DECLARATION OF PERFORMANCE

According to Construction Products Regulation EU N° 305/2011

No. DOP-F2237

1. Unique Product identification code:

   FirerayOne

2. Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

   FirerayOne

3. Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

   Smoke detector - Line detector using an optical light beam,

   for use in fire detection and alarm systems within buildings

4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

   FFE Ltd
   9 Hunting Gate,
   Hitchin, Hertfordshire
   SG4 0TJ, United Kingdom

5. Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2):

   Not applicable

6. System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

   System 1

7. In case of the declaration of performance concerning a construction product covered by the harmonized standard:

   BRE Certification Ltd - 0832

   performed type testing and the initial inspection of the manufacturing plant and of the factory production control with continuous surveillance assessment and approval of the factory production control under system 1 and issued the EC certificates of conformity:

   0832-CPR-F2237

8. In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

   Not Applicable, see Item 7

9. Declared performance:

   All requirements including all Essential Characteristics and the corresponding performances for the intended use or uses indicated in 3. have been determined as described in the hEN mentioned in the following table.

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SCOPE AND RELEVANT CHARACTERISTICS

Essential characteristics	Performance against the Harmonized Technical Specification EN54-12:2015	
Operational reliability		
Individual alarm indication	4.2.1	Integral visible indicator
Connection of ancillary devices	4.2.2	Not applicable
Manufacturers' adjustments	4.2.3	Complies
On-site adjustment of response value	4.2.4	Complies
Protection against ingress of foreign bodies	4.2.5	Sphere of diameter 1.3mm cannot enter enclosure
Monitoring of detachable detectors and connections	4.2.6	Complies
Additional requirements for software controlled detectors	4.2.7	Documentation available, modular structure, invalid data not permitted, program deadlock avoided. site specific data in non-volatile memory with two-week retention
Nominal activation conditions/Sensitivity		
Reproducibility	4.3.1	Cmin ≥ 0.4dB, Cmax / Crep ≤ 1.33, Crep / Cmin ≤ 1.5
Repeatability	4.3.2	No fault or alarm signals for 3 days, Cmin ≥ 0.4dB, Cmax /Cmin ≤ 1.6
Tolerance to beam misalignment	4.3.3	Angle of misalignment is ≥ 0.5 degrees, no fault or alarm signal within 0.5 degrees, alarm at 0.5 degrees within 30s with 6dB filter.
Rapid changes in attenuation	4.3.4	Alarm signal within 30s with 6dB filter in front of receiver, fault signal within 60s with 10dB filter in front of receiver. Alarm signal not cancelled by fault.
Slow changes in attenuation	4.3.5	Drift compensation limited so that for fires developing faster than C/4 per hour the response value does not increase by more than 1.6 x C, where C is the initial response value. Compensation range limited. Alarm signal not cancelled by fault.
Optical path length dependence	4.3.6	Cmin ≥ 0.4dB, Cmax / Cmin ≤ 1.6
Stray Light	4.3.7	No fault or alarm signals during conditioning, Cmin ≥ 0.4dB, Cmax / Cmin ≤ 1.6
Tolerance to supply voltage Variation of supply parameters	4.4	Cmin ≥ 0.4dB, Cmax / Cmin ≤ 1.6
Performance under fire conditions Fire sensitivity	4.5	Alarm signal in each test fire, with $m_a < 0.7$ dB m^{-1}

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SCOPE AND RELEVANT CHARACTERISTICS

Essential characteristics	**Performance against the Harmonized Technical Specification EN54-12:2015**	
Durability of operational reliability; temperature resistance		
Dry heat (operational)	4.6.1.1	No fault or alarm signals during conditioning, Alarm signal within 30s with 6dB filter in front of receiver, Cmin ≥ 0.4dB, Cmax / Cmin ≤ 1.6
Cold (operational)	4.6.1.2	No fault or alarm signals during conditioning, Alarm signal within 30s with 6dB filter in front of receiver, Cmin ≥ 0.4dB, Cmax / Cmin ≤ 1.6
Damp heat, stead state (operational)	4.6.2.1	No fault or alarm signals during conditioning, Cmin ≥ 0.4dB, Cmax / Cmin ≤ 1.6
Damp heat, stead state (endurance)	4.6.2.2	Cmin ≥ 0.4dB, Cmax / Cmin ≤ 1.6
Vibration (endurance)	4.6.3.1	Cmin ≥ 0.4dB, Cmax / Cmin ≤ 1.6
Impact (operational)	4.6.3.2	No alarm or fault signals during the conditioning except when the beam is obstructed by the impact apparatus. Cmin ≥ 0.4dB, Cmax / Cmin ≤ 1.6
EMC, immunity tests (operational)	4.6.4	Meets the requirements of EN 50130-4:2015 and Cmin ≥ 0.4dB, Cmax / Cmin ≤ 1.6
Sulphur dioxide SO2 corrosion	4.6.5	Cmin ≥ 0.4dB, Cmax / Cmin ≤ 1.6

10. The performance of the product identified in 1. and 2. is in conformity with the declared performance in 9. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011 under the sole responsibility of the manufacturer identified in 4.

Signed for and on behalf of the manufacturer by:

Jacob Andelin
Technical Director
Hitchin, 20 December 2017