The manufacturer
may use the mark:



**Reports**:
DET 0402-24 R001 FMEDA
Report V1 R2
DET 0902-04 R002
Assessment Report  V1 R1

**Validity:**
 This assessment is valid for
the Pointwatch Eclipse IR
Gas Detector.

This assessment is valid until
July 30, 2013.
Revision 2.3 June 29, 2010


Certification S.A.

# Certificate / Certificat
# Zertifikat  / 合格証

## DET 090204 C001

*exida* hereby confirms that the:

## Pointwatch Eclipse

## Models PIRECL and HC200

### Infrared Hydrocarbon Gas Detector

## Detector Electronics Corporation
## Minneapolis, MN USA

Has been assessed per the relevant requirements of:

## IEC 61508 Parts 1, 2, 3
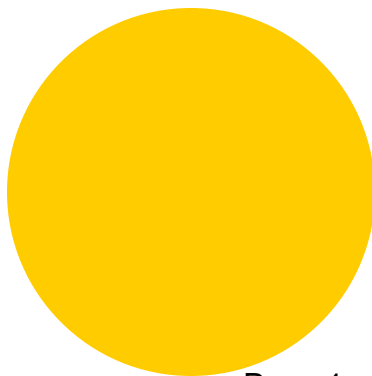
and meets requirements providing a level of integrity to:

## Systematic Integrity: SIL 2 Capable
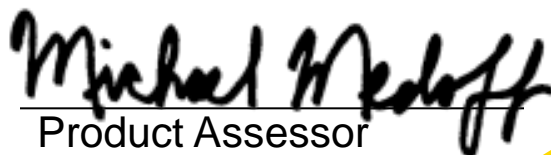## Random Integrity for Type B Device:
## SIL 2 @ HFT=0

Safety Function:
The Pointwatch Eclipse IR  detector will sense hydrocarbon gas
and signal the 4 – 20 mA. 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.

_____
Product Assessor

_____
Auditor

# Certificate / Certificat / Zertifikat / 合格証

## DET 090204 C001

### Systematic Integrity: SIL 2 Capable

### Random Integrity for Type B Device: SIL 2 @ HFT=0

**Pointwatch Eclipse Infrared Hydrocarbon Gas Detector**

**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

| Failure category | | | Failure rate (in FITs) |
|---|---|---:|---:|
| Fail Safe Detected | | | 118 |
| Fail Safe Undetected | | | 209 |
| Fail Dangerous Detected | | | 1537 |
| | Fail Detected (int. diag.) | 1324 | |
| | Fail Low (detected by the logic solver) | 188 | |
| | Fail High (detected by the logic solver) | 25 | |
| Fail Dangerous Undetected | | | 123 |
| No Effect | | | 436 |
| Annunciation Undetected | | | 0 |

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

**exida** ®
Certification S.A.

| Form | Version | Date |
|---|---|---|
| C61508 | 2.03 | Mar 2009 |