UL-EU CERTIFICATE

Certificate No.	UL-EU-01128-CPR
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Date of Issue	2020-01-22
Date of Re-Issue	2023-10-18
Certificate Holder	LGM Products Ltd. Unit 03 Quantum Business Park, Beacon Hill Road, Hampshire, GU52 8EA United Kingdom
Manufacturer	Factory A
Certified Product Type	Non-resettable line-type heat detectors
Product Trade Name	LocatorPlus-EN - Sensor Control Unit FT-68-EN - Linear Heat Detection Cable FT-68-EN-S - Linear Heat Detection Cable FT-78-EN - Linear Heat Detection Cable FT-78-EN-S - Linear Heat Detection Cable FT-88-EN - Linear Heat Detection Cable FT-88-EN-S - Linear Heat Detection Cable FT-EOL-EN - End-of-Line Unit
Trademark	SIGNALINE HEAT
Rating/Classification	See Appendix
Harmonised Technical Specifications	EN54-28:2016
Supporting Documentation	S36157-D01-EuropeanDirective-Original
Additional information	N/A
Expiry date	2029-08-23

UL EU

UKAS PRODUCT CERTIFICATION 4705

Authorized Certification Decision Maker
Richard Bristow

This is to certify that representative samples of the Certified Product listed above have been investigated by Underwriters Laboratories to the Standard(s) indicated on this Certificate, in accordance with the UL Global Services Agreement and the UL-EU Mark Service Terms and Conditions ("Agreement"). The Certificate Holder is entitled to use the UL-EU Mark for the Certified Product listed on the certificate and manufactured at the production site(s) listed, in accordance with the terms of the Agreement. Only those products bearing the UL-EU Mark for Europe should be considered as being covered by UL's UL-EU Mark Service. This Certificate shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.

Appendix UL-EU CERTIFICATE

Essential Characteristics	Performance	Standard
4 - Product Characteristics	**Pass**	EN 54-28:2016
5.1 - General	**Pass**	EN 54-28:2016
5.2 - Nominal activation conditions/sensitivity		
5.2.1 - Individual alarm indication	**Pass**	EN 54-28:2016
5.2.2 - Signaling	**Pass**	EN 54-28:2016
5.3 - Operational reliability		
5.3.1 - Maximum ambient temperature test (endurance) for sensing element	**Pass**	EN 54-28:2016
5.3.2 - Connection of ancillary devices	**Pass**	EN 54-28:2016
5.3.3 - Manufacturer's adjustments	**Pass**	EN 54-28:2016
5.3.4 - Requirements for software-controlled detectors	**Pass**	EN 54-28:2016
5.3.5 - Sensing element fault	**Pass**	EN 54-28:2016
5.3.6 - On-site adjustment of response behaviour	**NA**	
5.4 - Tolerance to supply voltage		
5.4.1 - Variation in supply parameters	**Pass**	EN 54-28:2016
5.4.2 - Low voltage fault (sensor control unit with external power supply)	**Pass**	EN 54-28:2016
5.5 - Performance parameters under fire condition	**Pass**	EN 54-28:2016
5.6 - Durability of performance parameters under fire condition		
5.6.1 - Temperature resistance		
5.6.1.1 - Dry heat (operational) test for sensor control unit	**Pass**	EN 54-28:2016
5.6.1.2 - Cold (operational) for sensing element	**Pass**	EN 54-28:2016
5.6.1.3 - Cold (operational) for sensor control unit	**Pass**	EN 54-28:2016
5.6.2 - Humidity resistance		
5.6.2.1 - Damp heat, stead-state (endurance) for sensor control unit and sensing element	**Pass**	EN 54-28:2016
5.6.2.2 - Damp heat, cyclic (operational) for sensing element	**Pass**	EN 54-28:2016
5.6.2.3 - Damp heat, cyclic (operational) for sensor control unit	**Pass**	EN 54-28:2016
5.6.2.4 - Damp heat, steady-state (operational) for sensor control unit	**NA**	
5.6.2.5 - Damp heat, cyclic (endurance) for sensor control unit and sensing element	**Pass**	EN 54-28:2016
5.6.3 - Shock and vibration resistance		
5.6.3.1 - Shock (operational) for sensor control unit	**Pass**	EN 54-28:2016
5.6.3.2 - Impact (operational) for sensor control unit	**Pass**	EN 54-28:2016
5.6.3.3 - Impact (operational) for sensing element	**Pass**	EN 54-28:2016
5.6.3.4 - Vibration, sinusoidal (operational) for sensor control unit	**Pass**	EN 54-28:2016
5.6.3.5 - Vibration, sinusoidal (operational) for sensing element	**Pass**	EN 54-28:2016
5.6.3.6 - Vibration, sinusoidal (endurance) for sensor control unit	**Pass**	EN 54-28:2016
5.6.3.7 - Vibration, sinusoidal (endurance) for sensing element	**Pass**	EN 54-28:2016
5.6.4 - Test for corrosion resistance		
5.6.4.1 - Sulphur dioxide (SO_2) corrosion (endurance) for sensing element	**Pass**	EN 54-28:2016
5.6.4.2 - Sulphur dioxide (SO_2) corrosion (endurance) for sensor control unit	**Pass**	EN 54-28:2016
5.6.5 - Electrical stability	**Pass**	EN 54-28:2016

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Ratings for Sensor Control Unit (LocatorPlus-EN)	
Operating Voltage:	24 VDC (12-36 VDC)
Alarm Relay Rating:	30 VAC/42.4 VDC, 2 A (2 x Form C)
Fault Contact Ratings:	35 VDC maximum, 80 mA maximum (2 x outputs)
Zone End-of-Line Resistor	3.6 k ohm (Zone 1 and Zone 2)
Environmental Group	II

This device must only be powered with an EN54-4 compliant power supply.

Ratings for Sensing Element (FT-68-EN, FT-68-EN-S)	
Marked Rating:	T068-V10-A045
Nominal Alarm Temperature:	68°C
Tolerance Alarm Temperature:	±10% (±7.8°C)
Maximum Ambient Temperature:	45°C
Environmental Group	II

Ratings for Sensing Element (FT-78-EN, FT-78-EN-S)	
Marked Rating:	T078-V10-A045
Nominal Alarm Temperature:	78°C
Tolerance Alarm Temperature:	±10% (±7.8°C)
Maximum Ambient Temperature:	45°C
Environmental Group	III

Ratings for Sensing Element (FT-88-EN, FT-88-EN-S)	
Marked Rating:	T088-V10-A065
Nominal Alarm Temperature:	88°C
Tolerance Alarm Temperature:	±10% (±8.8°C)
Maximum Ambient Temperature:	65°C
Environmental Group	III

Ratings for Functional Unit (FT-EOL-EN)	
Environmental Group	III

Appendix UL-EU Certificate

Certification Mark	**UL-EU mark**
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The UL-EU Mark, as displayed below, shall appear on certified products only. Minimum size is not specified, as long as the Mark is legible. The following is suggested.

The minimum height of the registered trademark symbol ® shall be 1 mm. When the overall diameter of the UL-EU Mark is less than 9.5 mm, the trademark symbol may be omitted if it is not legible to the naked eye.

The UL-EU Mark may appear on a label, nameplate, or may be cast, stamped or molded into the product. When appearing on a label or nameplate, the Manufacturer's name or trademark along with a model number are also required on that same label or nameplate. If cast, stamped or molded, the Manufacturer's name or trademark and model number shall also appear elsewhere on the product.

All content shall be in accordance with the details provided on this UL-EU Certificate.

PROCUREMENT

The Production site may reproduce the Mark or obtain it from a UL authorized supplier. The list of UL authorized suppliers can be found on UL's online directory at www.ul.com.

CERTIFICATE OF COMPLIANCE

Certificate Number	20190515-S24913
Report Reference	S24913-20100318
Issue Date	2019-MAY-15
Issued to:	LGM PRODUCTS LTD RIVERSIDE INDUSTRIAL PARK, UNIT 15 FARNHAM, SURREY GU9 7UG UNITED KINGDOM
This certificate confirms that representative samples of	HEAT-ACTUATED DEVICES FOR SPECIAL APPLICATION; HEAT-AUTOMATIC FIRE DETECTORS Fixed temperature line type heat detector cables for indoor/outdoor use: FT68, FT88, FT105, FT-185-R, FT-230-X, FT68-R, FT88-R, FT105-R Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	UL521, Heat Detectors for Fire Protective Signaling Systems ULC S530, Heat Actuated Fire Detectors for Fire Alarm Systems
Additional Information:	See the UL Online Certifications Directory at https://iq.ulprospector.com for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC