Date : 28 October, 2025

CERTIFICATE OF COMPLIANCE

This certificate of compliance validates the following			
TEST REPORT NUMBER 'Assessment Reports' are not acceptable	PR459719 PR464858 PR467851	**CERTIFICATE NUMBER**	PR459719 FM23FPUS0161 FM24US0003X
DATE OF ISSUE	09 September, 2021	**DATE OF ISSUE**	09 September, 2021
DATE OF EXPIRY	NONE	**DATE OF EXPIRY**	NONE
Manufacturer Details			
NAME OF FACTORY/ MANUFACTURER	Crowcon Detection Instruments Ltd	**NAME OF THE BRAND**	Crowcon
FACTORY ADDRESS / REGION (STREET / TOWN / CITY / COUNTRY)	172 Brook Drive, Milton Park Abingdon, Oxfordshire United Kingdom OX14 4SD	**MODEL / NO**	FGard IR3 FGard H2 FGard UV-IR
WEBSITE	www.crowcon.com	**LOGO ON THE PRODUCT**	crowcon DETECTING GAS. SAVING LIVES.
TEL	+44(0)1235 557700	**EMAIL**	info@crowcon.com

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Product Details From Test Report		Reference Test Report page number
DESCRIPTION OF THE PRODUCT (TECHNICAL DETAILS FROM TEST REPORT, SUCH AS ACTUAL FIRE RATINGS/DIMENSIONS/ THICKNESS/ SENSITIVITY ETC)	FGard IR3 Flame Detector FGard H2 Flame Detector FGard UV-IR Detector	1
TEST STANDARD (SUCH AS ASTM/BS EN/ DN ETC)	EN 54-10 +A1 FM 3260 ANSI / ISA 60079-0 ANSI / ISA 60079-1 ANSI/NEMA 250 ANSI/IEC 60529 IEC 60079-0 IEC 60079-1 IEC 60529 EN 60079-0 +A11 EN 60079-1 EN 60529 + A1	1
TEST DESCRIPTION	All testing and analysis considered appropriate was conducted and verified to be in compliance with the Standards listing in the Test Standards section. All data is on file at FM Approvals along with other documentation and correspondence applicable to this program.	1
SPECIFICATION OF TEST SPECIMEN	The samples were considered to be representative of the product line and were examined, tested, and compared to the manufacturer's drawings.	1
TEST RESULT (SUCH AS PASSED CRITERIA___/ COMPLIED TO___/ DURATION___/ OBSERVATION___/ETC)	Pass	1
PRODUCT APPLICATION GUIDELINE (END USE) (CLEARLY STATE THE END USE WITH SPECIFIC APPLICATION, SUCH AS EXACT FIRE RATING/TO BE INSTALLED IN___/TO BE INSTALLED AT____/TO BE CONNECTED WITH____/TO BE INSTALLED WITH___ ETC ALONG WITH ANY WARNINGS SUCH AS NOT TO BE USED IN___/NOT TO BE INSTALLED AT___/ NOT TO BE INSTALLED WITH___ETC.	Installations shall comply with the manufacturer's published installation instructions.	2

Laboratory and Certification body details

NAME OF CERTIFICATION BODY	FM Approvals	**NAME OF TEST FACILITY**	FM Approvals
CERTIFICATION BODY ADDRESS / REGION (STREET / TOWN / CITY / COUNTRY)	One Technology Way Norwood, MA 02062 USA	**TEST FACILITY ADDRESS /REGION** (STREET / TOWN / CITY / COUNTRY)	One Technology Way Norwood, MA 02062 USA
WEBSITE	www.fmapprovals.com	**WEBSITE**	www.fmapprovals.com
TEL	+1 (1) 781 762 4300	**TEL**	+1 (1) 781 762 4300
EMAIL	information@fmapprovals.com	**EMAIL**	information@fmapprovals.com

FM APPROVALS IS ACCREDITED BY	PER	VALIDITY	REFERENCE NUMBER
The Standards Council of Canada (SCC) www.scc.ca	ISO/IEC 17065	01 December 2028	FM Approvals LLC One Technology Way Norwood, MA 02062 USA
The Standards Council of Canada (SCC) www.scc.ca	ISO/IEC 17025	04 April 2029	No. 574 (Norwood, MA and West Glocester, RI)
International Accreditation Service (IAS) www.iasonline.org	ISO/IEC 17025	01 July 2026	No. TL 221 (Norwood, MA and West Glocester, RI)
Occupational Safety and Health Administration (OSHA) www.osha.gov	Guide 25/65	05 March 2026	OSHA-2007-041 (Norwood, MA and West Glocester, RI)
The Irish National Accreditation Board (INAB) www.inab.ie	ISO/IEC 17065	15 November 2028	No. 2809 Notified Body Identifier 6024 (Dublin, IE)
United Kingdom Accreditation Service (UKAS) www.ukas.com	ISO/IEC 17065	25 January 2027	No. 0259 Approval Body Identifier 1725 (Windsor, UK)
IECEx Conformity Assessment System www.iecex.com	ISO/IEC 17065	01 May 2029	FM Approvals LLC One Technology Way Norwood, MA 02062 USA
CERTIFICATION MARK	FM APPROVED		

(ENDORSEMENT) TO BE SIGNED BY MANUFACTURER NAME

NAME OF MANUFACTURER'S SIGNATORY	Richard King	**SIGNATURE**	
EMAIL / TEL	Richard.King@crowcon.com	**FACTORY OFFICIAL SEAL**	

NOTES: I Undertake that all data and information provided are genuine and accurate

(ENDORSEMENT) TO BE SIGNED BY CERTIFICATION BODY

NAME OF CERTIFICATION BODY SIGNATORY	James Marquedant	**SIGNATURE**	
EMAIL / TEL	james.marquedant@fmapprovals.com	**CERTIFICATION BODY OFFICIAL SEAL**	

NOTES: I Undertake that all data and information provided are genuine and accurate

ATTACHMENTS: **COPY OF 'CERTIFICATE OF COMPLIANCE' ISSUED BY CERTIFICATION BODY (OLD OR NEW)**

Certificate of Compliance

FIRE PROTECTION EQUIPMENT

This certificate is issued for the following equipment:

Flame Detector model FGard IR3 Flame Detector

Approval Guide Listing: Category: Electrical Signaling Alarm Signal Initiating Devices Fire Detection, Flame-Actuated Hazardous Location Equipment - United States Detectors Flame

Crowcon Detection Instruments Ltd
172 Brook Drive, Milton Park
Abingdon, Oxfordshire
United Kingdom OX14 4SD

This certifies that the equipment described has been found to comply with the applicable requirements, as stated in the Approval Report(s), of the following FM Approval Standards and other documents:

Approval Standards		*Other Standards*	
Class Number	*Date*	*Organization, Designation*	*Date*
3260	Oct 2021	ANSI/FM 3260	2004 [R2014}
3600	2018	EN54-10	2002 + A1:2005
3615	2018	ANSI/NEMA 250	2014
		ANSI/UL-60079-0	2019
		ANSI/UL-60079-1	2015
		ANSI/IEC 60529, CSA-C22.2 No. 60529	2004, 2005

Original Approval Job Identification: PR459719 Approval Granted: 9 September 2021

Related Report: none

Subsequent Revisions: RR231255

To verify the availability of the Approved product, please refer to www.approvalguide.com

J.E. Marquedant
VP, Manager - Electrical Systems
FM Approvals
1151 Boston-Providence Turnpike,
Norwood MA, 02062 USA

1 March 2022
Date

Member of the FM Global Group

Certificate of Compliance

☒Electrical Signaling ☒Alarm Signal Initiating Devices ☒Fire Detection, Flame-Actuated

FGard IR3 Flame Detector

The FGard IR3 Flame Detector is Approved for use:
Operating Voltage: 24Vdc [18 to 32Vdc]
Current draw: 0.42A [10W], with heater - 0.63A [15W]
Dry contact Form C relay outputs: 30Vdc, 2A
Operating temperature and humidity range is -60°C to +85°C (-76°F to +185°F), 93%
4-20mA Outputs: 0mA - Power/Detector Fault, 2mA - Optical Fault, 4mA – Healthy, 18mA – Alarm, 21mA - Over-range
Compatible Approved control panel for alarm and trouble reporting.
Sensitivity settings: High, Standard, Low
Firmware version 1.13.
Fuels: see FGard IR3 Installation, Operating and Maintenance Instructions, FD-AC-07
Detection time: 5 sec.
Detection Distance: see FGard IR3 Installation, Operating and Maintenance Instructions, FD-AC-07
Field of view [vertical] 90.0º
Field of view [horizontal] 90º
False alarm stimuli: see FGard IR3 Installation, Operating and Maintenance Instructions, FD-AC-07

Suitable for US as explosionproof for use in Class I, Division 1, Groups B, C, and D T4 hazardous (classified) locations, indoors and outdoors Type 4X / IP66. Operating temperature range is -50°C to +85°C (-58°F to +185°F).

Suitable for US as flameproof for use in Class I, Zone 1, AEx db IIC T4 Gb hazardous (classified) locations, indoors and outdoors Type 4X / IP66. Operating temperature range is -50°C to +85°C (-58°F to +185°F).

Specific Condition(s) of Use:
The FGard IR3 Flame Detector is to be installed in places where there is a low risk of mechanical damage.

☒Hazardous Location Equipment - United States ☒Detectors ☒Flame

FGard IR3 Flame Detector

Class I, Division 1, Groups B, C, and D T4 Ta = -50°C to +85°C (-58°F to +185°F) Type 4X/IP66
Zone 1, AEx db IIC Gb T4 Ta = -50°C to +85°C (-58°F to +185°F) Type 4X/IP66

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Member of the FM Global Group

CERTIFICATE OF CONFORMITY

1. **FIRE PROTECTION EQUIPMENT**

2. **Certificate No:** **FM23FPUS0161**

3. **Equipment:**
   (Type Reference and Name) **FGard H2 Flame Detector**

4. **Name of Listing Company:** **Crowcon Detection Instruments Ltd**

5. **Address of Listing Company:** **172 Brook Drive,**
   Milton Park,
   Abingdon,
   Oxfordshire, OX14 4SD, United Kingdom

6. The examination and test results are recorded in confidential report number:

   PR464858 dated 6 June 2024

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

   FM 3260:2021, FM 3600:2022, FM 3615:2022, NEMA 250:2014, ANSI/UL 60079-0:2013, ANSI/UL 60079-1:2015, ANSI/IEC 60529:2004

8. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

9. Approval Guide Listing Category:

   Alarm Signal Initiating Devices, Fire Detection, Flame-Actuated

FM APPROVALS LLC ORGANIZED 2001 RHODE ISLAND

Certificate issued by:

J.E. Marquedant
VP, Manager - Electrical Systems

6 June 2024
Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC. One Technology Way, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com

10. **Description of Equipment:**

FGard H2 Flame Detector is Approved for use:
Operating Voltage: 24Vdc [18 to 32Vdc]
Current draw: 0.42A [10W], with heater - 0.63A [15W]
Dry contact Form C relay outputs: 30Vdc, 2A
Operating temperature and humidity range is -60°C to +85°C (-76°F to +185°F), 93%
4-20mA Outputs: 0mA - Power/Detector Fault, 1 mA – Low Supply Voltage Fault, 1.5mA - Optical Fault, 4mA – Healthy, 18mA – Alarm, 21mA - Over-range
Compatible Approved control panel for alarm and trouble reporting.
Sensitivity settings: Medium, High
FS303 Flame Simulator: not FM Approvals examined
Firmware version 1.1x
Fuels: see below table
Detection time: 4 -30 sec.
Detection Distance: see below table
Field of view [vertical] 90.0º
Field of view [horizontal] 90º
False alarm stimuli: see FGard H2 Safety and Technical Manual, PM-FD-H2

Fire	Fuel Size	Distance
Hydrogen Fire	0.9m (36inch) plume height	40m (131ft)
Methylated Spirits Fire	0.3m x 0.3m (1ft) pan	20m (65ft)
Methanol Fire	0.3m x 0.3m (1ft) pan	20m (65ft)
n-Heptane Fire	0.3m x 0.3m (1ft) pan	12m (40ft)

Suitable for US as explosionproof for use in Class I, Division 1, Groups B, C, and D T4 hazardous (classified) locations, indoors and outdoors Type 6P / IP67. Operating temperature range is -50°C to +85°C (-58°F to +185°F).

Suitable for US as flameproof for use in Class I, Zone 1, AEx db IIC T4 Gb hazardous (classified) locations, indoors and outdoors Type 6P / IP67. Operating temperature range is -50°C to +85°C (-58°F to +185°F).

Specific Conditions of Use
The equipment is to be installed in places where there is a low risk of mechanical damage.

11. **Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

12. **Schedule Drawings**

    A copy of the technical documentation has been kept by FM Approvals.

13. **Certificate History**

    Details of the supplements to this certificate are described below:

Date	Description
6 June 2024	Original Issue.

FM APPROVALS LLC ORGANIZED 2001 RHODE ISLAND

CERTIFICATE OF CONFORMITY

FM Approvals
Member of the FM Global Group

1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** **FM24US0003X**
3. **Equipment:**
   (Type Reference and Name) **FGard UV/IR Flame Detector**
4. **Name of Listing Company:** **Crowcon Detection Instruments Ltd**
5. **Address of Listing Company:** **172 Brook Drive,**
   Milton Park,
   Abingdon,
   Oxfordshire, OX14 4SD, United Kingdom
6. The examination and test results are recorded in confidential report number:

   PR467851 dated 15 May 2024

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

   FM 3260:2021, FM 3600:2022, FM 3615:2022, NEMA 250:2018, ANSI/UL 60079-0:2013, ANSI/UL 60079-1:2015, ANSI/IEC 60529:2020

8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
10. Equipment Ratings:

    Explosionproof for use in Class I, Division 1, Groups B, C and D T4 hazardous (classified) locations, indoors and outdoors (Type 6P, IP67).
    Flameproof for use in Class I, Zone 1, AEx db IIC T4 Gb hazardous (classified) locations, indoors and outdoors (Type 6P, IP67).
    Operating temperature range is -50°C to +85°C (-58°F to +185°F).

Certificate issued by:

FM APPROVALS LLC ORGANIZED 2001 RHODE ISLAND

J.E. Marquedant
VP, Manager - Electrical Systems

15 May 2024
Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC. One Technology Way, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com

SCC Accredited CB-P/S OCPS Accredité CCN

11. The marking of the equipment shall include:

    Class I DIV 1 GROUPS B,C,D T4
    Class I Zone 1 AEx db IIC T4 Gb
    Ambient: -50°C to +85°C
    TYPE 6P, IP67

12. **Description of Equipment:**

    FGard UV/IR Flame Detector

    The FGard UV/IR Flame Detector is Approved for use:
    Operating Voltage: 24Vdc [18 to 32Vdc]
    Current draw: 0.14 A [3W], with heater 0.27A [10W]
    Dry contact Form C relay outputs: 30Vdc, 2A
    Operating temperature and humidity range is -60°C to +85°C (-76°F to +185°F), 93%
    4-20mA Outputs: 0mA - Power/Detector Fault, 2mA
    - Optical Fault, 4mA – Healthy, 18mA – Alarm, 21mA - Over-range
    Compatible Approved control panel for alarm and trouble reporting.
    Sensitivity settings: High, Standard, Low
    FS301 Flame Simulator: not FM
    Firmware version 22.12
    Fuels: see below table Detection time: see Safety and Technical Manual, FD-AC-13
    Detection Distance: see below table
    Field of view [vertical] 90° - see Safety and Technical Manual, FD-AC-13
    Field of view [horizontal] is 100° max
    False alarm stimuli: see FGard UV/IR Safety and Technical Manual, FD-AC-13

    Flame Response

Fuel Type	Pan size	Low Sensitivity	Standard Sensitivity	High Sensitivity
N-Heptane	0.3m x 0.3m Pan	17.4m	25m	39m
Methylated Spirits	0.3m x 0.3m Pan	12.5m	17.5m	30m
Methane	0.9m Plume	17.5m	25m	37m

    Suitable for US as explosionproof for use in Class I, Division 1, Groups B, C and D T4 hazardous (classified) locations, indoors and outdoors (Type 6P / IP67). Operating temperature range is -50°C to +85°C (-58°F to +185°F).

    Suitable for US as flameproof for use in Class I, Zone 1, AEx db IIC T4 Gb hazardous (classified) locations, indoors and outdoors (Type 6P / IP67). Operating temperature range is -50°C to +85°C (-58°F to +185°F).

13. **Specific Conditions of Use:**

    1. The equipment is to be installed in places where there is a low risk of mechanical damage.
    2. Flamepath joints are not intended to be repaired.

14. **Test and Assessment Procedure and Conditions:**

    This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

15. **Schedule Drawings**

    A copy of the technical documentation has been kept by FM Approvals.

16. **Certificate History**

    Details of the supplements to this certificate are described below:

Date	Description
15 May 2024	Original Issue.

FM APPROVALS LLC ORGANIZED 2001 RHODE ISLAND