



Date : 2018/9/26

CERTIFICATE OF COMPLIANCE

This certificate of compliance validates the following			
TEST REPORT NUMBER 'Assessment Reports' are not acceptable	BMA 03057 SW-2001210	CERTIFICATE NUMBER	G203070
DATE OF ISSUE	07.11.2003 24.10.2003	DATE OF ISSUE	11.06.2018
DATE OF EXPIRY	NA	DATE OF EXPIRY	31.03.2019
Manufacturer details			
NAME OF FACTORY/ MANUFACTURER	FFE Ltd	NAME OF THE BRAND	Fireray
FACTORY ADDRESS / REGION (STREET / TOWN / CITY / COUNTRY)	9 Hunting Gate Hitchin Hertfordshire, UK SG4 0TJ	MODEL / NO	Fireray 50 RV Fireray 100 RV
WEBSITE	www.ffeuk.com	LOGO ON THE PRODUCT	
TEL	+44 ()1462 444 270	EMAIL	pottavio@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)	1.5 Technical data of the test specimen (as indicated by the manufacturer): Range of FireRay 50RV 5 to 50 m Range of FireRay 100RV 50 to 100 m Power supply: (10.2-30.0) V DC Quiescent current consumption: < 4 mA, no indications Current consumption under alarm/fault conditions: < 15 mA Required duration for RESET-control: > 5 s Temperature range: -30°C to 55°C Tolerance of axial variation at 35% receiv.: Detector $\pm 1.0^\circ$, prism $\pm 5.0^\circ$ Alarm threshold: 1.63 dB (25%), 2.78 dB 35%, 6.02 dB (50%) Infrared wavelength: 880 nm Max. dimensions of detector: W 130 mm. H 210 mm. D 120 mm Weight: 0.670 kg	7
TEST STANDARD (SUCH AS ASTM/BS EN/ DN ETC)	In compliance with EN 54-12 (03/2002) the detector shall fulfil all requirements of "Requirements" Section 4 and "Tests" Section 5.	14
TEST DESCRIPTION	Type testing of the FireRay 50R and FireRay 100R detectors submitted by Fire Fighting Enterprises Ltd. is to ascertain compliance with the requirements of the following standards and guidelines for alarm signalling systems: • EN 54-12 "Smoke Detectors – Linear detectors operating according to the principle of transmitted light" Issue 12/02	9
SPECIFICATION OF TEST SPECIMEN	Submitted for testing were: 7 FireRay 50R 2 FireRay 100R 3 set of technical documentation	3
TEST RESULT (SUCH AS PASSED CRITERIA___/ COMPLIED TO___/ DURATION___/OBSERVATION___/ETC)	Overall test result The detectors of type FireRay 50R, FireRay 100R, FireRay 50RV and FireRay 100RV fulfil the requirements of the Guidelines and Test Agreements specified under Item 2 "Test Schedule".	39



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.

The housing of the FireRay 50RV and 100RV detectors always contains a transmitter and a receiver.

The penetration of smoke into the thin core light beam causes an attenuation of the light beam that is proportional to the level of smoke density. The resulting weaker light beam is analysed in the detector and causes the release of an alarm or fault signal according to result analysed.

The threshold values for the release of an alarm can be selected according to ambient conditions. Once the received signal drops below the selected value for an uninterrupted period of minimum 10 seconds, pick-up of the the alarm relay of the FireRay takes place.

Pick-up of the alarm relay is initiated at the moment at which a fast rate attenuation of the infrared light beam by 90% or more takes place for a duration of minimum 10 seconds.

The FireRay monitors slow dropout and rising of the infrared signal caused by contamination of the optical components or by aging. The signal received is compared every 15 minutes with a reference value and variations greater than 0.7 dB per hour are automatically compensated for.

Other than with detectors 50/100R, a Low Level Controller (LLC) may be connected to the type 50/100RV detector. An alarm of the connected RV detector can be triggered and checked on the LLC by means of a key switch.

7

Laboratory and Certification body details

NAME OF CERTIFICATION BODY	VdS Schadenverhütung GmbH	NAME OF TEST FACILITY	VdS Schadenverhütung GmbH
CERTIFICATION BODY ADDRESS / REGION (STREET / TOWN / CITY / COUNTRY)	Amsterdamer Str. 174 50735 Cologne Germany	TEST FACILITY ADDRESS / REGION (STREET / TOWN / CITY / COUNTRY)	Amsterdamer Str. 174 50735 Cologne Germany
WEBSITE	www.vds.de	WEBSITE	www.vds.de
TEL	+49 221 7766 0	TEL	+49 221 7766 0
EMAIL	Cs-fire@vds.de	EMAIL	Cs-fire@vds.de
ACCREDITED BY (NAME OF ACCREDITATION BODY WHICH ISSUED ACCREDITATION TO THE CERTIFICATION BODY, ALONG WITH WEBSITE)	DAkks www.dakks.de	ACCREDITED BY (NAME OF ACCREDITATION BODY WHICH ISSUED ACCREDITATION TO THE LABORATORY, ALONG WITH WEBSITE)	DAkks www.dakks.de
AS PER (STANDARD TO WHICH THE CERTIFICATION BODY IS ACCREDITED TO)	DIN EN ISO 17065	AS PER (STANDARD TO WHICH YOUR ORGANIZATION IS ACCREDITED TO)	DIN EN ISO 17025
VALIDITY (EXPIRY DATE OF CERTIFICATION BODY ACCREDITATION)	2018-11-28	VALIDITY (EXPIRY DATE OF LABORATORY ACCREDITATION)	2018-11-28
REFERENCE NUMBER: (CERTIFICATION BODY ACCREDITATION REFERENCE NUMBER TO VERIFY ON THE ACCREDITOR'S WEBSITE)	D-ZE-11149-01-01	REFERENCE NUMBER: (THE LABORATORY ACCREDITATION REFERENCE NUMBER TO VERIFY ON THE ACCREDITOR'S WEBSITE)	D-PL-11149-01-00
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	FFE Ltd 9 Hunting Gate Hitchin SG4 0TJ England
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	<i>Martin Hesel</i>	SIGNATURE	
EMAIL / TEL	<i>mhesel@vds.de</i>	CERTIFICATION BODY OFFICIAL SEAL	vds SCHADENVERHÜTUNG GmbH Zertifizierungsstelle Amsterdamer Str. 172 50735 Köln
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)

Anerkennung

von Bauteilen und Systemen

Approval

of Components and Systems

Inhaber der Anerkennung
Holder of the Approval

FFE Limited

9 Hunting Gate

GB-SG4 0TJ Hitchin, Hertfordshire

Anerkennungs-Nr. Approval No.	Anzahl der Seiten No. of pages	gültig vom (TT.MM.JJJJ) valid from (dd.mm.yyyy)	gültig bis (TT.MM.JJJJ) valid until (dd.mm.yyyy)
G 203070	8	11.06.2018	31.03.2019

Gegenstand der Anerkennung
Subject of the Approval

Linienförmiger Rauchmelder /

Line-type smoke detector

Fireray 50 RV; Fireray 100 RV

Verwendung
Use

in automatischen Brandmeldeanlagen

in automatic fire detection and fire alarm systems

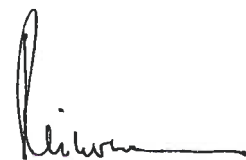
Anerkennungsgrundlagen
Basis of the Approval

VdS 2344:2014-07

VdS 2504:1996-12 / 5.6

EN 54-12:2002

Köln, den 11.06.2018



Dr. Reinermann

Geschäftsführer
Managing Director



i. V. Hesels

Leiter der Zertifizierungsstelle
Head of Certification Body

Die Anerkennung umfasst nur Bauteile/Systeme, die eingereicht

- mit den Anlagen
- dokumente
- Unterlagen
- zur Verifizierung
- benötigen
- Schutz-

Bei der Anwendung des Zertifikats sind die Vorschriften der VdS zu beachten. Das Zertifikat ist mit sämtlichen Unterlagen zu versehen. Die Unterlage ist zu erhalten.

This Approval is valid only for the system

- together with the enclosure documents
- for the use of the protection

When using the approval, the certificate shall be observed. This certificate is valid only for the system. The certificate is to be kept. The certificate is to be kept.

VdS Schaden- und Sicherheitszertifizierung. D-50735 Köln. Ein Unternehmen des Verbandes der Deutschen Versicherungswirtschaften. Zertifizierung der Bereiche Schaden- und Sicherheitszertifizierung.

A company of the Association for Damage and Security Certification.

zur Anerkennungsnummer/ to Approval No. G 203070 vom/ dated 11.06.2018

Der Gegenstand der Anerkennung umfasst folgende Bestandteile.
The subject of the approval comprises the following parts.

Bezeichnung des Gegenstandes Description of Subject	Typ Type	Kenn-Nr. des Inhabers Holder's Registration No.	Anerkennungsnr Approval No.
Linienförmiger Rauchmelder / Line-Type Smoke Detector	Fireray 50RV		
Linienförmiger Rauchmelder / Line-Type Smoke Detector	Fireray 100RV		

zur Anerkennungsnummer/ to Approval No. G 203070 vom/ dated 11.06.2018

Der Gegenstand der Anerkennung wird durch folgende Unterlagen beschrieben.
The subject of the approval is described by the following documents.

Art der Unterlage Type of Document	Kennzeichnung der Unterlage Identification of document	Datum Date	Seiten Pages
VdS Prüfberichte: Test Reports:			
	BMA 03057 SW-2001210	07.11.2003 24.10.2003	
Fireray 50RV			
Approval Documents List	22-0010-03	--	2
General Assembly	98-0206-09-06 (8)	18.09.2013	2
50RV P.C.B. Assembly	98-0208-04-03(1)	18.10.2012	1
P.C.B. Assembly	0208-06, issue 6	22.06.2005	2
Dual LED Cable Assy.	0423-01, issue 1	13.11.2002	1
Power/Data Cable Assy.	0517-01, issue 1	17.07.2003	1
General Assembly Parts List	98-0206-09-06(8)	18.09.2013	1
50RV P.C.B. Assembly Parts List	98-0208-04-03(1)	18.10.2012	1
P.C.B. Assembly Parts List	IL0208-06, issue 6	22.06.2005	4
Dual LED Cable Assy. Parts List	IL0423-01, issue 1	13.11.2002	1
Power/Data Cable Assy. Parts List	0517-01, issue 1	17.07.2003	1
50RV Control Software	0457-01, issue 1	17.03.2003	
CPU Circuit Diagram	0208-02CPU, issue 2	15.04.2004	2
Interface Circuit Diagram	0208-02 Interface, issue 2	31.07.2003	2
Transmitter Circuit Diagram	0208-03 Transmitter, issue 3	06.01.2003	2
Receiver Circuit Diagram	0208-02 Receiver, issue 2	14.01.2005	2
Installation Guide (English & German)	22318.18.06_EN 22318.18.06_DE	18.09.2013	8

zur Anerkennungsnummer/ to Approval No. G 203070 vom/ dated 11.06.2018

Der Gegenstand der Anerkennung wird durch folgende Unterlagen beschrieben.
The subject of the approval is described by the following documents.

Art der Unterlage Type of Document	Kennzeichnung der Unterlage Identification of document	Datum Date	Seiten Pages
Thumb Wheel	0035-01, issue 1	26.03.2001	1
Divider	0038-03, issue 3	19.09.2002	1
Back Moulding C/W Gasket	0041-02(4), issue 2(4)	15.11.2001	1
Inner Moulding	0042-04, issue 4(1)	18.05.2013	1
Outer Cover Moulding	0283-02(2), issue 2(2)	05.06.2013	1
Spring Post	0199-03, issue 3	04.07.2001	1
Backplate	0204-01, issue 1	05.10.2004	1
Test Filter	0209-02, issue 2	29.06.2001	1
M3 Stud	0223-02, issue 2	02.05.2001	1
Inner Moulding (Painted)	0235-03, issue 3	26.05.2006	1
PCB Label (50RV)	0459-04(1), issue 4(1)	18.10.2013	1
Seal (Neoprene Sponge Cord)	0275-01, issue 1	14.11.2001	1
Lens, Clear	19828.02.F, issue F	26.05.2006	1
Product Label	0970-09-07, issue 7	05.06.2013	1
Carton Label	0977-09-06, issue 6	05.06.2013	1
Fireray 100RV			
Approval Documents List	22-0010-03	--	2
General Assembly	98-0206-10-06 (8)	18.09.2013	2
100RV P.C.B. Assembly	98-0208-05-03 (1)	18.10.2012	1
P.C.B. Assembly	0208-06, issue 6	22.06.2005	2
Dual LED Cable Assy.	0423-01, issue 1	13.11.2002	1
Power/Data Cable Assy.	0517-01, issue 1	17.07.2003	1
General Assembly Parts List	98-0206-10-06(8)	18.09.2013	2

zur Anerkennungsnummer/ to Approval No. G 203070 vom/ dated 11.06.2018

Der Gegenstand der Anerkennung wird durch folgende Unterlagen beschrieben.
The subject of the approval is described by the following documents.

Art der Unterlage Type of Document	Kennzeichnung der Unterlage Identification of document	Datum Date	Seiten Pages
100RV P.C.B. Assembly Parts List	98-0208-05-03(1)	18.10.2012	1
P.C.B. Assembly Parts List	IL0208-06, issue 6	22.06.2005	4
Dual LED Cable Assy. Parts List	IL0423-01, issue 1	13.11.2002	1
Power/Data Cable Assy. Parts List	0517-01, issue 1	17.07.2003	1
100RV Control Software	0458-01, issue 1	17.03.2003	
CPU Circuit Diagram	0208-02CPU, issue 2	15.04.2004	2
Interface Circuit Diagram	0208-02 Interface, issue 2	31.07.2003	2
Transmitter Circuit Diagram	0208-03 Transmitter, issue 3	06.01.2003	2
Receiver Circuit Diagram	0208-02 Receiver, issue 2	14.01.2005	2
Installation Guide (English / German)	22318.18.05_EN 22318.18.05_DE	18.09.2013	8
Thumb Wheel	0035-01, issue 1	26.03.2001	1
Divider	0038-03, issue 3	19.09.2002	1
Back Moulding C/W Gasket	0041-02(4), issue 2(4)	15.11.2001	1
Inner Moulding	0042-04(1), issue 4(1)	18.05.2013	1
Outer Cover Moulding	0283-02(2), issue 2(2)	05.06.2013	1
Spring Post	0199-03, issue 3	04.07.2001	1
Backplate	0204-01, issue 1	05.10.2004	1
Test Filter	0209-02, issue 2	29.06.2001	1
M3 Stud	0223-02, issue 2	02.05.2001	1
Inner Moulding (Painted)	0235-03, issue 3	26.05.2006	1
PCB Label (100RV)	0460-04(1), issue 4(1)	18.10.2012	1

zur Anerkennungsnummer/ to Approval No. G 203070 vom/ dated 11.06.2018

Der Gegenstand der Anerkennung wird durch folgende Unterlagen beschrieben.
The subject of the approval is described by the following documents.

Art der Unterlage Type of Document	Kennzeichnung der Unterlage Identification of document	Datum Date	Seiten Pages
Seal (Neoprene Sponge Cord)	0275-01, issue 1	14.11.2001	1
Lens, Clear	19828.02.F, issue F	26.05.2006	1
Reflective Prism (IMO) C/W Polybag	23901.01, issue 1	03.05.2006	1
Product Label	0970-10-07, issue 7	05.06.2013	1
Carton Label	0977-10-06, issue 6	05.06.2013	1

zur Anerkennungsnummer/ to Approval No. G 203070 vom/ dated 11.06.2018

Hinweise für die Anwendung des Gegenstandes der Anerkennung nach Anlage 1.
Instructions for the application of the subject of approval (see enclosure 1).

Die linienförmigen Rauchmelder Typen Fireray 50RV und Fireray 100RV sind zur Verwendung in automatischen Brandmeldeanlagen vorgesehen.

Elektrische Daten:

Betriebsspannung U_B (DC)	10,2 V bis 30 V
Ruhestromaufnahme:	4 mA
Alarmstromaufnahme:	15 mA
Einsatzbereich Fireray 50RV:	5 m bis 50 m
Einsatzbereich Fireray 100RV:	50 m bis 100 m

Optische Daten:

Optische Wellenlänge:	880 nm
Max. zul. Fehlerwinkel:	Transmitter $\pm 1,0^\circ$, Prima $\pm 5,0^\circ$
Alarmschwellen:	2,50dB (25%), 3,74dB (35%), 6,02dB (50%)

zur Anerkennungsnummer/ to Approval No. G 203070 vom/ dated 11.06.2018

Hinweise für die Anwendung des Gegenstandes der Anerkennung nach Anlage 1.
Instructions for the application of the subject of approval [see enclosure 1].

Line-type smoke detector types Fireray 50RV and Fireray 100RV are intended for the use in automatic fire detection and fire alarm systems.

Electrical data:

Operating voltage U_b (DC)	10,2 V to 30 V
Quiescent current consumption:	4 mA
Alarm current consumption:	15 mA
Operating distance Fireray 50RV:	5 m to 50 m
Operating distance Fireray 100RV:	50 m to 100 m

Optical data:

Optical wavelength:	880 nm
Max. permitted fault angle:	transmitter $\pm 1,0^\circ$, prisma $\pm 5,0^\circ$
Alarm thresholds:	[2,50dB (25%), 3,74dB (35%), 6,02dB (50%)