

CERTIFICATE OF CONFORMITY



1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** FM16US0049
3. **Equipment:** 3909010, E²T Pulsar 4 Advanced Infra-Red Pyrometer
(Type Reference and Name) 3909020, E²T Pulsar 4 Infra-Red Pyrometer
4. **Name of Listing Company:** LumaSense Technologies GmbH
5. **Address of Listing Company:** Kleyerstrasse 90, Frankfurt, D-60326, Germany
6. The examination and test results are recorded in confidential report number:
3049884 dated 24th June 2014
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:
FM Class 3600:2011, FM Class 3615:2006, FM Class 3810:2005, ANSI/NEMA 250:2008,
ANSI/IEC 60529:2004
8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
10. **Equipment Ratings:**
Explosionproof for Class I, Division 1, Groups B, C, and D T4 Ta = -40°C to 60°C hazardous (classified) locations, indoors and outdoors rating Type 4X and IP66.
11. The marking of the equipment shall include:
Class I, Division 1, Groups B, C & D, T4 Ta = -40°C to 60°C; Type 4X, IP66.

Certificate issued by:

J. E. Marquedant
Manager, Electrical Systems

9 May 2016

Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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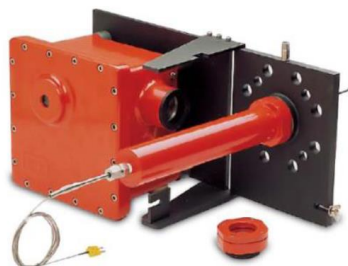
SCHEDULE



US Certificate Of Conformity No: FM16US0049

12. **Description of Equipment:**

The LumaSense E²T Pulsar 4 series of detection systems are designed for continuous and instantaneous measurement of Refractory Temperature (RT), Gas Temperature (GT) or Integrated Temperature (FF) in the vessel away from the heat, vibration and corrosive gases. Each system allows visual inspection of combustion processes, refractory cure out and preventative maintenance while the vessel is pressurized and fully operational. The Advanced model is used for monitoring complex processes, such as O₂ enrichment, which normally involve higher temperatures and demand close monitoring.



Operation Temperature Ranges:

The ambient operating temperature range of the Pulsar 4 range is -40°C to 60°C. Process temperature range is 350°C to 2000°C.

Electrical data:

The Pulsar 4 models can be configured as 24V dc, 115V ac or 250V ac.

13. **Specific Conditions of Use:**

None

14. **Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

15. **Schedule Drawings**

A copy of the technical documentation has been kept by FM Approvals.

16. **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
June 24, 2014	Original Issue.
9 th May 2016	<u>Supplement 1:</u> Report Reference: – 3057816 dated 9 th May 2016. Description of the Change: Add Type 4X Rating & Update IP Rating to IP66.

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