HFC227 Manual' - Issue 13-03.

b. FK 5-1-12 equipment is approved for use in conjunction with Eurotech Fire Protection Ltd Design Manual Reference 'Eurotech Fire Novec1230 Manual' - Issue 13-04.

c. Nominal system pressure for HFC227ea components at 20°C is stated at 25 bar or 42 bar.

d. Nominal system pressure for FK 5-1-12 components at 20°C is stated at 25 bar or 42 bar.

Certificate No: 855e

Nitin227 & Nitin1230 Flexible Connectors

Product Name	Description	LPCB Ref. No.
NF271xxx	Pilot hose (Type 3 Connector) (2)	855e/09
NF2333xxx	33mm Discharge hose (Type 1 Connector) (2)	855e/10
NF2349xxx	49mm Discharge hose (Type 1 Connector) (2)	855e/11

Certificate No: 855e

Nitin227 & Nitin1230 Check and Non Return Valves

Product Name	Description	LPCB Ref. No.
NF2433x	33mm Discharge Check Valve (3)	855e/12
NF2449x	49mm Discharge Check Valve (3)	855e/13

Certificate No: 855f

Nitin227 & Nitin1230 Nozzles

Product Name	Description	LPCB Ref. No.
NF2515 xyzzz	15mm Nozzle (4, 5, 6)	855f/01
NF2520 xyzzz	20mm Nozzle (4, 5, 6)	855f/02
NF2525 xyzzz	25mm Nozzle (4, 5, 6)	855f/03
NF2532 xyzzz	32mm Nozzle (4, 5, 6)	855f/04
NF2540 xyzzz	40mm Nozzle (4, 5, 6)	855f/05
NF2500 xyzzz	50mm Nozzle (4, 5, 6)	855f/06

Notes:
1) Where ‘x’ in container valve part number is replaced with ’2’ for 25 bar nominal charge pressure or ‘4’ for 42 bar nominal charge pressure.
2) Where ‘xxx’ in connector part number is replaced with the connector length in mm.
3) Where ‘x’ in check valve part number is replaced with ’1’ for BSPT thread or ‘2’ for NPT thread.
4) Where ‘x’ in nozzle part number is replaced with ’1’ for NPT thread or ‘2’ for BSPT thread.
5) Where ‘y’ in nozzle part number is replaced with ’1’ for 180° coverage pattern or ‘2’ for 360° coverage pattern.
6) Where ‘zzz’ in nozzle part number is the nozzle drilling in 0.00mm (Minimum approved drilling size 3mm).

Certificate No: 855e to EN 12094-5

Inertech Selector Valves

Product Name	Description	LPCB Ref. No.
NF34015	Inertech Selector Valve DN15	855e/17
NF34020	Inertech Selector Valve DN20	
NF34025	Inertech Selector Valve DN25	
NF34032	Inertech Selector Valve DN32	
NF34040	Inertech Selector Valve DN40	
NF34050	Inertech Selector Valve DN50	

Note: Selector valves for use with Inertech 60 bar constant discharge regulator (Model Ref NF311250) only. Specified pressure in accordance with note in EN 12094-5 Table 1 is $\leq$ 60 bar for all agents and temperatures.

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Inertech Fire Fighting Components

a. This Range of equipment is suitable for storage temperatures of -20℃ to 50℃ and is approved for used with IG-55, IG-541, IG-100 and IG-01
b. Inertech equipment is approved for use in conjunction with Nitin Ventures Design Manual Reference ‘Eurotech Inertech Manual’ Issue ‘May2012’

c. Nominal system pressure for Inertech components at 15℃ is stated at 200 bar or 300 ba

Certificate No: 724Ca

Inertech Container Valves and Regulator

Product Name	Description	LPCB Ref. No.
NF311202	Inertech 200 bar Container Valve	724Ca/02
NF311203	Inertech 300 bar Container Valve	724Ca/03
NF311250	Inertech Discharge Constant Pressure Regulator	724Ca/05

Certificate No: 724Ca

Eurosafe227, Eurosafe1230 & Inertech Container Valve Actuators

Product Name	Description	LPCB Ref. No.
NF26010	Solenoid Actuator	724Ca/04
NF26011	Solenoid Actuator with reverse EMF diode	
NF26020	Pneumatic Actuator	
NF26030	Pneumatic/Manual Actuator	

Certificate No: 855Be

Inertech Flexible Connectors

Product Name	Description	LPCB Ref. No.
NF3312xxx	Inertech Discharge Hose	855Be/14
NF370xxx	Inertech Actuation Hose	855Be/15

Inertech Notes:
Where 'xxx' in connector part number is replaced with the connector length in mm; i.e. 300, 400 and 500mm for discharge connectors and 350, 450 and 600mm for actuation connectors.

Certificate No: 855Be

Inertech Check Valve

Product Name	Description	LPCB Ref. No.
NF34131	Inertech Check Valve	855Be/16

Certificate No: 855Bf

Inertech Nozzles

Product Name	Description	LPCB Ref. No.
NF35150	Inertech Nozzle DN15 360°	855Bf/07
NF35152	Inertech Nozzle DN15 360°	
NF35200	Inertech Nozzle DN20 360°	855Bf/08
NF35250	Inertech Nozzle DN25 360°	855Bf/09
NF35320	Inertech Nozzle DN32 360°	855Bf/10
NF35400	Inertech Nozzle DN40 360°	855Bf/11
NF35500	Inertech Nozzle DN50 360°	855Bf/12

Inertech Notes:
Nozzle NF35152 is as NF35150 with additional strainer/filter to allow openings below 3mm.

Certificate No: 855Be to EN 12094-5

Inertech Selector Valves

Product Name	Description	LPCB Ref. No.
NF34015	Inertech Selector Valve DN15	855Be/17

Product Name	Description	LPCB Ref. No.
NF34020	Inertech Selector Valve DN20	
NF34025	Inertech Selector Valve DN25	
NF34032	Inertech Selector Valve DN32	
NF34040	Inertech Selector Valve DN40	
NF34050	Inertech Selector Valve DN50	

Note: Selector valves for use with Inertech 60 bar constant discharge regulator (Model Ref NF311250) only. Specified pressure in accordance with note in EN 12094-5 Table 1 is $\leq$ 60 bar for all agents and temperatures.

RG Green Systems

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Certificate No: 1475a to EN 12094-4;2004

Constant Flow Container Valves

Product Name	Description	Max. Working Pressure, bar	Max. Outlet Pressure, bar	LPCB Ref. No.
RGS-MAM-RD9	max free cross sectional area 70.9mm^2	360	60	1475a/01
RGS-MAM-RD11	max free cross sectional area 103.9mm^2	360	60	1475a/02

Notes:

The above components are suitable for use with IG55 and IG541 at service temperatures of -20°C to +50°C.

Container pressure is specified as 150, 200 or 300 bar at 15°C.

System pressure downstream of the container valves is specified as a maximum of 60bar.

Certificate No: 1475b to EN 12094-4;2004

Container Valve Actuators

Product Name	Description	Max. Working Pressure, bar	LPCB Ref. No.
RGS-MAM-03	Pilot cartridge valve adaptor	190	1475b/01
227 SOLR	Electrical (mounted on RGS-MAM-03)	65	1475b/02
227 SOLCR	Electrical (mounted on RGS-MAM-03)	200	1475b/03
227 DM	Manual (mounted on electrical actuator)	360	1475b/04
227 DMS	Manual (mounted on electrical actuator)	360	1475b/05

Notes:

The above components are suitable for use with IG55 and IG541 at service temperatures of -20°C to +50°C.

Container pressure is specified as 150, 200 or 300 bar at 15°C.

System pressure downstream of the container valves is specified as a maximum of 60bar.

Certificate No: 1475c to EN 12094-4;2004

Pilot Cylinder Valves

Product Name	Description	Max. Working Pressure, bar	LPCB Ref. No.
RGS-MAM-11-4	max free cross sectional area 113mm^2	190	1475c/01
RGS-MAM-12-4*	max free cross sectional area 113mm^2	190	1475c/02

Notes:

The above components are suitable for use with IG55 and IG541 at service temperatures of -20°C to +50°C.

Container pressure is specified as 150, 200 or 300 bar at 15°C.

System pressure downstream of the container valves is specified as a maximum of 60bar.
*with additional pressure switch port and pilot port

Certificate No: 1475d to EN 12094-4;2004

Pilot Cylinder Valve Actuators

Product Name	Description	Max. Working Pressure, bar	LPCB Ref. No.
227 SOL	Electrical	65	1475d/01
227 SOLC	Electrical	200	1475d/02
227 CN	Pneumatic	360	1475d/03

Notes:
The above components are suitable for use with IG55 and IG541 at service temperatures of -20°C to +50°C.
Container pressure is specified as 150, 200 or 300 bar at 15°C.
System pressure downstream of the container valves is specified as a maximum of 60bar.

Certificate No: 1475e to EN 12094-10:2003

Pressure Gauges & Pressure Gauges + Switch

Product Name	Description	Pressure ranges, bar	LPCB Ref. No.
PGS.11.040	Pressure gauge + switch 1/8 NPT	0-60, 0-100, 0-250, 0-315 and 0-400	1475e/01

Notes:
The above components are suitable for use with IG55 and IG541 at service temperatures of -20°C to +50°C.
Container pressure is specified as 150, 200 or 300 bar at 15°C.
System pressure downstream of the container valves is specified as a maximum of 60bar.

Certificate No: 1475f to EN 12094-11:2003

Mechanical Weighing Device

Product Name	Description	Min/Max Permissible Gross Load, kg	LPCB Ref. No.
SIEX-WD	Weight monitor with switch	56-338	1475f/01

Notes:
The above components are suitable for use with IG55 and IG541 at service temperatures of -20°C to +50°C.
Container pressure is specified as 150, 200 or 300 bar at 15°C.
System pressure downstream of the container valves is specified as a maximum of 60bar.

Certificate No: 1475g to EN 12094-8:2006

Connectors

Product Name	Description	Max. Working Pressure, bar	LPCB Ref. No.
FH-15CO	Flexible discharge connector (type 1)	275	1475g/01
FH-20HC	Flexible discharge connector (type 1)	215	1475g/02
FH-20A	Flexible discharge connector (type 1)	360	1475g/03
FH-21A	Flexible discharge connector (type 1)	360	1475g/04
DH 21	Flexible discharge connector (type 1)	280	1475g/05
DH 21I*	Flexible discharge connector (type 1)	280	1475g/06
FH-6PO	Flexible actuator hose (type 3)	224	1475g/07
FH-7PO	Flexible actuator hose (type 3)	360	1475g/08
DH 10	Flexible actuator hose (type 3)	280	1475g/09
DH 10I*	Flexible actuator hose (type 3)	280	1475g/10
DH 11	Flexible actuator hose (type 3)	450	1475g/11
DH 11I*	Flexible actuator hose (type 3)	450	1475g/12

Notes:

The above components are suitable for use with IG55 and IG541 at service temperatures of -20°C to +50°C.

Container pressure is specified as 150, 200 or 300 bar at 15°C.

System pressure downstream of the container valves is specified as a maximum of 60bar.

*connections made with AISI 306 stainless steel

Certificate No: 1475h to EN 12094-13:2001

Check Valves and Non-Return Valves

Product Name	Description	Max. Working Pressure, bar	LPCB Ref. No.
VALAN-15CO	Check valve ½"	240	1475h/01
VALAN-21A	Check valve ¾"	360	1475h/02
VALAN-22A	Check valve ¾"	360	1475h/03
VALAN-WFR8	Non-return valve ¼"	240	1475h/04
VALAN-WFR8-316	Non-return valve ¼"	240	1475h/05

Notes:

The above components are suitable for use with IG55 and IG541 at service temperatures of -20°C to +50°C.

Container pressure is specified as 150, 200 or 300 bar at 15°C.

System pressure downstream of the container valves is specified as a maximum of 60bar.

Certificate No: 1475i to EN 12094-5:2006

Selector Valves for IG55 & IG541

Product Name	Description	Max. Working Pressure, bar	LPCB Ref. No.
SVD20	Selector Valve, CO_2 , HFC-125, HFC-227ea, FK-5-1-12	140	1475i/01
SVD25	Selector Valve, CO_2 , HFC-125, HFC-227ea, FK-5-1-12	140	1475i/02
SVD32	Selector Valve, CO_2 , HFC-125, HFC-227ea, FK-5-1-12	140	1475i/03
SVD40	Selector Valve, CO_2 , HFC-125, HFC-227ea, FK-5-1-12	140	1475i/04
SVD50	Selector Valve, CO_2 , HFC-125, HFC-227ea, FK-5-1-12	140	1475i/05
SVD65	Selector Valve, CO_2 , HFC-125, HFC-227ea, FK-5-1-12	140	1475i/11
SVD80	Selector Valve, CO_2 , HFC-125, HFC-227ea, FK-5-1-12	140	1475i/12
SVD100	Selector Valve, CO_2 , HFC-125, HFC-227ea, FK-5-1-12	140	1475i/13
SVDA25	Selector Valve, inert gas	360	1475i/06
SVDA32	Selector Valve, inert gas	360	1475i/07
SVDA40	Selector Valve, inert gas	360	1475i/08
SVDA50	Selector Valve, inert gas	360	1475i/09
SVDA65	Selector Valve, inert gas	360	1475i/10

Notes:

The above components are suitable for use with IG55 and IG541 at service temperatures of -20°C to +50°C.

Container pressure is specified as 150, 200 or 300 bar at 15°C.

System pressure downstream of the container valves is specified as a maximum of 60bar.

Certificate No: 1475j & 1475k to prEN 12094-7:2006

Nozzles

Product Name	Description	Size	LPCB Ref. No.
FEDR10	360°nozzle	G 3/8	1475j/01
FEDR10A	360°nozzle	G 3/8	1475j/02
FEDR15	360°nozzle	G 1/2	1475j/03
FEDR15A	360°nozzle	G 3/4	1475j/04
FEDR20	360°nozzle	G 3/4	1475j/05
FEDR20A	360°nozzle	G 3/4	1475j/06
FEDR25	360°nozzle	G 1	1475j/07
FEDR25A	360°nozzle	G 1	1475j/08

Product Name	Description	Size	LPCB Ref. No.
FEDR32	360°nozzle	G 11/4	1475j/09
FEDR32A	360°nozzle	G 11/4	1475j/10
FEDR40	360°nozzle	G 11/2	1475j/11
FEDR40A	360°nozzle	G 11/2	1475j/12
FEDR50	360°nozzle	G 2	1475j/13
FEDR10180	180°nozzle	G 3/8	1475k/01
FEDR10180A	180°nozzle	G 3/8	1475k/02
FEDR15180	180°nozzle	G 1/2	1475k/03
FEDR15180A	180°nozzle	G 1/2	1475k/04
FEDR20180	180°nozzle	G 3/4	1475k/05
FEDR20180A	180°nozzle	G 3/4	1475k/06
FEDR25180	180°nozzle	G 1	1475k/07
FEDR25180A	180°nozzle	G 1	1475k/08
FEDR32180	180°nozzle	G 11/4	1475k/09
FEDR32180A	180°nozzle	G 11/4	1475k/10
FEDR40180	180°nozzle	G 11/2	1475k/11
FEDR40180A	180°nozzle	G 11/2	1475k/12
FEDR50180	180°nozzle	G 2	1475k/13

Notes:

The above components are suitable for use with IG55 and IG541 at service temperatures of -20°C to +50°C.

Container pressure is specified as 150, 200 or 300 bar at 15°C.

System pressure downstream of the container valves is specified as a maximum of 60bar.

Safety Hi-Tech Srl

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Certificate No: 969a

NAF S 125 & NAF S 227 Container Valves

Product Name	Description	Agent	LPCB Ref. No.
SH20025128	SHT V20	NAF S 125	969a/01
SH20025129	SHT V20	NAF S 227	
SH20025145	SHT V25	NAF S 125	
SH20025146	SHT V25	NAF S 227	
SH20025190	SHT V40	NAF S 125	
SH20025191	SHT V40	NAF S 227	
SH20012128	SHT V20-N2	Nitrogen	

a. This range of equipment is suitable for storage from -20º to 50ºC (HFC125) or 0º to 50ºC (HFC227ea), (See Note 2).
b. Nominal system pressure for HFC 227ea and HFC 125 components at 21°C is stated at 42 bar.

Certificate No: 969a

NAF S 125 & NAF S 227 Container Valve Actuators

Product Name	Description	LPCB Ref. No.
SH31009401	Manual actuator	969a/02
SH30027302	1 way high pressure cone	
SH30027303	2 way high pressure cone	
SH21006403	Solenoid actuator	
SH21006404	Solenoid actuator 1/8" connection	
SH31009402	Manual / Pneumatic actuator	

a. This range of equipment is suitable for storage from -20º to 50ºC (HFC125) or 0º to 50ºC (HFC227ea), (See Note 2).
b. Nominal system pressure for HFC 227ea and HFC 125 components at 21°C is stated at 42 bar.

Certificate No: 969a

NAF S 125 & NAF S 227 Discharge Connectors

Product Name	Description	LPCB Ref. No.
SH30506000	1 x 320 mm flexible connector type 1 (1)	969a/03
SH30502140	1 x 400 mm flexible connector type 1 (2)	
SH30506070	¾" x 400 mm flexible connector type 1 (3)	
SH30503290	1/8 x 160 mm PTFE flexible connector type 3 (4)	
SH30506014	¼" x 580 mm PTFE flexible connector type 3 (4)	
SH30522001	¼" x 700 mm PTFE flexible connector type 3 (4)	
SH30508080	1 ½" rigid connector type 5 (4)	
SH30508000	1 ½" rigid connector type 5 (4)	

(1) Max Working Pressure 69 bar
(2) Max Working Pressure 185 bar
(3) Max Working Pressure 240 bar
(4) Max Working Pressure 132 bar

Certificate No: 969a

NAF S 125 & NAF S 227 Check Valves

Product Name	Description	LPCB Ref. No.
SH20006060	1 Check Valve	969a/04
SH21006302	2 Check Valve	

Siemens Switzerland Limited

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Website: www.sbt.siemens.com

Siemens Sinorix™ CO2 Fire Fighting Components

1. This range of equipment is suitable for storage temperatures from -20ºC to +60ºC and is approved for use with CO2
2. This range of equipment is approved for use with Siemens Building Technologies data sheet 04-01-902 Revision: 0
3. System pressure is specified as 60 bar at +20ºC

Certificate No: 126z

Siemens Sinorix™ CO2 Container valves

Product Name	Description	LPCB Ref. No.
CX505127	CO2 Container Valve	126z/10

Siemens Sinorix™ Cerexen ® Fire Fighting Components

1. This range of equipment is suitable for storage temperatures from -20ºC to +60ºC and is approved for use with 200 bar inert gas
2. This range of equipment is approved for use with Siemens Building Technologies data sheet 04-02-901 Revision: 0
3. System pressure is specified as 200 bar at +15ºC

Certificate No: 126z

Siemens Sinorix™ Cerexen ® 200 bar Inert Container valves

Product Name	Description	LPCB Ref. No.
CX505120	200 bar Inert Container Valve	126z/07

Siemens Sinorix™ Cerexen ® 300 bar Inert Container valves

4. This range of equipment is suitable for storage temperatures from -20ºC to +60ºC and is approved for use with 300 bar inert gas
5. This range of equipment is approved for use with Siemens Building Technologies data sheet 04-02-902 Revision: 0
6. System pressure is specified as 300 bar at +15ºC

Certificate No: 126z

Siemens Sinorix™ Cerexen ® 300 bar Inert Container valves

Product Name	Description	LPCB Ref. No.
CX505135	300 bar Inert Container Valve	126z/08

Certificate No: 724a

Siemens Sinorix Cerexen Inert Container Valves Discharge Regulator

Product Name	Description	LPCB Ref. No.
S54476-B263-A1	Discharge Constant Pressure Regulator	724a/05

Siemens Sinorix™ Cerexen ® Actuators

7. This range of equipment is suitable for storage temperatures from -20ºC to +60ºC and is approved for use with Siemens CX505127, CX505120 and CX505135 Container Valves.
8. This range of equipment is approved for use with Siemens Building Technologies data sheet 04-03-900 Revision: 0

Certificate No: 126z

Siemens Sinorix™ Cerexen ® Actuators

Product Name	Description	LPCB Ref. No.
CX505131	Pneumatic Actuator	126z/09
CX505130	Pneumatic Actuator	
CX505132	Pneumatic/Manual Actuator	
CX505134	Electrical Actuator	

Siemens Sinorix™ Cerexen ® Selector Valves

9. This range of equipment is suitable for storage temperatures of -20°C to 50°C and is approved for use with Cerexen
10. This range of equipment is approved for us in conjunction with Siemens Design manual reference 000010_a. - Revision: March 2005
11. Nominal system pressure at 15°C is stated at 200 bar.

Certificate No: 126z

Siemens Sinorix ™ Cerexen ® 200 bar and 300 bar Inert Container Valve Assemblies

Product Name	Description	LPCB Ref. No.
S54476-C3-C2	10 litre Container Valve Assembly - (Nitrogen/200 bar)	126z/06
S54476-C1-C5	80 litre Container Valve Assembly - (Nitrogen/200 bar)	
S54476-C2-C1	140 litre Container Valve Assembly - (Nitrogen/200 bar)	
S54476-C1-C15	80 litre Container Valve Assembly - (Nitrogen/300 bar)	
S54476-C140-A1	140 litre Container Valve Assembly - (Nitrogen/300 bar)	
S54476-C8-C2	80 litre Container Valve Assembly - (Argon/200 bar)	
S54476-C9-C1	140 litre Container Valve Assembly - (Argon/200 bar)	
S54476-C8-C4	80 litre Container Valve Assembly - (Argon/300 bar)	
S54476-C140-A2	140 litre Container Valve Assembly - (Argon/300 bar)	
S54476-C9-A1	80 litre Container Valve Assembly - (IG541/300 bar)	
S54476-C140-A3	140 litre Container Valve Assembly - (IG541/300 bar)	

Certificate No: 126z

Siemens Sinorix™ Cerexen ® Selector Valves

Product Name	Description	LPCB Ref. No.
1½" Selector Valve	1½" Selector Valve	126z/01
2" Selector Valve	2 Selector Valve	

Siemens Sinorix™ Cerexen ® Nozzles

9. This range of equipment is suitable for storage temperatures of -20°C to 50°C and is approved for use with Cerexen
10. This range of equipment is approved for us in conjunction with Siemens Design manual reference 000010_a. - Revision: March 2005
11. Nominal system pressure at 15°C is stated at 200 bar.

Certificate No: 126z

Siemens Sinorix™ Cerexen ® Nozzles

Product Name	Description	LPCB Ref. No.
Cerexen Type Nozzle - 2 Hole	Nozzle	126z/02
	½" Nozzle	
	¾" Nozzle	
	1 Nozzle	
	1 ¼" Nozzle	
	1 ½" Nozzle	
	2 Nozzle	
Cerexen Type Nozzle - 4 Hole	Nozzle	126z/03
	½" Nozzle	
	¾" Nozzle	
	1 Nozzle	
	1 ¼" Nozzle	
	1 ½" Nozzle	
	2 Nozzle	

Siemens Sinorix™ Cerexen ® Flexible Connectors

9. This range of equipment is suitable for storage temperatures of -20°C to 50°C and is approved for use with Cerexen
10. This range of equipment is approved for us in conjunction with Siemens Design manual reference 000010_a. - Revision: March 2005
11. Nominal system pressure at 15°C is stated at 200 bar.

Certificate No: 126z

Siemens Sinorix™ Cerexen ® Flexible Connectors

Product Name	Description	LPCB Ref. No.
MTD2040N-P 1006KP	Pilot line hose (Type 3)	126z/04
MTD2040N-P 1010KP	Pilot line hose (Type 3)	
MTKH60000-P 1112KZ2P	Manifold hose (Type 1)	

Siemens Sinorix™ Cerexen ® Pressure Reduction Devices

9. This range of equipment is suitable for storage temperatures of -20°C to 50°C and is approved for use with Cerexen
10. This range of equipment is approved for us in conjunction with Siemens Design manual reference 000010_a. - Revision: March 2005
11. Nominal system pressure at 15°C is stated at 200 bar.

Certificate No: 126z

Siemens Sinorix™ Cerexen ® Pressure Reduction Devices

Product Name	Description	LPCB Ref. No.
Cerexen Blende Type 1½"	1½" Orifice Plate	126z/05
Cerexen Blende Type 2"	2 Orifice Plate	

Tyco Fire and Integrated Solutions (the trading company for Tyco Fire and Integrated Solutions (UK) Limited and Tyco Fire and Integrated Solutions (Ireland) Limited)

Tyco Park, Grimshaw Lane, Newton Heath, Manchester M40 2WL, United Kingdom
Tel: +44 (0)161 205 2321 • Fax: +44 (0)161 455 4459
Website: www.tycofis.com

Inergen Fire Fighting Components

a. This range of equipment is suitable for storage temperatures of -20°C to +50°C and is approved for use with Inergen.
b. This range of equipment is approved for use in conjunction with Tyco Fire and Integrated Solutions Design Manual Reference 'Inergen 300 bar Manual' .
c. System pressure is specified as 300 bar at 15°C.
d. A range of mounting brackets and retention assemblies for secure container are also available.

Certificate No: 014a

INERGEN Container and Container Bracket Assemblies

Product Name	Description	Capacity (ltr)	LPCB Ref. No.
SL93035	80 litre	80	014a/01
SL93036	67 litre	67	
SL93037	40 litre	40	
SL93038	27 litre	27	

Certificate No: 014a

INERGEN Discharge Manifolds

Product Name	Description	Nominal Bore (mm)	LPCB Ref. No.
SL94063	560-6 Manifold	50	014a/02
SL94064	840-9 Manifold	50	
SL94065	1120-12 Manifold	50	
SL94066	1400-15 Manifold	50	
SL94146	DOS Manifold 900-3	25	
SL94147	DOS Manifold 1200-4	25	
SL94148	DOS Manifold 1500-5	25	

Certificate No: 014a

INERGEN Check Valves

Product Name	Description	Nominal Bore (mm)	LPCB Ref. No.
SL94228	Check Valve	DN7	014a/03
SL93812	Pilot Cylinder Assembly	-	

Certificate No: 014a

INERGEN Orifice Units

Product Name	Description	Orifice Size	LPCB Ref. No.
SL94076	2" Orifice Unit	3mm - 30mm	014a/04
SL94092	3" Orifice Unit	20mm 56mm	
SL94143	DOS Orifice Unit	1mm 5mm	

Certificate No: 014a

INERGEN Nozzles

Product Name	Description	Orifice Size	LPCB Ref. No.
SL93943	½" 360° NPT	3mm - 10mm	014a/05
SL93938	1" 360° NPT	10mm - 20mm	
SL93773	1½" 360° NPT	8mm - 28mm	

Nozzles sized in accordance with system calculations.

Certificate No: 014a

INERGEN Connectors

Product Name	Description	Nominal Bore (mm)	LPCB Ref. No.
SL94061	Discharge Hose	DN10	014a/06
SL94049	Actuation Hose	DN8	
SL94050	Pilot hose	DN6	

Certificate No: 724Aa

INERGEN Container Valves

Product Name	Description	LPCB Ref. No.
BL0480 2007	300 bar Inert Container Valve	724Aa/03

Certificate No: 724Aa

INERGEN Actuators

Product Name	Description	LPCB Ref. No.
SL94045	Electric Actuator	724Aa/04
SL94046	Pneumatic Actuator	
SL94047	Pneumatic/Manual Actuiator	
SL942124	Manual Actuator	014a/07

Certificate No: 014a

INERGEN Pressure Gauge

Product Name	Description	LPCB Ref. No.
SL94059	Cylinder 300 bar	014a/08

Tyco Fire Protection Products (Barcelona)

Mestre Joan Corrales 107-109, 08950 Esplugues de Llobregat, Barcelona M40 2WL, Spain
E-mail: TFPP_EMEA_Communications@tyco-bspd.com • Website: www.tfppemea.com

Tyco 200 bar and 300 bar Inert Fixed fire Fighting Components

1. This range of equipment is suitable for storage and environmental conditions from -20º to +50º and is approved for use with Inert 55 and all combinations of Argon and Nitrogen.
2. This range of equipment is approved for use with Tyco Design Manual reference: MD/55/01/IN/TY.
3. Nominal system pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 446Ba

Tyco Discharge Valves for Inert (200 bar) and Inert (300 bar)

Product Name	Description	LPCB Ref. No.
2000306V	128-60 container valve (200 bar)	446Ba/01
26512800	128-65 container valve (330 bar)	
2000280V	128-80 container valve (200 bar)	446Ba/02
28512800	128-85 container valve (330 bar)	

Certificate No: 446Ba

Tyco Restrictors for Inert (200 bar) and Inert (300 bar)

Product Name	Description	LPCB Ref. No.
61350005	¾" Restrictor	446Ba/17
61350006	1 Restrictor	
61350007	1 ¼" Restrictor	
61350008	1 ½" Restrictor	
61350009	2 Restrictor	

Certificate No: 446Ba

Tyco Discharge Containers for Inert (200 bar) and Inert (300 bar)

Product Name	Description	LPCB Ref. No.
10800080	80 litre cylinder (200 bar)	446Ba/19
11400060	140 litre cylinder (200 bar)	
10800300	80 litre cylinder (300 bar)	
11400300	140 litre cylinder (300 bar)	

Certificate No: 446Ba

Tyco Discharge Hoses for Inert (200 bar) and Inert (300 bar)

Product Name	Description	LPCB Ref. No.
30522010	¾" flexible hose	446Ba/18

Certificate No: 446Ba

Tyco Check Valves for Inert (200 bar) and Inert (300 bar)

Product Name	Description	LPCB Ref. No.
20006050	¾" check valve	446Ba/20

Certificate No: 446Ba

Tyco Nozzles for Inert (200 bar) and Inert (300 bar)

Product Name	Description	LPCB Ref. No.
30400000	⅜" 360° nozzle	446Ba/21
30400001	½" 360° nozzle	
30400002	¾" 360° nozzle	
30400003	1" 360° nozzle	
30400004	1 ¼" 360° nozzle	
30400005	1 ½" 360° nozzle	
30400006	2" 360° nozzle	
30400007	⅜" 180° nozzle	
30400008	½" 180° nozzle	
30400009	¾" 180° nozzle	
30400010	1" 180° nozzle	
30400011	1 ¼" 180° nozzle	
30400012	1 ½" 180° nozzle	
30400013	2" 180° nozzle	

Certificate No: 446Ba

Tyco Pneumatic Line Actuation for Inert 200 bar, Inert 300 bar

Product Name	Description	LPCB Ref. No.
3023024B	Solenoid actuator 13W/24V	446Ba/09
30130197	Solenoid actuator 1/8" output	
30180APB	Manual actuator	
30180NAPB	Dual manual actuator	
2901280B	128-90 container valve	446Ba/10
30111APB	1 way cone high pressure	
30112APB	2 way cone high pressure	
30113APB	3 way cone high pressure	
20007020	¼" relief valve	
3080008C	Pressure relief screw (short)	
3080008L	Pressure relief screw (long)	
30522001	PTFE hose ¼" x 700mm	
30506014	PTFE hose ¼" x 580mm	
10020000	2 litre cylinder	

WIKA Alexander Wiegand SE & Co. KG

Alexander Wiegand-Strasse 30, Klingenberg 63911, Germany
Tel: +49 9372 132-5367
E-mail: christian.luley@wika.com • Website: www.wika.de

Certificate No: 980a/01 to EN12094-10

Wika Pressure gauges with switch

Product Name	Description	LPCB Ref. No.
PGS 21.050	0-40 bar range	980a/01
	0-60 bar range	
	0-100 bar range	
	0-160 bar range	
	0-250 bar range	
	0-315 bar range	
	0-400 bar range	

Approved with cable connection; PG9 Cable gland; DIN Snap connector or M8 Plug and cable electrical connectors.

- LPCB approval of system components (Part 4: Section 2.1);
- Assessment to the relevant parts of ISO 14520 - *Gaseous fire-extinguishing systems* or EN 15004 - *Fixed Firefighting Systems - Gas Extinguishing Systems;*
- Testing to LPS 1230: *Requirements for Fire Testing of Fixed Gaseous Fire Extinguishing Systems;* and
- Review of the system design manual, software programme and installation & maintenance manual specified in the system approval Listing

Notes:

1. Gases used for extinguishing fires are generally hazardous to health. In selecting a system, specifiers are advised to carry out proper risk assessments based on the latest health and safety datasheets.
2. LPCB strongly recommends that the design and installation of these systems be carried out by a Certificated LPS 1204 company (see Part 4, Section 1).

Carrier Airconditioning & Refrigeration Ltd

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Certificate No: 594Cb to LPS 1230

ARGONITE 150, 200, 300 bar Fixed Gaseous Fire Extinguishing System

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
ARGONITE	Class A Standard (Solid fires e.g. Paper, wood, plastics)	40.1%	Design concentration includes 30% safety factor	594Cb/01
	Class A Cables (Solid fire risks including Cables)	47.6%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g. heptane)	47.1%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentration Class A Cables System test concentration. Where this value is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 206880.
Extinguishing concentrations are as tested in BRE Test Report Numbers 206879 and 216485 (ISO 14520-1 tests).

This system uses:

Design, Installation, Maintenance and User Manual:
General Manual - Argonite System, MA-01-9006-0100, Revision 10 dated February 2008

Software Programme: VdS-Version 7.2 (2007)

a) This system is suitable for storage in environmental conditions from -20°C to +55°C
b) System pressure is specified as 150 bar, 200 bar and 300 bar @ 15°C

Ceasefire Industries Pvt. Ltd

Plot No. 4, Second Floor, Sector - 135, Noida, Uttar Pradesh 201301, India
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E-mail: amit@ceasefire.in • Website: www.ceasefire.in

Certificate No: 1329e to LPS 1230

Ceasefire HFC227ea 25 bar and 42 bar Fixed Gaseous Fire Extinguishing System

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Ceasefire HFC227ea 25 bar and 42 bar Fixed Gaseous Fire Extinguishing System	Class A Standard (Solid fires e.g. Paper, wood, plastics)	7.8 %	Design concentration includes 30% safety factor	1329e/01
	Class A Cables (Solid fire risks including Cables)	8.2 %	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g. heptane)	9.2 %	Design concentration includes 30% safety factor	

Notes:
Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentration Class A Cables System test concentration. Where this value is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 300712.
Extinguishing concentrations are as verified in BRE Test Report Number 300712
This system is suitable for storage in environmental conditions from -20°C to +50°C
System pressure is specified as 25 bar or 42 bar @ 21°C

This system uses:
Components as listed in Part 4, Section 2.1 and described in Handbook of Design, Installation, Operation and System Maintenance of Ceasefire HFC227ea: - CF/HFC/MAN/001, dated 12.04.2017, Version 01, Revision 00 which utilises
Software Programme:
Hughes Associates Inc., S/N000001 CFG: 705161
For 25 bar system; AgentCalcs for HFC227ea-25 bar GEN 3.02; Copyright Hughes Associates, Inc.; S/N000001 -408AEC6C CFG: 705161400 Rev:3.0.261
For 42 bar system; AgentCalcs for HFC227ea-42 bar GEN 3.12 Copyright Hughes Associates, Inc.; S/N000001 -36E48F9A CFG: 705161400 Rev:3.0.263

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Certificate No: 1222a to LPS 1230

Eurotech227 & Eurosafe227 - 25 bar & 42 bar HFC 227ea Gaseous Fire Suppression Systems

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Eurotech227 & Eurosafe227	Class A Standard (Solid fires e.g. paper, wood, plastics)	7.8%	Design concentration includes 30% safety factor	1222a/01
	Class A Cables (Solid fires risks including cables)	8.2%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g.heptane)	9.2%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 In BRE Test Report Numbers 231870 (25 bar) & 254632 (42 bar) (Class A and B risks) and Test Letter 282069 (Class A Cables risks)
Extinguishing concentrations are as tested in BRE Test Report Number 231870 (ISO 14520-1 tests).

This system uses:

Design Manual: **'**Eurotech Fire HFC227 Manual' - Issue 13-03
Software Programme : Vds Schadenverhutung calculation package version 7.3
This system is suitable for storage and environmental conditions from -20° to 50°C.
System pressure is specified as 25 bar and 42 bar at 20°.

Certificate No: 1222a to LPS 1230

Eurotech1230 & Eurosafe1230 - 25 bar & 42 bar FK 5-1-12 (Novec™ 1230) Gaseous Fire Suppression Systems

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Eurotech1230 & Eurosafe1230	Class A Standard (Solid fires e.g. paper, wood, plastics)	5.3%	Design concentration includes 30% safety factor	1222a/02
	Class A Cables (Solid fires risks including cables)	5.5%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g.heptane)	6.5%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 in BRE Test Report Numbers 231870 (25 bar) & 254632 (42 bar) (Class A and B risks) and Test Letter 282069 (Class A Cables risks)
Extinguishing concentrations are as tested in BRE Test Report Number 231870 (ISO 14520-1 tests).

This system uses:

Design Manual: **'**Eurotech Fire Novec1230 Manual' - Issue 13-04
Software Program: VdS Schadenverhutung calculation package version 7.2
This system is suitable for storage and environmental conditions from -20º to 50ºC.
System pressure is specified as 25 bar and 42 bar at 20ºC.

Certificate No: 1222a to LPS 1230

Inertech IG-01 200 bar & 300 bar Gaseous Fire Suppression Systems

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Inertech IG-01	Class A Standard (Solid fires e.g. paper, wood, plastics)	45.5%	Design concentration includes 30% safety factor	1222a/03
	Class A Cables (Solid fires risks including cables)	49.6%	Confirmation that 'minimum safety factor' is adequate	
	Class B (Liquid Fires e.g.heptane)	52.7%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 in BRE Test Report Numbers 270432
Extinguishing concentrations are as tested in BRE Test Report Number 270432 (EN 15004-1 tests).

This system uses:

Design Manual: **'**Eurotech Inertech System Manual' Issue June 2013
Software Program: VdS Flow Calc Version 2.2 .
This system is suitable for storage and environmental conditions from -20° to 50°C.
System pressure is specified as 200 bar and 300 bar at 15°C.

Certificate No: 1222a to LPS 1230

Inertech IG-55 200 bar & 300 bar Gaseous Fire Suppression Systems

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Inertech IG-55	Class A Standard (Solid fires e.g. paper, wood, plastics)	40.0%	Design concentration includes 30% safety factor	1222a/04
	Class A Cables (Solid fires risks including cables)	43.8%	Confirmation that 'minimum safety factor' is adequate	
	Class B (Liquid Fires e.g.heptane)	47.1%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 in BRE Test Report Numbers 270432
Extinguishing concentrations are as tested in BRE Test Report Number 270432 (EN 15004-1 tests).

This system uses:

Design Manual: **'**Eurotech Inertech System Manual' Issue June 2013
Software Program: VdS Flow Calc Version 2.2 .
This system is suitable for storage and environmental conditions from -20° to 50°C.
System pressure is specified as 200 bar and 300 bar at 15°C.

Certificate No: 1222a to LPS 1230

Inertech IG-100 200 bar & 300 bar Gaseous Fire Suppression Systems

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Inertech IG-100	Class A Standard (Solid fires e.g. paper, wood, plastics)	38.9%	Design concentration includes 30% safety factor	1222a/05
	Class A Cables (Solid fires risks including cables)	42.8%	Confirmation that 'minimum safety factor' is adequate	
	Class B (Liquid Fires e.g.heptane)	46.3%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 in BRE Test Report Numbers 270432
Extinguishing concentrations are as tested in BRE Test Report Number 270432 (EN 15004-1 tests).

This system uses:

Design Manual: **'**Eurotech Inertech System Manual' Issue June 2013.
Software Program: VdS Flow Calc Version 2.2 .
This system is suitable for storage and environmental conditions from -20° to 50°C.
System pressure is specified as 200 bar and 300 bar at 15°C.

Certificate No: 1222a to LPS 1230

Inertech IG-541 200 bar & 300 bar Gaseous Fire Suppression Systems

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Inertech IG-541	Class A Standard (Solid fires e.g. paper, wood, plastics)	38.5%	Design concentration includes 30% safety factor	1222a/06
	Class A Cables (Solid fires risks including cables)	45.7%	Confirmation that 'minimum safety factor' is adequate	
	Class B (Liquid Fires e.g.heptane)	46.5%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 270432
Extinguishing concentrations are as tested in BRE Test Report Number 270432 (EN 15004-1 tests).

This system uses:

Design Manual: **'**Eurotech Inertech System Manual' Issue June 2013
Software Program: VdS Flow Calc Version 2.2 .
This system is suitable for storage and environmental conditions from -20° to 50°C.
System pressure is specified as 200 bar and 300 bar at 15°C.

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Certificate No: 331w to LPS 1230

Fike ProInert Fixed Gaseous Fire Extinguishing System

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Fike Proinert Fixed Gaseous Fire Extinguishing System	Class A Standard (Solid fires e.g. paper, wood, plastics)	39.7%	Design concentration includes 30% safety factor	331w/01
	Class A Cables (Solid fire risks including cables)	44.3%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g. heptane)	46.0%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentration Class A Cables System test concentration. Where this value is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 214668.
Extinguishing concentrations are as tested in BRE Test Report Number 214668 (ISO 14520-1 tests).

This system uses:

Design, Installation, Maintenance and User Manual: Fike manual, P/N 06-294, Issue August 2009.
Software Programme: Fike ProInert flow calculation Software, Version 6.2

a) This system is suitable for storage in environmental conditions from -20° to +50°.
b) Container pressure is specified as 200 bar or 300 bar @ 15°C

Fire Eater A/S

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Certificate No: 1287b to LPS 1230

Fire Eater IG541 200 bar & 300 bar

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Fire Eater Control Inert INERGEN	Class A Standard (Solid fires e.g. paper, wood, plastics	37.2%	Design concentration includes 30% safety factor	1287b/01
	Class A Cables (Solid fires risks including cables)	42.6%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g.heptane)	43.7%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 291411 (200 bar and 300 bar)
Extinguishing concentrations are as tested in BRE Test Report Number 291410 (EN 15004-1 tests).

This system uses:

Design Manual: 'Fire Eater Control Inert Extinguishing System - Design, Installation, Maintenance and User Manual' – Revision 2015-02-23
Software Program: Fire Eater A/S Inergen Program, IMT version 2.2.x.
This system is suitable for storage and environmental conditions from -20ºC to +65ºC.
System pressure is specified as 200 bar and 300 bar at 15ºC.

Fireater

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Certificate No: 587Cb to LPS 1230

Sapphire™

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Fireater Sapphire™	Class A Standard (Solid fires e.g. paper, wood, plastics)	6.0%	Design concentration includes 30% safety factor	587Cb/01
	Class A Cables (Solid fire risks including cables)	6.1%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid fires e.g. heptane)	6.4%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentration Class A Cables System test concentration. Where this value is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 208832 v2.
Extinguishing concentrations are as tested in BRE Test Report Number 208831 (ISO 14520-1 tests)

This system uses:

Design, Installation, Maintenance and User Manual:	Fireater Novec™ 1230 Total Flooding Systems (Engineered & Pre-engineered) Design Manual Reference 14a-06F Issue 5
Software Programme:	TSPNovec 1230 FlowCalc Version FIRE3.60b

a) This system is suitable for storage in environmental conditions from -20° to +50°.
b) System pressure is specified as 25 bar @ 20°C

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Certificate No: 594b to LPS 1230

Argonite 150, 200, 300 bar Fixed Gaseous Fire Extinguishing System

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Argonite	Class A Standard (Solid fires e.g. paper, wood, plastics)	40.1%	Design concentration includes 30% safety factor	594b/01
	Class A Cables (Solid fire risks including cables)	47.6%	Confirmation that minimum safety factor is adequate.	
	Class B (Liquid Fires e.g. heptane)	47.1%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations Class A Cables System test concentration - where this is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 206880.
Extinguishment concentrations are as tested in BRE Test Report Number 206879 & 216485 (ISO 14520-1 tests)

This system uses:

Design, Installation, Maintenance and User Manual:
General Manual - Argonite System, MA-01-9006-0100, Revision 11 dated January 2015.

Software Programme : VdS-Version 7.3 (2009)

a) This system is suitable for storage in environmental conditions from -20° to +55°.
b) System pressure is specified as 150 bar, 200 bar and 300 bar @ 15°C.

Certificate No: 594d to LPS 1230

Argonite C Series 300 bar Fixed Gaseous Fire Extinguishing System

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Argonite C Series	Class A Standard (Solid fires e.g paper, wood, plastics)	40.3%	Design concentration includes 30% safety factor	594d/01
	Class A Cables (Solid fire risks including cables)	44.0%	Confirmation that minimum safety factor is adequate.	
	Class B (Liquid Fires e.g. heptane)	47.5%	Design concentration includes 30% safety factor	

Notes:

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).

Design concentrations Class A Cables System test concentration - where this is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.

Design concentrations are as tested to LPS 1230 in BRE Test Report Number 253355

Extinguishment concentrations are as tested in BRE Test Report Number 206879 & 216485 (ISO 14520-1 tests).

This system uses:

Design, Installation, Maintenance and User Manual: General Manual - Argonite C60 System, MA -01-9008-0100, Revision 1.0 dated November 2011.

Software Programme: Kidde Argonite Program, VdS-Version 1.7 (2009).

a) This system is suitable for storage in environmental conditions from -20° to +50°.

b) Container pressure is specified as 300 bar @ 15°C.

Certificate No: 594e to LPS 1230

Kidde Inert Gas System (400 Series) - IG01

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
IG-01	Class A Standard (Solid fires e.g. Paper, wood, plastics)	42.4 %	Design concentration includes 30% safety factor	594e/01
	Class A Cables (Solid fire risks including Cables)	50.2 %	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g. heptane)	51.6 %	Design concentration includes 30% safety factor	

Notes:
This system is suitable for storage in environmental conditions from -20°C to +50°C
Storage pressure is specified as 200 bar or 300 bar @ 15°C. System pressure is specified as 55 bar.

This system uses:
Components as listed in Part 4, Section 2.1 and as described in

Kide Fire Protection Inert Gas System (400 Series) Design, Installation, Operation and Maintenance Manual:
P/N 06-237518-001, dated July 2018, Revision AA which utilises the following software

Software Programme: Kidde Fire Protection - Flow Calculation v 4.00,
Licensed to Kidde Fenwal
Copyright: Jensen Hughes Inc

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentration Class A Cables System test concentration. Where this value is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.
Design concentrations are as tested to LPS 1230 in BRE Test Report Number P102562-1002.
Extinguishing concentrations are as verified in BRE Test Report Number P102562-1001

Certificate No: 594e to LPS 1230

Kidde Inert Gas System (400 Series) - IG55

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
IG-55	Class A Standard (Solid fires e.g. Paper, wood, plastics)	38.9 %	Design concentration includes 30% safety factor	594e/02
	Class A Cables (Solid fire risks including Cables)	44.2 %	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g. heptane)	45.9 %	Design concentration includes 30% safety factor	

Notes:
This system is suitable for storage in environmental conditions from -20°C to +50°C
Storage pressure is specified as 200 bar or 300 bar @ 15°C. System pressure is specified as 55 bar.

This system uses:

Components as listed in Part 4, Section 2.1 and as described in

Kide Fire Protection Inert Gas System (400 Series) Design, Installation, Operation and Maintenance Manual:
P/N 06-237518-001, dated July 2018, Revision AA which utilises the following software

Software Programme: Kidde Fire Protection - Flow Calculation v 4.00,
Licensed to Kidde Fenwal
Copyright: Jensen Hughes Inc

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentration Class A Cables System test concentration. Where this value is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.
Design concentrations are as tested to LPS 1230 in BRE Test Report Number P102562-1002.
Extinguishing concentrations are as verified in BRE Test Report Number P102562-1001

Certificate No: 594e to LPS 1230

Kidde Inert Gas System (400 Series) - IG100

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
IG-100	Class A Standard (Solid fires e.g. Paper, wood, plastics)	38.9 %	Design concentration includes 30% safety factor	594e/03
	Class A Cables (Solid fire risks including Cables)	43.2 %	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g. heptane)	46.0 %	Design concentration includes 30% safety factor	

Notes:
This system is suitable for storage in environmental conditions from -20°C to +50°C
Storage pressure is specified as 200 bar or 300 bar @ 15°C. System pressure is specified as 55 bar.

This system uses:
Components as listed in Part 4, Section 2.1 and as described in

Kide Fire Protection Inert Gas System (400 Series) Design, Installation, Operation and Maintenance Manual:
P/N 06-237518-001, dated July 2018, Revision AA which utilises the following software

Software Programme: Kidde Fire Protection - Flow Calculation v 4.00,
Licensed to Kidde Fenwal
Copyright: Jensen Hughes Inc

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentration Class A Cables System test concentration. Where this value is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.
Design concentrations are as tested to LPS 1230 in BRE Test Report Number P102562-1002.
Extinguishing concentrations are as verified in BRE Test Report Number P102562-1001

Certificate No: 594e to LPS 1230

Kidde Inert Gas System (400 Series) - IG541

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
IG-541	Class A Standard (Solid fires e.g. Paper, wood, plastics)	39.1 %	Design concentration includes 30% safety factor	594e/04
	Class A Cables (Solid fire risks including Cables)	42.1 %	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g. heptane)	44.6 %	Design concentration includes 30% safety factor	

Notes:
This system is suitable for storage in environmental conditions from -20°C to +50°C

Storage pressure is specified as 200 bar or 300 bar @ 15°C. System pressure is specified as 55 bar.

This system uses:
Components as listed in Part 4, Section 2.1 and as described in

Kide Fire Protection Inert Gas System (400 Series) Design, Installation, Operation and Maintenance Manual:
P/N 06-237518-001, dated July 2018, Revision AA which utilises the following software

Software Programme: Kidde Fire Protection - Flow Calculation v 4.00,
Licensed to Kidde Fenwal
Copyright: Jensen Hughes Inc

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentration Class A Cables System test concentration. Where this value is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.
Design concentrations are as tested to LPS 1230 in BRE Test Report Number P102562-1002.
Extinguishing concentrations are as verified in BRE Test Report Number P102562-1001

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Certificate No: 446b to LPS 1230

LPG FE-13 Fixed gaseous fire extinguishing system

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
LPG FE-13	Class A Standard (Solid Fires e.g. paper, wood, plastics)	15.9%	Design concentration includes 30% safety factor	446b/01
	Class A Cables (Solid fire risks including cables)	16.5%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g. heptane)	16.1%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentration Class A Cables System test concentration. Where this value is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 206580.
Extinguishment concentrations are as tested in BRE Test Report Number 206579 (ISO 14520-1 tests)

This system uses:

Design Manual: MD/FE/IN-01 Rev 5
Software Programme : Firenet version 2.5, LPC, Nov. 2001.
Installation, Maintenance and User Manual for FE-13 Fire Extinguishing Systems, MU/FE/IN_02 Rev: 00
a) This system is suitable for storage in environmental conditions from -20° to 55°.
b) System pressure is specified as 41 bar @ 20°C and container maximum filling density is 0.85 kg/l.
c) Systems are not superpressurized.

Certificate No: 446b

LPG 'Inert 55' 200 bar and 300 bar Inert Gaseous Fire Suppression System

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Inert 55	Class A Standard (Solid fires e.g. paper, wood, plastics	41.0%	Design concentration includes 30% safety factor	446b/02
	Class A Cables (Solid fires risks including cables)	45.6%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g.heptane)	45.2%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentration Class A Cables System test concentration. Where this value is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.

Design concentrations are as tested to LPS 1230 in BRE Test Report Number 213932
Extinguishing concentrations are as tested in BRE Test Report Number 216936 (ISO 14520-1 tests).

This system uses:

Design Manual: MD/55/01/IN
Software Program: VdS Schadenverhutung calculation package version 4.6a.
This system is suitable for storage and environmental conditions from-20º to 50º.
System pressure is specified as 200 bar and 300 bar at 15ºC.

Certificate No: 446d to LPS 1230

LPG Sapphire

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
LPG Sapphire	Class A Standard (Solid fires e.g. paper, wood, plastics)	6.0%	Design concentration includes 30% safety factor	446d/01
	Class A Cables (Solid fire risks including cables)	6.1%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g. heptane)	6.4%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentration Class A Cables System test concentration. Where this value is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 208832 v2.
Extinguishing concentrations are as tested in BRE Test Report Number 208831 (ISO 14520-1 tests)

This system uses:

Design, Installation, Maintenance and User Manual: LPG Novec™ 1230 Total Flooding Systems (Engineered & Pre-engineered)
Design Manual Reference 14a-06L Issue 5

Software Programme: TSPNovec 1230 FlowCalc Version TSP3.60b

a) This system is suitable for storage in environmental conditions from -20° to +50°.
b) System pressure is specified as 25 bar @ 20°C

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Certificate No: 587Bb to LPS 1230

Hygood Sapphire™

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Hygood Sapphire™	Class A Standard (Solid fires, e.g. paper, wood, plastics)	6.0%	Design concentration includes 30% safety factor	587Bb/01
	Class A Cables (Solid fire risks including cables)	6.1%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid fires e.g. heptane)	6.4%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentration Class A Cables System test concentration. Where this value is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 208832 v2.
Extinguishing concentrations are as tested in BRE Test Report Number 208831 (ISO 14520-1 tests)

This system uses:

Design, Installation, Maintenance and User Manual: Hygood Novec™ 1230 Total Flooding Systems (Engineered & Pre-engineered)
Design Manual Reference 14a-06H Issue 5

Software Programme: Novec 1230 FlowCalc Version HYG3.60b

a) This system is suitable for storage in environmental conditions from -20° to +50°.
b) System pressure is specified as 24.8 bar @ 20°C

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Certificate No: 855d to LPS 1230

'Nitin227' 25 bar & 42 bar HFC 227ea Gaseous Fire Suppression System

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Nitin227	Class A Standard (Solid fires e.g. paper, wood, plastics)	7.8%	Design concentration includes 30% safety factor	855d/01
	Class A Cables (Solid fires risks including cables)	8.2%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g.heptane)	9.2%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 231870 (25 bar) & 254632 (42 bar) (Class A and B risks) and Test Letter 282069 (Class A Cables risks)
Extinguishing concentrations are as tested in BRE Test Report Number 231870 (ISO 14520-1 tests).

This system uses:

Design Manual: **'**Eurotech Fire HFC227 Manual' - Issue 13-03.
Software Program: VdS Schadenverhutung calculation package version 7.3 .
This system is suitable for storage and environmental conditions from -20º to 50ºC.
System pressure is specified as 25 bar and 42 bar at 20ºC.

Certificate No: 855d to LPS 1230

'Nitin1230' 25 bar & 42 bar FK 5-1-12 (Novec 1230) Gaseous Fire Suppression System

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Nitin1230	Class A Standard (Solid fires e.g. paper, wood, plastics)	5.3%	Design concentration includes 30% safety factor	855d/02
	Class A Cables (Solid fires risks including cables)	5.5%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g.heptane)	6.5%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 231870 (25 bar) & 254632 (42 bar) and Test Letter 282069 (Class A Cables risks)
Extinguishing concentrations are as tested in BRE Test Report Number 231870 (ISO 14520-1 tests).

This system uses:

Design Manual: **'**Eurotech Fire Novec1230 Manual' - Issue 13-04.
Software Program: VdS Schadenverhutung calculation package version 7.2 .
This system is suitable for storage and environmental conditions from -20º to 50ºC.
System pressure is specified as 25 bar and 42 bar at 20ºC.

Certificate No: 855d to LPS 1230

Inertech IG-01 200 bar & 300 bar Gaseous Fire Suppression Systems

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Inertech IG-01	Class A Standard (Solid fires e.g. paper, wood, plastics)	45.5%	Design concentration includes 30% safety factor	855d/03
	Class A Cables (Solid fires risks including cables)	49.6%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g.	52.7%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 270432.
Extinguishing concentrations are as tested in BRE Test Report Number 270432 (EN 15004-1 tests).

These systems use:
Design Manual: **'**Eurotech Inertech System Manual' – Issue June 2013.
Software Program: VdS Flow Calc Version 2.2 .
This system is suitable for storage and environmental conditions from -20º to 50ºC.
System pressure is specified as 200 bar and 300 bar at 15°C.

Certificate No: 855d to LPS 1230

Inertech IG-55 200 bar & 300 bar Gaseous Fire Suppression Systems

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Inertech IG-55	Class A Standard (Solid fires e.g. paper, wood, plastics)	40.0%	Design concentration includes 30% safety factor	855d/04
	Class A Cables (Solid fires risks including cables)	43.8%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g.	47.1%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 270432.
Extinguishing concentrations are as tested in BRE Test Report Number 270432 (EN 15004-1 tests).

These systems use:
Design Manual: **'**Eurotech Inertech System Manual' – Issue June 2013.
Software Program: VdS Flow Calc Version 2.2 .
This system is suitable for storage and environmental conditions from -20º to 50ºC.
System pressure is specified as 200 bar and 300 bar at 15°C.

Certificate No: 855d to LPS 1230

Inertech IG-100 200 bar & 300 bar Gaseous Fire Suppression Systems

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Inertech IG-100	Class A Standard (Solid fires e.g. paper, wood, plastics)	38.9%	Design concentration includes 30% safety factor	855d/05
	Class A Cables (Solid fires risks including cables)	42.8%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g.	46.3%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 270432.
Extinguishing concentrations are as tested in BRE Test Report Number 270432 (EN 15004-1 tests).

These systems use:

Design Manual: 'Eurotech Inertech System Manual' – Issue June 2013.
Software Program: VdS Flow Calc Version 2.2 .
This system is suitable for storage and environmental conditions from -20º to 50ºC.
System pressure is specified as 200 bar and 300 bar at 15°C.

Certificate No: 855d to LPS 1230

Inertech IG-541 200 bar & 300 bar Gaseous Fire Suppression Systems

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Inertech IG-541	Class A Standard (Solid fires e.g. paper, wood, plastics)	38.5%	Design concentration includes 30% safety factor	855d/06
	Class A Cables (Solid fires risks including cables)	45.7%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g.	46.5%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 270432.
Extinguishing concentrations are as tested in BRE Test Report Number 270432 (EN 15004-1 tests).

These systems use:
Design Manual: 'Eurotech Inertech System Manual' – Issue June 2013.
Software Program: VdS Flow Calc Version 2.2 .
This system is suitable for storage and environmental conditions from -20º to 50ºC.
System pressure is specified as 200 bar and 300 bar at 15°C.

Nitin Ventures FZE

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Certificate No: 855Bd to LPS 1230

Inertech IG-01 200 bar & 300 bar Gaseous Fire Suppression Systems

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Inertech IG-01	Class A Standard (Solid fires e.g. paper, wood, plastics)	45.5%	Design concentration includes 30% safety factor	855Bd/03
	Class A Cables (Solid fires risks including cables)	49.6%	Confirmation that 'minimum safety factor' is adequate	
	Class B (Liquid Fires e.g.heptane)	52.7%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 270432.
Extinguishing concentrations are as tested in BRE Test Report Number 270432 (EN 15004-1 tests).

This system uses:

Design Manual: 'Eurotech Inertech System Manual' - Issue June 2013.
Software Program: VdS Flow Calc Version 2.2 .
This system is suitable for storage and environmental conditions from -20° to 50°C.
System pressure is specified as 200 bar and 300 bar at 15°C.

Certificate No: 855Bd to LPS1230

Inertech IG-55 200 bar & 300 bar Gaseous Fire Suppression Systems

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Inertech IG-55	Class A Standard (Solid fires e.g. paper, wood, plastics)	40.0%	Design concentration includes 30% safety factor	855Bd/04
	Class A Cables (Solid fires risks including cables)	43.8%	Confirmation that 'minimum safety factor' is adequate	
	Class B (Liquid Fires e.g.heptane)	47.1%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 270432.
Extinguishing concentrations are as tested in BRE Test Report Number 270432 (EN 15004-1 tests).

This system uses:

Design Manual: **'**Eurotech Inertech System Manual' - Issue June 2013.
Software Program: VdS Flow Calc Version 2.2 .
This system is suitable for storage and environmental conditions from -20° to 50°C.
System pressure is specified as 200 bar and 300 bar at 15°C.

Certificate No: 855Bd to LPS1230

Inertech IG-100 200 bar & 300 bar Gaseous Fire Suppression Systems

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Inertech IG-100	Class A Standard (Solid fires e.g. paper, wood, plastics)	38.9%	Design concentration includes 30% safety factor	855Bd/05
	Class A Cables (Solid fires risks including cables)	42.8%	Confirmation that 'minimum safety factor' is adequate	
	Class B (Liquid Fires e.g.heptane)	46.3%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 270432.
Extinguishing concentrations are as tested in BRE Test Report Number 270432 (EN 15004-1 tests).

This system uses:

Design Manual: **'**Eurotech Inertech System Manual' Issue - June 2013.
Software Program: VdS Flow Calc Version 2.2 .
This system is suitable for storage and environmental conditions from -20° to 50°C.
System pressure is specified as 200 bar and 300 bar at 15°C.

Certificate No: 855Bd to LPS1230

Inertech IG-541 200 bar & 300 bar Gaseous Fire Suppression Systems

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Inertech IG-541	Class A Standard (Solid fires e.g. paper, wood, plastics)	38.5%	Design concentration includes 30% safety factor	855Bd/06
	Class A Cables (Solid fires risks including cables)	45.7%	Confirmation that 'minimum safety factor' is adequate	
	Class B (Liquid Fires e.g.heptane)	46.5%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 270432.
Extinguishing concentrations are as tested in BRE Test Report Number 270432 (EN 15004-1 tests).

This system uses:

Design Manual: **'**Eurotech Inertech System Manual' - Issue June 2013.
Software Program: VdS Flow Calc Version 2.2 .
This system is suitable for storage and environmental conditions from -20° to 50°C.

System pressure is specified as 200 bar and 300 bar at 15°C.

Thorn Security Limited

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Certificate No: 587Ab to LPS 1230

Thorn Sapphire

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Thorn Sapphire™	Class A Standard (solid fires e.g. paper, wood, plastics)	6.0%	Design concentration includes 30% safety factor	587Ab/01
	Class A Cables (solid fire risks including cables)	6.1%	Confirmation that minimum safety factor is adequate	
	Class B (liquid fires e.g. heptane)	6.4%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentration Class A Cables System test concentration. Where this value is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 208832 v2.
Extinguishing concentrations are as tested in BRE Test Report Number 208831 (ISO 14520-1 tests)

This system uses:

Design, Installation, Maintenance and User Manual: engineered) Design Manual Reference 14a-06 Issue 5	Thorn Novec™ 1230 Total Flooding Systems (Engineered & Pre-
Software Programme:	ThornNovec 1230 FlowCalc Version TSP3.60b

a) This system is suitable for storage in environmental conditions from -20° to +50°.
b) System pressure is specified as 25 bar @ 20°C

Tyco Fire and Integrated Solutions (the trading company for Tyco Fire and Integrated Solutions (UK) Limited and Tyco Fire and Integrated Solutions (Ireland) Limited)

Tyco Park, Grimshaw Lane, Newton Heath, Manchester M40 2WL, United Kingdom
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Website: www.tycofis.com

Certificate No: 014b to LPS 1230

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Wormald Ansul INERGEN	Class A Standard) Solid fires e.g. paper, wood, plastics)	43%	Design concentration includes 30% safety factor	014b/01
	Class A Cables (Solid fire risks including cables)	47.8%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid fires e.g. heptane)	46.7%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentration Class A Cables System test concentration. Where this value is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 206885.
Extinguishing concentrations are as tested in BRE Test Report Number 206884 (ISO 14520-1 tests)

This system uses:

Design, Installation, Maintenance and User Manual:
INERGEN 300 bar manual, P/N 13646raw, Issue March 2011
Software Programme:

C.A.P Version 14.04

a) This system is suitable for storage in environmental conditions from -20° to +50°C.
b) System pressure is specified as 300 bar @ 15°C
c) If this fixed gaseous fire extinguishing system is used with existing pipework (so called drop-in systems) it is the responsibility of the installing company to ensure that:
- all pipework can withstand system pressures and will be safe during operation;
- all pipework meets the requirements of the gas system manufacturers design manual; and
- all applicable legislation is complied with.

Tyco Safety Products (Great Yarmouth)

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Certificate No: 587b to LPS 1230

Tyco Safety Products Sapphire™

Product Name	Risk	Design Concentration	Comments	LPCB Ref. No.
Tyco Safety Products Sapphire™	Class A Standard (Solid fires e.g. paper, wood, plastics)	6.0%	Design concentration includes 30% safety factor	587b/01
	Class A Cables (Solid fire risks including cables)	6.1%	Confirmation that minimum safety factor is adequate	
	Class B (Liquid Fires e.g. heptane)	6.4%	Design concentration includes 30% safety factor	

Design concentration Class A Standard and Class B = Extinguishing concentration x safety factor (minimum 1.3).
Design concentration Class A Cables System test concentration. Where this value is lower than the Class A Standard value, the Class A Standard value should be used for design purposes.
Design concentrations are as tested to LPS 1230 in BRE Test Report Number 208832 v2.
Extinguishing concentrations are as tested in BRE Test Report Number 208831 (ISO 14520-1 tests)

This system uses:

Design, Installation, Maintenance and User Manual: TSP Novec^{TM} 1230 Total Flooding Systems (Engineered & Pre-engineered) Design Manual Reference 14a-06T Issue 5

Software Programme: TSPNovec 1230 FlowCalc Version TSP3.60b

a) This system is suitable for storage in environmental conditions from -20° to +50°.
b) System pressure is specified as 25 bar @ 20°C

The LPCB Approval Scheme for fixed fire extinguishing systems for catering equipment has been developed to provide protection against the specific risks posed by oil fires in cooking appliances used in catering or food production establishments.

Product Testing

The listed systems below have been assessed against LPS 1223 *Requirements and Testing Procedures for Approval of Fixed Fire Extinguishing Systems for Catering Equipment.* This standard not only addresses the fire extinguishing performance of the system but also includes the performance of the detection and associated control systems. The requirements of LPS 1223 include:

- Design manual assessment
- Component testing, including pressure testing
- System discharge tests
- System fire detection and extinguishment tests
- Long term ageing tests

Traditional extinguishing agents do not readily extinguish catering equipment oil fires because they do not provide a sufficient cooling effect to reduce the cooking oil to below its auto-ignition temperature. The fire extinguishing tests in LPS 1223 recognise this requirement together with the need to ensure that neither the composition of the agent nor the manner in which it is discharged onto the fire causes flaming oil to be ejected.

All listed systems are subject ongoing audit programmes.

Authorised installer requirement

Such fixed extinguishing systems rely upon competent designers and installers and as such LPS 1223 contains requirements placed upon the listed manufacturers to ensure they maintain adequate control over their authorised installers.

Fish and chip ranges

Fish and chip ranges are a specialised type of catering equipment that require special consideration with regards to protection, based on the position and orientation of the extract system.

Unless otherwise stated in the individual product entries, the listed systems are not approved for protection of fish and chip ranges.

Note: LPS 1263:Part 1 *Fire Performance Requirements for Kitchen Extract Systems*. has also been developed to provide additional protection against potential fire spread in the extract ductwork associated with grease filtration systems.

AIR Fire S.p.A.
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Certificate No: 1408a to LPS 1223: Issue 2.3

ARMANfire Chef Fixed Fire Extinguishing System for Catering Equipment

Product Name	Designation	Description	LPCB Ref. No.
ARMANfire Chef "Piccolo" Kitchen Suppression System	ARFCHEF06C	Manual and automatic operation, 11.8 litre cylinder (6 litres wet chemical agent), maximum of 3 discharge nozzles	1408a/01
	ARFCHEF08C	Manual and automatic operation, 11.8 litre cylinder (8 litres wet chemical agent), maximum of 4 discharge nozzles	1408a/02
ARMANfire Chef "Medio" Kitchen Suppression System	ARFCHEF10C	Manual and automatic operation, 15.9 litre cylinder (10 litres wet chemical agent), maximum of 5 discharge nozzles	1408a/03
	ARFCHEF12C	Manual and automatic operation, 15.9 litre cylinder (12 litres wet chemical agent), maximum of 6 discharge nozzles	1408a/04
	ARFCHEF14C	Manual and automatic operation, 25.3 litre cylinder (14 litres wet chemical agent), maximum of 7 discharge nozzles	1408a/05
ARMANfire Chef "Grande" Kitchen Suppression System	ARFCHEF16C	Manual and automatic operation, 25.3 litre cylinder (16 litres wet chemical agent), maximum of 8 discharge nozzles	1408a/06
	ARFCHEF18C	Manual and automatic operation, 25.3 litre cylinder (18 litres wet chemical agent), maximum of 9 discharge nozzles	1408a/07
	ARFCHEF20C	Manual and automatic operation, 25.3 litre cylinder (20 litres wet chemical agent), maximum of 10 discharge nozzles	1408a/08

Note:
AIR Fire S.p.A., ARMANfire Chef fixed fire extinguishing system for catering equipment, shall be installed, commissioned and maintained in accordance with the system manual 'ARMANfire Chef Kitchen Fire Suppression Installation and Maintenance User Manual', version 1.7 dated 11 Dec 2017.

Amerex Corporation

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Certificate No: 407a to LPS 1223

Amerex KP and ZD Fire Suppression System for catering equipment

Product Name	Designation	Description	LPCB Ref. No.
KP	275	Manual and automatic operation, 10.41 litres Amerex Kitchen Wet Chemical Agent	407a/01
	375	Manual and automatic operation, 14.2 litres Amerex Kitchen Wet Chemical Agent	
	475	Manual and automatic operation, 18.17 litres Amerex Kitchen Wet Chemical Agent	
	600	Manual and automatic operation, 23.23 litres Amerex Kitchen Wet Chemical Agent	
ZD	275	Manual and automatic operation, 10.41 litres Kitchen Wet Chemical Agent	407a/02
	375	Manual and automatic operation, 14.2 litres Amerex Kitchen Wet Chemical Agent	
	475	Manual and automatic operation, 18.17 litres Amerex Kitchen Wet Chemical Agent	

KP and ZD system shall be designed, installed and maintained in accordance with Amerex Design, Installation, Maintenance and Recharge Manual No 20150 Rev. MM#20150-12/2008 dated December 2008.

Ansul Incorporated

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Website: www.ansul.com

Certificate No: 591a to LPS 1223

Ansul R-102 Restaurant Fire Suppression System

Product Name	Designation	Description	LPCB Ref. No.
R-102	Single Tank System (1.5 or 3 US gallon)	Manual and automatic operation 5.7 or 11.4 litres Ansulex LpH™ liquid agent	591a/01

Product Name	Designation	Description	LPCB Ref. No.
	Double Tank System (4.5 or 6 US gallon)	Manual and automatic operation 17.1 or 22.7 litres Ansulex LpH™ liquid agent	
	Multiple Tank System	Manual and automatic operation, 28.4 - 170 litres Ansulex LpH™ liquid agent	
Piranha	Single Tank System (1.5, 2.25 or 3 US gallon)	Manual and automatic operation, 5.7, 8.5 or 11.4 litres PRX™ liquid agent	591a/02
	Multiple Tank System	Manual and automatic operation, 11.4 to 34.2 litres PRX™ liquid agent	

R-102 systems shall be designed, intalled and maintained in accordance with Ansul Design, Installation, Recharge and Maintenance Manual part No. 418087-011

Piranha systems shall be designed, installed and maintained in accordance with Ansul Design, Installation, Recharge and Maintenance Manual part No. 423385-08

Buckeye Fire Equipment

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Certificate No: 1467a to LPS 1223: Issue 2.3

Kitchen Mister Fixed Fire Extinguishing System for Catering Equipment

Product Name	Designation	Description	LPCB Ref. No.
Kitchen Mister Restaurant Cooking Area Fire Suppression System	BFR-5	Manual and automatic operation, 7.2 litres wet chemical agent, maximum of 5 flow points	1467a/01
	BFR-10	Manual and automatic operation, 14.4 litres wet chemical agent, maximum of 10 flow points	1467a/02
	BFR-15	Manual and automatic operation, 21.6 litres wet chemical agent, maximum of 15 flow points	1467a/03
	BFR-20	Manual and automatic operation, 28.8 litres wet chemical agent, maximum of 20 flow points	1467a/04

Notes:
Buckeye Fire Equipment, Kitchen Mister Restaurant Cooking Area Fire Suppression System, shall be installed, commissioned and maintained in accordance with the system manual 'BFR-TM', Revision 5 dated January 1, 2013.

Ceasefire Industries Pvt. Ltd

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Certificate No: 1329-1a to LPS 1223: issue 2.3

Restaurant Fire Suppression System

Product Name	Designation	Description	LPCB Ref. No.
Ceasefire water mist kitchen suppression system 2 x 6.5 litre capacity (1)	2 x 6.5 litre	Manual and automatic operation, water mist extinguishant	1329-1a/1

Product Name	Designation	Description	LPCB Ref. No.
Ceasefire water mist kitchen suppression system 4 x 6.5 litre capacity (1)	4 x 6.5 litre	Manual and automatic operation, water mist extinguishant	1329-1a/2
Ceasefire water mist kitchen suppression system 26 litre capacity (1)	1 x 26 litre	Manual and automatic operation, water mist extinguishant	1329-1a/3
Ceasefire wet chemical kitchen suppression system, 11.5 litre capacity (2)	1 x 11.5 litre	Manual and Automatic operation, Wet chemical extinguishant	1329-1a/4
Ceasefire wet chemical kitchen suppression system, 15.6 litre capacity (2)	1 x 15.6 litre	Manual and Automatic operation, Wet chemical extinguishant	1329-1a/5
Ceasefire wet chemical kitchen suppression system, 25 litre capacity (2)	1 x 25 litre	Manual and Automatic operation, Wet chemical extinguishant	1329-1a/6

Notes:
(1) Ceasefire water mist kitchen suppression system shall be installed, maintained and operated in accordance with technical and operational documentation SGMP-K/DTI/2 rev.4 5.
(2) Ceasefire wet chemical kitchen suppression system shall be installed, maintained and operated in accordance with Handbook of Design, Installation, Operation and System Maintenance, dated 19.11.2014, version 00, Rev 01.

Certificate No: 1239Bb to LPS 1223: issue 2.2

Restaurant Fire Suppression System

Product Name	Designation	Description	LPCB Ref. No.
Ceasefire Wet Chemical Kitchen Safe Ultra Series Suppression System 11.5 litre	1 x 11.5 litre Cylinder	Manual and automatic operation, wet chemical containing up to 8 litres of extinguishant	1239Bb/01
Ceasefire Wet Chemical Kitchen Safe Ultra Series Suppression System 15.6 litre	1 x 15.6 litre Cylinder	Manual and automatic operation, wet chemical containing up to 12 litres of extinguishant	1239Bb/02
Ceasefire Wet Chemical Kitchen Safe Ultra Series Suppression System 25 litre	1 x 25 litre Cylinder	Manual and automatic operation, wet chemical containing up to 20 litres of extinguishant	1239Bb/03

Note:
Ceasefire Wet Chemical Kitchen Safe Ultra Series Suppression System shall be installed, operated and maintained in accordance with the Ceasefire Handbook of Design, Installation, Operation and System Maintenance manual version, 00 Rev 0.1, Dated 19.11.2014.

Ceodeux Extinguisher Valves Technology S.A. (Rotarex FIRETEC)

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E-mail: info@firetec.rotarex.com • Website: www.rotarex.com

Certificate No: 724b to LPS 1223

Rotarex FireDETEC

Product Name	Designation	Description	LPCB Ref. No.
Rotarex FireDETEC, wet chemical, restaurant fire suppression system.	B07503000	9 litre, Manual and Automatic operation, wet chemical extinguishant	724b/01
	B07503001	9 litre, Manual and Automatic operation, wet chemical extinguishant	724b/02

Note:
Rotarex FireDETEC, wet chemical restaurant fire suppression systems shall be installed, maintained and operated in accordance with Rotarex FireDETEC, Installation and Maintenance Manual FireDETEC System kits for kitchen version 07/2013.

Emirates Fire Fighting Equipment Factory L.L.C. (FIREX)

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Certificate No: 863f to LPS 1223: Issue 2.3

FIREX FX-KHS (Kitchen Hood System) Fixed Fire Extinguishing System for Catering Equipment

Product Name	Designation	Description	LPCB Ref. No.
FIREX FX-KHS Kitchen Hood System	KHSC10	Manual and automatic operation, wet chemical, 1 x 10 litre cylinder.	863f/01
	KHSC20	Manual and automatic operation, wet chemical, 1 x 20 litre cylinder.	863f/02

Note:

Emirates Fire Fighting Equipment Factory L.L.C. (FIREX), FX-KHS (Kitchen Hood System) fixed fire extinguishing system for catering equipment, shall be installed, commissioned and maintained in accordance with the FIREX FX-KHS system manual 'Manual for Fixed Fire Extinguishing System for Catering Equipment' Rev. 1 dated 14/12/2016.

Jactone Products Limited

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Certificate No: 783c to LPS 1223: issue 2.3

Product Name	Designation	Description	LPCB Ref. No.
PAFSS KitchenGuard restaurant fire suppression system (1)	FSGA010	Manual and Automatic operation, wet chemical, 1 x 9 litre cylinder.	783c/01
	FSGA011	Manual and Automatic operation, wet chemical, 2 x 6 litre cylinder.	783c/02
	FSGA012	Manual and Automatic operation, wet chemical, 2 x 9 litre cylinder.	783c/03
PAFSS KitchenGuard restaurant fire suppression system (2)	FSGA8L	Manual and Automatic operation, wet chemical, 1 x 8 litre cylinder.	783c/04
	FSGA12L	Manual and Automatic operation, wet chemical, 1 x 12 litre cylinder.	783c/05

Notes:

(1) Jactone Products Limited, PAFSS KitchenGuard fixed fire suppression system for catering equipment, shall be installed, commissioned and maintained in accordance with System Manual, Automatic Fixed Fire Extinguishing Systems for catering equipment, ISSUE 4

(2) Jactone Products Limited, PAFSS KitchenGuard fixed fire suppression system for catering equipment, shall be installed, commissioned and maintained in accordance with System Manual, Automatic Fixed Fire Extinguishing Systems for catering equipment, ISSUE 5.2 - 01/10/2015

NAFFCO FZ Co

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Certificate No: 463o to LPS 1223

NAFFCO Fusible link and Pneumatic Heat Sensor Tube Restaurant Fire Suppression Systems

Product Name	Description	LPCB Ref. No.
Pre-Engineered Kitchen Fire Suppression System using Fusible Link	Manual and automatic operation, 9.5, 15 or 22.5 litre cylinders, N1003131 and QF-R extinguishants, fusible link operation.	463o/01
Pre-Engineered Kitchen Fire Suppression System using Pneumatic Heat Sensor Tube	Manual and automatic operation, 9.5, 15 or 22.5 litre cylinders, N1003131 and QF-R extinguishants, Pneumatic Heat Sensor Tube operation.	463o/02

Note:
Pre-Engineered Kitchen Fire Suppression System using Fusible Link and Pneumatic Heat Sensor Tube shall be designed, installed and maintained in accordance with Design, Installation, Operation, Maintenance and Refilling Manual for Pre-Engineered Kitchen Fire Suppression System using Fusible Link, Rev 00 Dated 14/12/2016 and Design, Installation, Operation, Maintenance and Refilling Manual for Pre-Engineered Kitchen Fire Suppression System using Heat Sensor Tube, Rev 00 Dated 14/12/2016 respectively.

Nobel Fire Systems

7 Quest Park, Moss Hall Road, Heywood, Lancashire BL9 7JZ, United Kingdom
Tel: +44 (0)1706 625 777 • Fax: +44 (0)1706 625 325
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Certificate No: 642a to LPS 1223: issue 2.2

Product Name	Designation	Description	LPCB Ref. No.
Nobel K series, wet chemical restaurant fire suppression system.	K5	5 litre, Manual and Automatic operation, wet chemical extinguishant	642a/01
	K15	15 litre, Manual and Automatic operation, wet chemical extinguishant	642a/02
	K30	30 litre, Manual and Automatic operation, wet chemical extinguishant	642a/03

Note:
Nobel K series, wet chemical restaurant fire suppression systems shall be installed, maintained and operated in accordance with Nobel Fire Systems, K-Series, Design, Installation and Maintenance Manual V3 Rev. 6.1 June 2014.

Spoon2 International Limited

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Certificate No: 970a to LPS 1223

Brand name "Spoon2"

Product Name	Designation	Description	LPCB Ref. No.
SP2	SP2 - 1	Manual and automatic operation, 14, 28 or 42 litres Spoon2 K2 liquid agent	970a/01
	SP2 - 2	Manual and automatic operation, 56, 70 or 84 litres Spoon2 K2 liquid agent	
	SP2 - 3	Manual and automatic operation, 98, 112 or 126 litres Spoon2 K2 liquid agent	
	SP2 - 4	Manual and automatic operation, 141, 155 or 169 litres Spoon2 K2 liquid agent	
	SP2 - 5	Manual and automatic operation, 183, 197 or 211 litres Spoon2 K2 liquid agent	

SP2 systems shall be designed, installed and maintained in accordance with Spoon2 International limited
Installation manual1004 July 09, Testing and commissioning manual 206 July 09, Recharging manual 304 July 09, Operating and maintenance manual 302 QMF 22 Issue 1 June 09, Service manual 407 July 09.

Certificate No: 970a to LPS 1223

Brand name "Fireguard"

Product Name	Designation	Description	LPCB Ref. No.
K2	K2 - 1	Manual and automatic operation, 14, 28 or 42 litres Spoon2 K2 liquid agent	970a/01

Product Name	Designation	Description	LPCB Ref. No.
	K2 - 2	Manual and automatic operation, 56, 70 or 84 litres Spoon2 K2 liquid agent	
	K2 - 3	Manual and automatic operation, 98, 112 or 126 litres Spoon2 K2 liquid agent	
	K2 - 4	Manual and automatic operation, 141, 155 or 169 litres Spoon2 K2 liquid agent	
	K2 - 5	Manual and automatic operation, 183, 197 or 211 litres Spoon2 K2 liquid agent	

SP2 & K2 systems shall be designed, installed and maintained in accordance with Spoon2 International limited Installation manual1004 July 09, Testing and commissioning manual 206 July 09, Recharging manual 304 July 09, Operating and maintenance manual 302 QMF 22 Issue 1 June 09, Service manual 407 July 09.

Steel Recon Industries Sdn Bhd

No 8 Jalan Subang 7, Taman Perindustrian Subang, 47610 Subang Jaya, Selangor Darul Ehsan, Malaysia
Tel: +603 8023 2323 • Fax: +603 8023 2828
E-mail: ck.wee@sri.com.my • Website: www.sri.com.my

Certificate No: 1239Ab to LPS 1223: issue 2.3

Kitchen Shield F808, wet chemical, restaurant fire suppression system

Product Name	Designation	Description	LPCB Ref. No.
Kitchen Shield F808, wet chemical, restaurant fire suppression system.	F8081000	9 litre, Manual and Automatic operation, wet chemical extinguishant	1239Ab/01
	F8082000	2 X 6 litre, Manual and Automatic operation, wet chemical extinguishant	1239Ab/02
	F8083000	2 X 9 litre, Manual and Automatic operation, wet chemical extinguishant	1239Ab/03

Note:
Steel Recon Industries Sdn Bhd, wet chemical restaurant fire suppression systems shall be installed, maintained and operated in accordance with Steel Recon Industries Sdn Bhd, Installation and Maintenance Handbook version 1.5 dated 6 March 2014 Rev.

Certificate No: 1435a to LPS 1223: issue 2.3

KitchenShield, fire detection and suppression system for commercial kitchens and deep fat fryers

Product Name	Designation	Description	LPCB Ref. No.
KitchenShield, fire detection and suppression system for commercial kitchens and deep fat fryers.	SPS-KS014-CYL-15L	8 litre, Manual and automatic operation, wet chemical extinguishant	1435a/01
	SPS-KS014-CYL-12L	10 litre, Manual and automatic operation, wet chemical extinguishant	1435a/02
	SPS-KS014-CYL-20L	12 or 15 litre, Manual and automatic operation, wet chemical extinguishant	1435a/03
	SPS-KS014-CYL-30L	17, 19 or 22 litre, Manual and automatic operation, wet chemical extinguishant	1435a/04
	SPS-KS014-CYL-35L	24 or 26 litre, Manual and automatic operation, wet chemical extinguishant	1435a/05

Note:
Steel Recon Industries Sdn Bhd, wet chemical restaurant fire suppression systems shall be installed, maintained and operated in accordance with Steel Recon Industries Sdn Bhd, Fire Detection and Suppression System Manual for Commercial Kitchens and Deep Fat Fryer, version 6/date: 25 January 2018.

Telesto Sp. z o.o.

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Certificate No: 1129a to LPS 1223: issue 2.3

"Safety Chef" Restaurant Fire Suppression System

Product Name	Designation	Description	LPCB Ref. No.
SafetyChef	320 cm	Manual and Automatic operation, water mist restaurant suppression system up to 320 cm protected length supplied from single or manifold containers, 12.27, 30 and 50 litre volumes.	1129a/01
	800 cm	Manual and Automatic operation, water mist restaurant suppression system up to 800 cm protected length supplied from single or manifold containers, 12.27, 30 and 50 litre volumes.	1129a/02

Notes:
1."SafetyChef" restaurant water mist suppression systems shall be installed, maintained and operated in accordance with Telesto Sp. z o.o SafetyChef fire extinguishing mist system installation, operation and maintenance manual No. SGMP-K/IMS/5 Rev. 5 dated 22.05.2015, and Telesto SafetyChef system technical specification No. SGMP-K/DTI/6 Rev 6 dated 22.05.2015.
2. For use only with Fusible link, glass bulb and pneumatic detection systems as detailed in Telesto SafetyChef system technical specification No. SGMP-K/DTI/6 Rev 6 dated 22.05.2015.

Watermist Ltd

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Certificate No: 1077a to LPS 1223

Hydramist Fire Suppression System for Catering Equipment

Product Name	Designation	Description	LPCB Ref. No.
Hydramist 15AMPU	Single phase electric pump system	Manual and Automatic operation, potable water used to produce water mist extinguishant	1077a/01
Hydramist 18AMPU	Three phase electric pump system	Manual and Automatic operation, potable water used to produce water mist extinguishant	1077a/02

(A)MPU system shall be designed, installed and maintained in accordance with the Hydramist System Manual (A)MPU-D02 issue 6 (16/02/15) and Hydramist Service Manual (A)MPU-D05. Section 12 of the system manual details the design parameters for the system applications.

The approval of the fire suppression systems listed in this section is based on LPS 1666: Issue 1.0 *Requirements and test procedures for the LPCB approval of direct low pressure (DLP) application fixed fire suppression systems, using heat sensitive pneumatic detection tubing, for the protection of small defined volume unoccupied enclosures.*

This standard specifies the requirements and test procedures for LPCB approval of direct low pressure (DLP) application fixed fire suppression systems, using heat sensitive pneumatic detection tubing, designed for the protection of small unoccupied defined volume enclosures such as electrical switchgear cabinets, server racking and similar installations from small local flaming fire sources.

The objective of the approval is to assess the ability of the system to prevent fire spread between units by evaluating the effectiveness and reliability of a system to detect and extinguish the fire at its source. The system shall also be capable of isolating the power to the protected enclosures and generating a signal for an alarm. The evaluation of a system is essentially a verification of the parameters specified in the system manual.

The selection and specification of fire protection equipment should be based on the completion of a suitable risk assessment and local regulatory requirements.

These systems are intended solely to provide enhanced local fire protection. They are not intended for use as whole room or building fire protection systems.

The requirements and test procedures specified herein are those which generally enable a satisfactory evaluation of a system to be made. However, the LPCB reserves the right to apply special considerations dependant on the scope of application of a particular system if it is not adequately dealt with by this standard.

The scheme provides approval for systems with:

- A single container heat detection tube installation run protecting a maximum single volume of 2m3.
- Up to 4 heat detection tube runs connected to a single container where no single protected volume exceeds a 2m3 volume.
- A maximum heat detection tube length of 10m from the container outlet to the end of any single detection tube run.

The range of materials and products employed within these enclosed volumes is large and whilst this scheme addresses a number of potential fire scenarios it cannot be considered to address all applications in particular where the electrical power supply is not isolated/removed upon activation of the suppression system and the risk of re-ignition remains high.

AIR Fire S.p.A.

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Certificate No: 1408b to LPS 1666: Issue 1.0

ARMANfire HFC-227ea Direct Low Pressure (DLP) Application Fixed Fire Suppression Systems

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
ARF22701TB	1.0 Litre	1 kg HFC-227ea DLP system	P/N: 125101 6mm o/d	Enclosed & open options [4]	Natural airflow only	1408b/01
ARF22703TB	3.8 Litre	2 kg HFC-227ea DLP system	P/N: 125101 6mm o/d	Enclosed & open options [4]	Natural airflow only	1408b/02

Notes:

1) AIR Fire S.p.A., ARMANfire HFC-227ea DLP Systems shall be configured, installed, serviced and maintained in accordance with;

- Design and Calculations Manual ARMANfire - DCMARF2270XTBEN-A - V1.1 / Date: 31/10/2018

- Technical User Manual ARMANfire - TUMARF2270XTBEN-A - V1.1 / Date: 18/09/2018

2) These systems are intended solely to provide enhanced local fire protection. They are not intended for use as whole room or building fire protection systems.

3) The systems use a single method for detection and delivery of the extinguishing agent to the activation point.

- System operation pressure: 18 bar @ 20°C.

- System operation temperature range: -20°C to +60°C.

4) The above systems may have air vents at low and/or high level (refer note 1).

Ceasefire Industries Pvt. Ltd

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Certificate No: 1329c to LPS 1666: Issue 1.0

Ceasefire Industries Ltd HFC-236fa Direct Low Pressure (DLP) Application Fixed Fire Suppression Systems

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
CF-000792	2 kg	2 kg HFC-236fa DLP system	P/N:TI-000010A 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	1329c/01
CF-000793	4 kg	4 kg HFC-236fa DLP system	P/N:TI-000010A 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	1329c/02

Notes:

1) Ceasefire Industries Ltd HFC-236fa DLP Systems shall be configured, installed, serviced and maintained in accordance with Ceasefire Industries Ltd System Manual CQRS/DIR/MAN/01 Version.01 Rev.04 - 16.04.2018.

2) These systems are intended solely to provide enhanced local fire protection. They are not intended for use as whole room or building fire protection systems.

3) The systems use a single method for detection and delivery of the extinguishing agent to the activation point.

- System operation pressure: 15 bar @ 20°C.

- System operation temperature range: -20°C to +60°C.

4) The above systems may have air vents at low and/or high level (refer note 1).

5) The above systems may have forced ventilation (refer note 1).

Certificate No: 1329d to LPS 1666: Issue 1.0

Ceasefire Industries Ltd HFC-227ea Direct Low Pressure (DLP) Application Fixed Fire Suppression Systems

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
CF-000880	2 kg	2 kg HFC-227ea DLP system	P/N:TI-000010A 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	1329d/01
CF-000881	4 kg	4 kg HFC-227ea DLP system	P/N:TI-000010A 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	1329d/02

Notes:

1) Ceasefire Industries Ltd HFC-227ea DLP Systems shall be configured, installed, serviced and maintained in accordance with Ceasefire Industries Ltd System Manual CQRS/DIR/MAN/01 Version.01 Rev.04 - 16.04.2018.

2) These systems are intended solely to provide enhanced local fire protection. They are not intended for use as whole room or building fire protection systems.

3) The systems use a single method for detection and delivery of the extinguishing agent to the activation point.

- System operation pressure: 15 bar @ 20°C.

- System operation temperature range: -20°C to +60°C.

4) The above systems may have air vents at low and/or high level (refer note 1).

5) The above systems may have forced ventilation (refer note 1).

EKC International FZE

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Certificate No: 1400Ba to LPS 1666: Issue 1.0

EKC International FZE 3M™ Novec™ 1230 Direct Low Pressure (DLP) Application Fixed Fire Suppression Systems

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
EKC-920205	2.5 lb	2.5 lb Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Ba/01
	2.5 lb	2.5 lb Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Ba/02
EKC-898001	1 kg	1 kg Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Ba/03
	1 kg	1 kg Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Ba/04
EKC-920505	5 lb	5 lb Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Ba/05
	5 lb	5 lb Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Ba/06
EKC-898002	2 kg	2 kg Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Ba/07
	2 kg	2 kg Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Ba/08
EKC-921005	10 lb	10 lb Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Ba/09
	10 lb	10 lb Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Ba/10
EKC-898003	5 kg	5 kg Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Ba/11
	5 kg	5 kg Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Ba/12

Notes:

1) EKC International FZE 3MTM NovecTM 1230 DLP Systems shall be configured, installed, serviced and maintained in accordance with EKC International FZE System Manual EKC-800035-000 - 11/08/2017.

2) These systems are intended solely to provide enhanced local fire protection. They are not intended for use as whole room or building fire protection systems.

3) The systems use a single method for detection and delivery of the extinguishing agent to the activation point.

- System operation pressure: 195 psig @ 70°F (13.5 bar @ 21.1°C).

- System operation temperature range: -20°C to +60°C.

Certificate No: 1400Bb to LPS 1666: Issue 1.0

EKC International FZE HFC-227ea Direct Low Pressure (DLP) Application Fixed Fire Suppression Systems

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
EKC-920301	3 lb	3 lb HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Bb/01
	3 lb	3 lb HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Bb/02
EKC-898004	1 kg	1 kg HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Bb/03
	1 kg	1 kg HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Bb/04
EKC-920601	6 lb	6 lb HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Bb/05
	6 lb	6 lb HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Bb/06
EKC-898005	2 kg	2 kg HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Bb/07
	2 kg	2 kg HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Bb/08
EKC-921201	12 lb	12 lb HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Bb/09
	12 lb	12 lb HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Bb/10
EKC-898006	5 kg	5 kg HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Bb/11
	5 kg	5 kg HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Bb/12

Notes:

1) EKC International FZE HFC-227ea DLP Systems shall be configured, installed, serviced and maintained in accordance with EKC International FZE System Manual EKC-800023-000 - 11/08/2017.

2) These systems are intended solely to provide enhanced local fire protection. They are not intended for use as whole room or building fire protection systems.

3) The systems use a single method for detection and delivery of the extinguishing agent to the activation point.

- System operation pressure: 150 psig @ 70°F (10.3 bar @ 21.1°C).

- System operation temperature range: -20°C to +60°C.

Firetrace International LLC

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Certificate No: 1400a to LPS 1666: Issue 1.0

Firetrace International LLC 3M™ Novec™ 1230 Direct Low Pressure (DLP) Application Fixed Fire Suppression Systems

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
920205	2.5 lb	2.5 lb Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400a/01
	2.5 lb	2.5 lb Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400a/02
898001	1 kg	1 kg Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400a/03

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
	1 kg	1 kg Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400a/04
920505	5 lb	5 lb Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400a/05
	5 lb	5 lb Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400a/06
898002	2 kg	2 kg Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400a/07
	2 kg	2 kg Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400a/08
921005	10 lb	10 lb Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400a/09
	10 lb	10 lb Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400a/10
898003	5 kg	5 kg Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400a/11
	5 kg	5 kg Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400a/12

Notes:

1) Firetrace International LLC 3M™ Novec™ 1230 DLP Systems shall be configured, installed, serviced and maintained in accordance with Firetrace International LLC System Manual 800035-003 – 12/01/2017.

2) These systems are intended solely to provide enhanced local fire protection. They are not intended for use as whole room or building fire protection systems.

3) The systems use a single method for detection and delivery of the extinguishing agent to the activation point.

- System operation pressure: 195 psig @ 70°F (13.5 bar @ 21.1°C).

- System operation temperature range: -20°C to +60°C.

Certificate No: 1400b to LPS 1666: Issue 1.0

Firetrace International LLC HFC-227ea Direct Low Pressure (DLP) Application Fixed Fire Suppression Systems

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
920301	3 lb	3 lb HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400b/01
	3 lb	3 lb HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400b/02
898004	1 kg	1 kg HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400b/03
	1 kg	1 kg HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400b/04
920601	6 lb	6 lb HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400b/05
	6 lb	6 lb HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400b/06
898005	2 kg	2 kg HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400b/07
	2 kg	2 kg HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400b/08
921201	12 lb	12 lb HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400b/09
	12 lb	12 lb HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400b/10
898006	5 kg	5 kg HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400b/11
	5 kg	5 kg HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400b/12

Notes:

1) Firetrace International LLC HFC-227ea DLP Systems shall be configured, installed, serviced and maintained in accordance with Firetrace International LLC System Manual 800023-006 – 12/01/2017.
2) These systems are intended solely to provide enhanced local fire protection. They are not intended for use as whole room or building fire protection systems.
3) The systems use a single method for detection and delivery of the extinguishing agent to the activation point.

- System operation pressure: 150 psig @ 70°F (10.3 bar @ 21.1°C).
- System operation temperature range: -20°C to +60°C.

Firetrace Limited

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Certificate No: 1430a to LPS 1666: Issue 1.0

Firetrace® Ltd 3M™ Novec™ 1230 Direct Low Pressure (DLP) Application Fixed Fire Suppression Systems

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
2Kg Firetrace®	2 kg	2 kg Novec™ 1230 DLP system	FT0115	Enclosed only	None	1430a/01

Notes:

1) Firetrace Ltd. 3M™ Novec™ 1230 DLP Systems shall be configured, installed, serviced and maintained in accordance with Firetrace Ltd. System Manual FIRETRACE LPCB 1116 - 04/03/2017.
2) These systems are intended solely to provide enhanced local fire protection. They are not intended for use as whole room or building fire protection systems.
3) The systems use a single method for detection and delivery of the extinguishing agent to the activation point.
   - System operation pressure: 12 bar @ 20°C.
   - System operation temperature range: -20°C to +60°C.

Jactone Products Limited

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Certificate No: 783d to LPS 1666: Issue 1.0

Jactone® PAFSS® 3M™ Novec™ 1230 Direct Low Pressure (DLP) Application Fixed Fire Suppression Systems

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
PAFSSND2	2 kg	2 kg Novec™ 1230 DLP system	FSTFV300	Enclosed & open options [4]	Forced & natural [5]	783d/01
PAFSSND25	2.5 kg	2.5 kg Novec™ 1230 DLP system	FSTFV300	Enclosed & open options [4]	Forced & natural [5]	783d/02
PAFSSND3	3 kg	3 kg Novec™ 1230 DLP system	FSTFV300	Enclosed & open options [4]	Forced & natural [5]	783d/03

Notes:

1) Jactone® PAFSS® DLP Systems shall be configured, installed, serviced and maintained in accordance with Jactone® PAFSS® System Manual PAFSSNDLPS1666 - ISSUE 1.0 - 03/01/2017.

2) These systems are intended solely to provide enhanced local fire protection. They are not intended for use as whole room or building fire protection systems.

3) The systems use a single method for detection and delivery of the extinguishing agent to the activation point.

- System operation pressure: 15 bar @ 20°C.

- System operation temperature range: -20°C to +60°C.

4) The above systems may have air vents at low and/or high level (refer note 1).

5) The above systems may have forced ventilation (refer note 1).

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Certificate No: 463p to LPS 1666: Issue 1.0

Naffco FZ Co HFC-236fa Direct Low Pressure (DLP) Application Fixed Fire Suppression Systems

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
NF01DLP236-1	1.2 Litre	0.75 kg HFC-236fa DLP system	P/N: NF07800301 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	463p/01
NF01DLP236-2	2.6 Litre	1.5 kg HFC-236fa DLP system	P/N: NF07800301 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	463p/02
NF01DLP236-3	3.8 Litre	2.5 kg HFC-236fa DLP system	P/N: NF07800301 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	463p/03
NF01DLP236-4	4.8 Litre	3.5 kg HFC-236fa DLP system	P/N: NF07800301 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	463p/04
NF01DLP236-5	2.6 Litre	2 kg HFC-236fa DLP system	P/N: NF07800301 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	463p/05
NF01DLP236-6	3.8 Litre	3 kg HFC-236fa DLP system	P/N: NF07800301 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	463p/06
NF01DLP236-7	4.8 Litre	4 kg HFC-236fa DLP system	P/N: NF07800301 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	463p/07

Notes:

1) Naffco FZ Co HFC-236fa DLP Systems shall be configured, installed, serviced and maintained in accordance with Naffco FZ Co System Manual NF01DLP236M Rev No.00 Issue:B - 18/09/2018.

2) These systems are intended solely to provide enhanced local fire protection. They are not intended for use as whole room or building fire protection systems.

3) The systems use a single method for detection and delivery of the extinguishing agent to the activation point.

- System operation pressure: 12 bar @ 21.1°C.

- System operation temperature range: -20°C to +60°C.

4) The above systems may have air vents at low and/or high level (refer note 1).

5) The above systems may have forced ventilation (refer note 1).

Certificate No: 463q to LPS 1666: Issue 1.0

Naffco FZ Co HFC-227ea Direct Low Pressure (DLP) Application Fixed Fire Suppression Systems

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
NF01DLP227-1	1.2 Litre	0.75 kg HFC-227ea DLP system	P/N: NF07800301 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	463q/01

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
NF01DLP227-2	2.6 Litre	1.5 kg HFC-227ea DLP system	P/N: NF07800301 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	463q/02
NF01DLP227-3	3.8 Litre	2.5 kg HFC-227ea DLP system	P/N: NF07800301 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	463q/03
NF01DLP227-4	4.8 Litre	3.5 kg HFC-227ea DLP system	P/N: NF07800301 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	463q/04
NF01DLP227-5	2.6 Litre	2 kg HFC-227ea DLP system	P/N: NF07800301 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	463q/05
NF01DLP227-6	3.8 Litre	3 kg HFC-227ea DLP system	P/N: NF07800301 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	463q/06
NF01DLP227-7	4.8 Litre	4 kg HFC-227ea DLP system	P/N: NF07800301 6mm o/d	Enclosed & open options [4]	Forced & natural [5]	463q/07

Notes:

1) Naffco FZ Co HFC-227ea DLP Systems shall be configured, installed, serviced and maintained in accordance with Naffco FZ Co System Manual NF01DLP227M Rev No.00 Issue:B - 18/09/2018.

2) These systems are intended solely to provide enhanced local fire protection. They are not intended for use as whole room or building fire protection systems.

3) The systems use a single method for detection and delivery of the extinguishing agent to the activation point.

- System operation pressure: 12 bar @ 21.1°C.

- System operation temperature range: -20°C to +60°C.

4) The above systems may have air vents at low and/or high level (refer note 1).

5) The above systems may have forced ventilation (refer note 1).

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Certificate No: 1400Aa to LPS 1666: Issue 1.0

Regulus Fire Systems 3M™ Novec™ 1230 Direct Low Pressure (DLP) Application Fixed Fire Suppression Systems

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
02-921542	2.5 lb	2.5 lb Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Aa/01
	2.5 lb	2.5 lb Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Aa/02
02-899338	1 kg	1 kg Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Aa/03
	1 kg	1 kg Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Aa/04
02-921842	5 lb	5 lb Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Aa/05
	5 lb	5 lb Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Aa/06
02-899339	2 kg	2 kg Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Aa/07
	2 kg	2 kg Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Aa/08
02-922342	10 lb	10 lb Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Aa/09
	10 lb	10 lb Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Aa/10

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
02-899340	5 kg	5 kg Novec™ 1230 DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Aa/11
	5 kg	5 kg Novec™ 1230 DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Aa/12

Notes:

1) Regulus Fire Systems 3MTM NovecTM 1230 DLP Systems shall be configured, installed, serviced and maintained in accordance with Regulus Fire Systems System Manual 02-801372-000 - 11/08/2017.

2) These systems are intended solely to provide enhanced local fire protection. They are not intended for use as whole room or building fire protection systems.

3) The systems use a single method for detection and delivery of the extinguishing agent to the activation point.

- System operation pressure: 195 psig @ 70°F (13.5 bar @ 21.1°C).

- System operation temperature range: -20°C to +60°C.

Certificate No: 1400Ab to to LPS 1666: Issue 1.0

Regulus Fire Systems HFC-227ea Direct Low Pressure (DLP) Application Fixed Fire Suppression Systems

Product Name	Container Size	Description	Detector Tube	Ventilation (Enclosed or Open Vents)	Air Flow (Forced / Natural)	LPCB Ref. No.
02-921638	3 lb	3 lb HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Ab/01
	3 lb	3 lb HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Ab/02
02-899341	1 kg	1 kg HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Ab/03
	1 kg	1 kg HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Ab/04
02-921938	6 lb	6 lb HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Ab/05
	6 lb	6 lb HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Ab/06
02-899342	2 kg	2 kg HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Ab/07
	2 kg	2 kg HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Ab/08
02-922538	12 lb	12 lb HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Ab/09
	12 lb	12 lb HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Ab/10
02-899343	5 kg	5 kg HFC-227ea DLP system	P/N: 200005 6mm o/d	Enclosed only	None	1400Ab/11
	5 kg	5 kg HFC-227ea DLP system	P/N: 200007 8mm o/d	Enclosed only	None	1400Ab/12

Notes:

1) Regulus Fire Systems HFC-227ea DLP Systems shall be configured, installed, serviced and maintained in accordance with Regulus Fire Systems System Manual 02-801360-000 - 11/08/2017.

2) These systems are intended solely to provide enhanced local fire protection. They are not intended for use as whole room or building fire protection systems.

3) The systems use a single method for detection and delivery of the extinguishing agent to the activation point.

- System operation pressure: 150 psig @ 70°F (10.3 bar @ 21.1°C).

- System operation temperature range: -20°C to +60°C.

These generators comprise a non-pressurized container filled with a dry solid fire extinguishing compound which, when activated, discharges an aerosol to extinguish the fire. They are designed to be fixed in place for "total flooding" applications, where the whole protected risk area is filled to achieve a specific design application density.

Subject to satisfactory performance and function tests, including full scale fire tests, these generators can be designated for use against the following classes:

- Class A (solid surface burning fires)
- Class B (liquid pool fires)

The selection and specification of fire protection equipment should be based on the completion of a suitable risk assessment and local regulatory requirements.

Generators are typically activated by appropriate fire detectors with the aim of ensuring that they operate early in the fire development phase. Guidance on the use, limitations, safety considerations and precautions, venting and structural strength of compartments, detection, actuation and control arrangements as well as commissioning, acceptance and maintenance procedures can be found in prEN 15276 parts 1 and 2.

Condensed aerosol generators are approved on the basis that they will be installed and maintained in accordance with prEN 15276 and the manufacturer's instructions.

FirePro Systems Limited

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Certificate No: 1417a to SD0228 and Selected Clauses of prEN15276-1 and prEN15276-2 (Sept 2017)

Condensed Aerosol Generator

Product Name	Description	LPCB Ref. No.
FP-1200 (note 1)	Condensed aerosol generator (electrical activation only) and mounting bracket	1417a/01
FP-2000 (note 1)	Condensed aerosol generator (electrical activation only) and mounting bracket	1417a/02
FP-3000 (note 1)	Condensed aerosol generator (electrical activation only) and mounting bracket	1417a/03
FP-4200 (note 2)	Condensed aerosol generator (electrical activation only) and mounting bracket	1417a/04
FP-5700 (note 1)	Condensed aerosol generator (electrical activation only) and mounting bracket	1417a/05

General Notes:
This approval covers the components listed when used in accordance with the FirePro "Instruction, information and user manual" version 7.0, dated 18th October 2017.

This approval does not cover system design, system performance or installation.

The Application Densities for these components, as defined in prEN15276-1 Clause 5.2, for the following applications are:
- Class A (surface burning fire only) - 97.6 g/m3
- Class B - 68.6 g/m3

The component approval does not cover applications for:
- Potentially Explosive Atmospheres, or
- Grouped Power or Data Cables.

Table Notes:
(1) The Product is available in 4 variants:
FP-xxxx - Mild Steel Body
FP-xxxxS - Stainless Steel Body
FP-xxxxT - Mild Steel Body; Thermal Activation Model Variant in Electrical Activation Mode Only
FP-xxxxTS - T Variant with Stainless Steel Body

(2) The Product is available in 2 variants:
FP-xxxxT - Mild Steel Body, Thermal Activation Model Variant in Electrical Activation Mode Only
FP-xxxxTS - T Variant with Stainless Steel Body