The manufacturer
may use the mark:

Reports:
DET 11-08-054 R003 V0R1
IEC 61508 Assessment
X3301, X3302
DET 11-08-054 R002 V1 R3
X330x FMEDA Report

Validity:
This assessment is valid for
the X3301, X3302 IR Flame
Detector.

This assessment is valid until
October 1, 2015.

Revision 1.1 September 28, 2012

exida
Certification Services

Certificate / Certificat
Zertifikat / 合格証

DET 1108054 C001

exida hereby confirms that the:

X3301, X3302
Multispectrum IR Flame Detectors

Detector Electronics Corporation
Minneapolis, MN - USA

Has been assessed per the relevant requirements of:

IEC 61508 : 2010 Parts 1-7

and meets requirements providing a level of integrity to:

Systematic Integrity: SIL 2 Capable

Random Integrity: Type B Element

**PFD_{AVG} and Architecture Constraints
must be verified for each application**

Safety Function:
The Multispectrum IR Flame Detector will sense infrared
emission from flame sources and signal the 4 –20 mA or relay
output to indicate the potentially dangerous condition.

Application Restrictions:
The unit must be properly designed into a Safety Instrumented
Function per the Safety Manual requirements.

_____
Evaluating Assessor

_____
Certifying Assessor

Page 1 of 2

Certificate / Certificat / Zertifikat / 合格証

DET 1108054 C001

Systematic Integrity: SIL 2 Capable

Random Integrity: Type B Element

**PFD_{AVG} and Architecture Constraints
must be verified for each application**

**X3301, X3302
Multispectrum IR
Flame Detectors**

**Detector Electronics
Corporation**

Minneapolis, MN - USA

SIL 2 Capability:

The product has met manufacturer design process requirements of Safety Integrity Level (SIL) 2. These are intended to achieve sufficient integrity against systematic errors of design by the manufacturer.

A Safety Instrumented Function (SIF) designed with this product must not be used at a SIL level higher than stated without "prior use" justification by end user or diverse technology redundancy in the design.

IEC 61508 Failure Rates in FIT*

Device	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}	SFF
X3301, X3302 Relay	1777	360	634	124	95.7%
X3301, X3302 Current	0	359	2448	116	96.0%
X3301, X3302 mA w/HART	0	363	2615	133	95.7%

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFD_{AVG} considering redundant architectures, proof test interval, proof test effectiveness, any automatic diagnostics, average repair time and the specific failure rates of all products included in the SIF. Each subsystem must be checked to assure compliance with minimum hardware fault tolerance (HFT) requirements.

* FIT = 1 failure / 10^9 hours

Form	Version	Date
C61508	2.7-2	Mar 2011