Date : 2018-09-06

CERTIFICATE OF COMPLIANCE

This Certificate of Compliance Validates the Following			
TEST REPORT NUMBER 'Assessment Reports' are not acceptable	S3417-20180615	**CERTIFICATE NUMBER**	UROX.S3417
DATE OF ISSUE	2018-06-15	**DATE OF ISSUE**	2018-08-23
DATE OF EXPIRY	Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service.	**DATE OF EXPIRY**	Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service.
Manufacturer Details			
NAME OF FACTORY / MANUFACTURER	FFE LTD	**NAME OF THE BRAND**	Fireray
FACTORY ADDRESS / REGION (STREET / TOWN / CITY / COUNTRY)	9 HUNTING GATE WILBURY WAY HITCHIN SG4 OTJ UNITED KINGDOM	**MODEL / NO**	Fireray One
WEBSITE	www.ffeuk.com	**LOGO ON THE PRODUCT**	fireray One
TEL	+44 (0)1462 444 740	**EMAIL**	sales@ffeuk.com

Product Details From Test Report		Reference Test Report page NO
DESCRIPTION OF THE PRODUCT (TECHNICAL DETAILS FROM TEST REPORT, SUCH AS ACTUAL FIRE RATINGS/DIMENSIONS/THICKNESS/ SENSITIVITY ETC)	Smoke-automatic Fire Detectors covers detecting combinations designed to detect smoke particles. Smoke detectors may or may not be designed to be connected to fire alarm system control units. Reflective Beam Detector Model: Fireray One.	S3417-20180615
TEST STANDARD (SUCH AS ASTM/BS EN/ DN ETC)	ANSI/UL 268, "Smoke Detectors for Fire Alarm Systems." 1 Scope 1.1 This Standard sets forth requirements for smoke detectors and accessories, including mechanical guards to be employed in ordinary indoor locations in accordance with the following: In the United States: a) National Fire Alarm and Signaling Code, NFPA 72. In Canada: b) Standard for the Installation of Fire Alarm Systems, CAN/ULC-S524; c) National Building Code of Canada; and d) National Fire Code of Canada. 1.2 A smoke detector (e.g. ionization-type, photoelectric-type, smoke detector with supplementary heat detection type, combination smoke type, multi-criteria type) as covered by this Standard consists of an assembly of electrical components arranged to detect one or more products of combustion. At a minimum the detector shall contain a smoke (particulate) sensor. The products of combustion may consist of visible as well as invisible smoke particles, gases, heat, radiant energy, and water vapor.. The detector includes provision for the connection to a source of power, signaling, and optional remote control circuits. Additional functionality, such as a heat	S3417-20180615

	detector, heat sensor, or audible signaling appliance/device, is permitted to be incorporated as part of the smoke detector assembly. 1.3 This standard covers the following types of detectors: a) Detectors intended for open area protection and for connection to a compatible power supply or control unit for operation as part of a fire alarm system. b) Detectors intended solely for control of releasing devices such as electromagnetic door holders, fire dampers or smoke dampers. c) Detectors intended for both applications described in (a) and (b) above, and d) In Canada, duct detectors. 1.4 This standard does not cover the following: In the United States (a – g): a) Control units to which the detectors are intended to be connected that are covered by the Standard for Control Units for Fire-Protective Signaling Systems, UL 864; b) Self-contained single and multiple station smoke alarms, not intended for connection to a system control unit, that are covered by the Standard for Single and Multiple Station Smoke Alarms, UL 217; c) A heat detector incorporated as a part of a smoke detector assembly, and covered by the Standard for Heat Detectors for Fire Protective Signaling Systems, UL 521; except for the requirements of the Fire Test (Heat Detector) and/or when part of a multi-criteria smoke detector; d) A gas and vapor detector or sensor incorporated as a part of a smoke detector assembly, and covered by the Standard for Gas and Vapor Detectors and Sensors, UL 2075, except when part of a multi-criteria smoke detector; e) Fire tests for smoke detectors integral with combination door closers and holders that are covered by	

	the Standard for Door Closers-Holders, With or Without Integral Smoke Detectors, UL 228; f) Commercial-residential detectors not intended for connection to a system control unit that are covered by the Standard for Smoke Detector Monitors and Accessories for Individual Living Units of Multifamily Residences and Hotel/Motel Rooms, UL 1730; g) Detectors for monitoring the smoke density within flues or stacks; In Canada (h – m): h) Control units that are covered by the Standard for Control Units for Fire Alarm Systems, ULC-S527; i) Self-contained single and multiple station smoke alarms that are covered by the Standard For Smoke Alarms, CAN/ULC-S531; j) A heat detector incorporated as a part of a smoke detector assembly, and covered by the Standard For Heat Actuated Fire Detectors for Fire Alarm Systems, CAN/ULC-S530 and/or when part of a multi-criteria smoke detector; k) Fire tests for smoke detectors integral with combination door closers and holders that are covered by the Standard for Door Closers and Holders, ULC/ORD-C228; l) Detectors for monitoring the smoke density within flues or stacks; and m) A residential CO alarming device incorporated as a part of a smoke detector assembly, and covered by the CAN/CSA 6.19, Standards for Residential CO Alarming Devices, except when part of a multi-criteria smoke detector. 1.5 These requirements also cover all remote accessories that are intended to be connected to a smoke detector.	
TEST DESCRIPTION	The following tests from the referenced standard, as applicable to the products submitted, were conducted: Standard | Test | Standard Section	S3417-20180615

UL 268	General	28
UL 268	Normal operation test	29
UL 268	Electrical supervision test	30
UL 268	Sensitivity test	31
UL 268	Automatic drift compensation for smoke sensing	32
UL 268	Directionality Test	33
UL 268	Velocity-sensitivity Test	34
UL 268	Smoke Entry (Stack Effect) Test	35
UL 268	Lamp Interchangeability Test (Photoelectric)	36
UL 268	Reduction in Light Output Test	37
UL 268	Stability Test	38
UL 268	Stability tests – multi-criteria detectors incorporating gas sensor(s)	39
UL 268	Test for effect of air velocity .	40
UL 268	Fire tests	41
UL 268	Smoldering smoke test	42
UL 268	Smoldering smoke test – maximum obscuration without alarm	43
UL 268	Selectivity Test – Multi-criteria Detectors Incorporating Gas Sensor(s)	44
UL 268	Circuit Measurement Test	45
UL 268	Overvoltage and Undervoltage Tests Overvoltage and Undervoltage Tests	46
UL 268	Temperature Test	47

	UL 268	Vibration Test	48
	UL 268	Replacement Test, Head and Covers	49
	UL 268	Jarring test	50
	UL 268	Variable Ambient Temperature Tests	51
	UL 268	Humidity Test	52
	UL 268	Corrosion Tests	53
	UL 268	Alternate Corrosion Test for Detectors with a Specified Life Not Exceeding 10 Years (21 day)	54
	UL 268	Transient Tests	55
	UL 268	Static Discharge Test	56
	UL 268	Dust SURVIVABILITY Test	57
	UL 268	Overload Tests	58
	UL 268	Endurance Test	59
	UL 268	Audible signaling appliance	60
	UL 268	Fire Test – Smoke Detector with supplementary heat detection	61
	UL 268	Abnormal Operation Test	62
	UL 268	Locked Rotor Test	63
	UL 268	Dielectric Voltage-Withstand Test	64
	UL 268	Polarity Reversal Test	65
	UL 268	Tests on Polymeric Materials	66
	UL 268	Strain Relief Test	67
	UL 268	Non-compulsory Fire and Smoldering Smoke Tests	68
	UL 268	Survivability Test	69
	UL 268	Audibility test	70
	UL 268	Field Service Tests	71

	UL 268 — Battery Tests — 72 UL 268 — Conformal Coatings on Printed Wiring Boards — 73 UL 268 — Air duct detectors — 74 The results of this investigation including evaluation and testing indicate that the products are complied with applicable requirements of the Standard ANSI/UL 268- "Standard for Smoke Detectors for Fire Alarm Systems" and therefore, such products are judged eligible to bear UL's Mark.	
SPECIFICATION OF TEST SPECIMEN	The samples used for testing and evaluation were considered representative of the submitted products.	S3417-20180615
TEST RESULT (SUCH AS PASSED CRITERIA___/ COMPLIED TO___/ DURATION___/OBSERVATION___/ETC)	Pass – Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service	S3417-20180615
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.	This category covers detecting combinations designed to detect smoke particles. Smoke detectors are connected to fire alarm system control units (see APPLICATIONS below). A heat detector and/or an audible-signaling appliance may be provided integral with the detector. The primary function of duct detectors is to shut down the blowers and/or dampers of air conditioning and ventilating systems in an attempt to prevent a possible panic and smoke damage from distribution of smoke. Duct detectors are not intended as a substitute for open-area protection. The level of toxicity produced by the combustibles at which smoke detectors actuate has not been investigated. This category also covers detectors and accessories that are capable of receiving in-service firmware revisions. The approved firmware release levels are identified in the individual certifications. The products provide a means for identifying the current firmware version of the unit. DETECTOR TYPES Photoelectric (P) — Designed to detect an abnormal density of smoke particles, either by obscuration of a	S3417-20180615

	projected light path or reflection of light from the smoke particles onto a light-sensitive element. Ionization (I) — An ionization smoke detector has a small amount of radioactive material that ionizes the air in the sensing chamber, thus rendering it conductive and permitting a current flow through the air between two charged electrodes. This gives the sensing chamber an effective electrical conductance. When smoke particles enter the ionization area, they decrease the conductance of the air by attaching themselves to the ions, causing a reduction in mobility. When the conductance is less than a predetermined level, the detector circuit responds. Combination Photoelectric/Ionization (P/I) — Employs both principles of detection in one unit. Projected Beam (PB) — A light beam is projected across the space of area to be protected. Air Sampling (AS) — Consists of air-sampling ports at the ends of piping or tubing extending from the detector unit to the areas to be protected. A pump draws air from the protected area through the ports and tubing to the detector where the air is analyzed for fire products. APPLICATIONS Open-area Protection (OAP) — Requires detector connection to a compatible system control unit for operation. Releasing Service (RS) — Intended for detector connection only to releasing devices, such as electromagnetic door holders, fire dampers, etc. Open-area Protection with Releasing Service (OAP/RS) — Incorporates supplementary switching contacts for additional connection to releasing devices. Duct Detector [D (ST)] — Intended for installation on the side of a duct. Employs sampling tubes that extend into the duct. Duct Detector [D (I)] — For installation inside a duct. COMPATIBILITY WITH CONTROL UNITS	

	Smoke detectors for open-area protection are intended to be connected to the initiating device circuit of a fire alarm system control unit. Multiple-wire detectors, employing power-supply terminals or leads that do not obtain power from the initiating-device circuit of a system control unit, are compatible with the initiating device circuits of any certified system control unit if (1) failure of the power to the detector is supervised at the control unit, and (2) the smoke detector is powered from a "Regulated" power-supply output, or a "Special Application" power-supply output for which the voltage outputs have been investigated. Compatible models for "Special Application" outputs are indicated on the installation wiring diagram of the control unit and/or detectors. Two-wire detectors, whose power-supply terminals or leads are the same as the signaling terminals, and obtain power from the initiating-device circuit of a system control unit, are investigated for compatibility either by test or a review of the circuit parameters of both the detector and control unit. Certification is restricted only to those control units with which such an investigation was made. Interconnection limitations and compatible models are indicated on the installation wiring diagram of control unit and/or detectors. INSTALLATION Refer to ANSI/NFPA 72, "National Fire Alarm and Signaling Code," and ANSI/NFPA 90A, "Installation of Air-Conditioning and Ventilating Systems," for installation, maintenance, and testing guidelines. Spacings — Although there are no assigned spacings to these detectors, test fires, using the maximum amount of combustible for the risk involved, may be employed. See ANSI/NFPA 72 for additional guidelines. Environmental Considerations — Open-area detectors are intended for indoor use only where normal ceiling temperatures (max 37.8°C (100°F)) prevail. Care should be used that detectors are not installed in areas where conditions may cause unwanted (false) alarms.	

	Duct detectors are intended to be installed in ducts of heating, ventilating, and air conditioning systems where temperatures at the detector do not exceed 37.8°C (100°F). Ionization detectors should not be used in an environment of high-level radiation unless tests in the actual environment have shown that the radiation will not interfere with operation of the detectors. Effect of Velocity — The velocities indicated in the individual certifications are the maximum and minimum to which the detector has been subjected in performance tests without indication of a false alarm or abnormal shift in sensitivity. The performance of photoelectric-type detectors is not affected by velocity. Velocity limits for duct detectors are based on response to fire tests in ANSI/UL 268A, "Smoke Detectors for Duct Application." Stability Test — In view of the innumerable environmental conditions that exist in the field, it is recommended that the stability of detectors be monitored prior to connection to a fire alarm system for at least three months or more to screen out locations of detectors where unwanted (false) alarms may occur. Relocation of the detectors, use of a detector with a different principle of operation, or a change in the sensitivity setting where permitted in the marking of the detector may be required. Authorities Having Jurisdiction should be consulted before installation.	

Laboratory and Certification Body Details			
NAME OF CERTIFICATION BODY	UL LLC	**NAME OF TEST FACILITY**	UL LLC
CERTIFICATION BODY ADDRESS / REGION (STREET / TOWN / CITY / COUNTRY)	333 Pfingsten Road Northbrook, IL 60062 USA	**TEST FACILITY ADDRESS / REGION** (STREET / TOWN / CITY / COUNTRY)	333 Pfingsten Road Northbrook, IL 60062 USA
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ACCREDITED BY (NAME OF ACCREDITATION BODY WHICH ISSUED ACCREDITATION TO THE CERTIFICATION BODY, ALONG WITH WEBSITE)	American National Standards Institute (ANSI) as a product certification body ansi.org	**ACCREDITED BY** (NAME OF ACCREDITATION BODY WHICH ISSUED ACCREDITATION TO THE LABORATORY, ALONG WITH WEBSITE)	International Accreditation Services (IAS) iasonline.org
AS PER (STANDARD TO WHICH THE CERTIFICATION BODY IS ACCREDITED TO)	ISO/IEC Guide 65	**AS PER** (STANDARD TO WHICH YOUR ORGANIZATION IS ACCREDITED TO)	ISO 17025
VALIDITY (EXPIRY DATE OF CERTIFICATION BODY ACCREDITATION)	Active as of date of issuance of this certificate	**VALIDITY** (EXPIRY DATE OF LABORATORY ACCREDITATION)	Active as of date of issuance of this certificate
REFERENCE NUMBER: (CERTIFICATION BODY ACCREDITATION REFERENCE NUMBER TO VERIFY ON THE ACCREDITOR'S WEBSITE)	Accreditation ID #0198	**REFERENCE NUMBER:** (THE LABORATORY ACCREDITATION REFERENCE NUMBER TO VERIFY ON THE ACCREDITOR'S WEBSITE)	Accreditation ID# TL-157
CERTIFICATION MARK			

(ENDORSEMENT) TO BE SIGNED BY MANUFACTURER			
NAME OF MANUFACTURER'S SIGNATORY	P Ottavio	**SIGNATURE**	
EMAIL / TEL	Pottavio@ffeuk.com +44 (0)1462 444 740	**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	Tim Fritz	**SIGNATURE**	
EMAIL / TEL	Timothy.C.Fritz@ul.com (847) 664-2520	**CERTIFICATION BODY OFFICIAL SEAL**	Building & Life Safety Technologies Northbrook, IL US For UAE Certificate of Compliance use only.
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)**