



DET NORSKE VERITAS

EC-TYPE EXAMINATION CERTIFICATE

[2] EQUIPMENT OR PROTECTED SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC

[3] EC-Type Examination Certificate Number: **DNV-2007-OSL-ATEX-9012X** Rev. 1

[4] Equipment or Protective System: Personal Toxic Gas Monitor ToxiRAE 3 model PGM-1700

[5] Applicant – Manufacturer or Authorized representative: Rae Systems Inc.

[6] Address: 3775 North First Street, San Jose CA95134, USA

[7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] DNV, notified body number 0575 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no. : **2007-3419**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0: 2006 and EN 60079-11:2007, EN 50284:1999

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

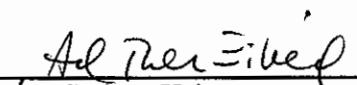
[11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protected system. If applicable, further requirements of this Directive apply to the manufacturer and supply of this equipment or protective system.

[12] The marking of the equipment or protective system shall include the following:

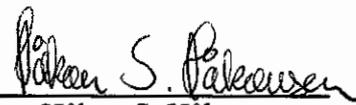
 **II 1 G Ex ia IIC T4, -20°C < T_{amb} < +60°C**



Høvik, 2007-10-30
for Det Norske Veritas Certification AS


for Steinar Kristensen
Certification Manager




Håkon S. Håkonsen
Technical Reviewer

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 300,000. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



[13]

Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE No.: DNV-2007-OSL-ATEX-9012X

Rev. 1

Certificate History

Revision	Description	Issue date
1	Original certificate	2007-10-30

[15] **Description of Equipment or Protective System**

ToxiRAE 3 is a personal single gas monitor for continuously display of toxic gas concentrations, STEL, TWA and Peak values as well as high, low STEL and TWA alarms. The physical dimensions are 85mm x 54 x 20mm without clip. The weight is 100g. It is small handheld and battery powered, housed in a dark conductive plastic back and stainless steel/PC front partially covered with a soft thermoplastic electrically conductive material. Audible and visual alarm indicators are included. The visual alarm comprises an Red/Green LED bar visual from the top. An imbalanced motor produces a vibration alert when in alarm mode. An infrared communication port allows galvanic isolated data transfer between the handheld instrument and a PC.

Nomenclature for ToxiRAE 3 type for each sensor type:

Sensor type	ToxiRAE 3 – Model No
CO	PGM1700 CO
H ₂ S	PGM1700 H2S
NH ₃	PGM1700 NH3
CO	PGM1700 CO2000
Cl ₂	PGM1700 CL2
ClO ₂	PGM1700 CL02
HCN	PGM1700 HCN
H ₂ S	PGM1700 H2S1000
NO	PGM1700 NO
NO ₂	PGM1700 NO2
O ₂	PGM1700 O2
PH ₃	PGM1700 PH3
SO ₂	PGM1700 SO2
HF	PGM1700 HF
HCl	PGM1700 HCL
CH ₃ SH	PGM1700 CH3SH
ETO	PGM1700 ETO
O ₃	PGM1700 O3



If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 300.000. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



DNV-2007-OSL-ATEX-9012X Rev. 1

- [16] **Report No.:** 2007-3419
Project No.: PRJC-18056-2007-PRC-NOR

Descriptive Documents

Number	Title	Rev.	Date
904-E900-102.04	List of schedule documents	4	2007-10-12

- [17] **Special Conditions for Safe Use**
It is a condition of safe use that the apparatus must be powered by non rechargeable cells of the following type only.
EVE ER14335 Lithium-thionyl Chloride, Size 2/3AA, 3.6 Volts

- [18] **Essential Health and Safety Requirements**
See part 9 of this certificate

END OF CERTIFICATE





Certificate of Compliance

Certificate: 1963909

Master Contract: 217005

Project: 1963909

Date Issued: 2007/11/07

Issued to: RAE Systems, Inc.
3775 North First St
San Jose, CA 95134
USA
Attention: James Pan

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US'



Issued by: Rich Masek

Authorized by: Peter Schimmoeller, Manager
of Certification Services

PRODUCTS

CLASS 4828 82 - SIGNAL APPLIANCES-Toxic Gas Detection Instruments - For Hazardous Locations. Certified to U.S. Standards

CLASS 4828 02 - SIGNAL APPLIANCES - Toxic Gas Detection Instruments - For Hazardous Locations

Class I; Division 1; Group A, B, C, D; T4

- Model PGM 1700, ToxiRAE III or ToxiRAE 3, Personal Toxic Gas Monitor, $-20\text{ }^{\circ}\text{C} \leq T_a \leq +60\text{ }^{\circ}\text{C}$,

The 'C' and 'US' indicators adjacent to the CSA Mark signify that the product has been evaluated to the applicable CSA and ANSI/UL Standards, for use in Canada and the U.S., respectively. This 'US' indicator includes products eligible to bear the 'NRTL' indicator. NRTL, i.e. National Recognized Testing Laboratory, is a designation granted by the U.S. Occupational Safety and Health Administration (OSHA) to laboratories which have been recognized to perform certification to U.S. Standards.



Certificate: 1963909

Master Contract: 217005

Project: 1963909

Date Issued: 2007/11/07

Intrinsically safe when powered by Eve ER14335 3.6 V battery.

APPLICABLE REQUIREMENTS

C22.2 No. 142-M1987 - Process Control Equipment

C22.2 No. 157-92 - Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations

ANSI/UL 913:2004 - Intrinsically Safe Apparatus

ANSI/UL 916:1998 - Energy Management Equipment

MARKINGS

- Submitter's identification
- Model designation or equivalent
- Complete electrical rating (List of acceptable batteries)
- Applicable hazardous locations designation - Class I; Division 1; Groups A, B, C and D;
- Temperature Code – T4
- Serial Number or date code
- CSA Monogram with c/us indicator as shown on the Certificate of Compliance.
- **WARNING: DO NOT CHANGE BATTERY IN A HAZARDOUS LOCATION.**
- **WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY.** (May be in User Manual)



RAE
S Y S T E M S

EC DECLARATION OF CONFORMITY

Manufacturer RAE Systems
3775 North First Street
San Jose, CA 95134
USA

Products covered ToxiRAE 3(PGM-1700) Single Gas Monitors

Certification II 1G Ex ia IIC T4

Notified Body DNV (ATEX)
Veritasveien 1
1322 Høvik Norway
NB# 0575

EMC Compliance We hereby declare the above products comply with EMC Directive 204/108/EC, in accordance with standards:
EN 55022 Class B EN 61000-4-2 EN61000-4-3

ATEX Compliance We hereby declare the above products comply with the requirements of the ATEX Directive 94/9/EC. These products have been designed, manufactured and tested in accordance with standards:
EN 60079-0:2006, EN 60079-11:2007 & EN50284:1999
There are no changes required to enable compliance to the replacement standard:
EN 60079-26:2007

Signed 

Name of Signatory Peter Hsi, Chief Technology Officer

Date December 29, 2009



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX DNV 07.0004X** issue No.: **0** Certificate history:

Status: **Current**

Date of Issue: **2007-10-30** Page 1 of 4

Applicant: **Rae Systems Inc**
3775 North First Street
San Jose CA95134
United States of America

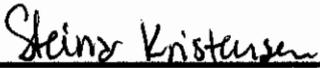
Electrical Apparatus: **Personal Toxic Gas Monitor: ToxiRAE 3 model PGM-1700**
Optional accessory:

Type of Protection: **Ex ia IIC T4**

Marking: **Ex ia IIC T4**
-20C ≤ Tamb ≤ +60C

Approved for issue on behalf of the IECEx Certification Body: **Steinar Kristensen**

Position: **Certification Manager**

Signature: *(for printed version)* 

Date: 31/10-2007

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DNV
Det Norske Veritas (DNV) Certification AS
Veritasveien 1
1322 Hovik
Norway





IECEX Certificate of Conformity

Certificate No.: IECEx DNV 07.0004X

Date of Issue: 2007-10-30

Issue No.: 0

Page 2 of 4

Manufacturer: **Rae Systems Inc.**
3775 North First Street
San Jose CA95134
United States of America

Manufacturing location(s):
**RAE Systems (Shanghai)
Inc**
No. 788 Zhaoxian Road,
JiaDing District,
Shanghai 201821
China

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacture's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2004 Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
Edition: 4.0

IEC 60079-11 : 2006 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"
Edition: 5

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

NO/DNV/ExTR07.0005/00

Quality Assessment Report:

NO/DNV/QAR06.0003/00
NO/DNV/QAR06.0004/00



IECEx Certificate of Conformity

Certificate No.: IECEx DNV 07.0004X

Date of Issue: 2007-10-30

Issue No.: 0

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

ToxiRAE 3 is a personal single gas monitor for continuously display of toxic gas concentrations, STEL, TWA and Peak values as well as high, low STEL and TWA alarms. The physical dimensions are 85mm x 54 x 20mm without clip. The weight is 100g. It is small handheld and battery powered, housed in a dark conductive plastic back, stainless steel/PC front partially covered with a soft thermoplastic electrically conductive material. Audible and visual alarm indicators are included. The visual alarm comprises an Red/Green LED bar visual from the top. An imbalanced motor produces a vibration alert when in alarm mode. An infrared communication port allows galvanic isolated data transfer between the handheld instrument and a PC.

CONDITIONS OF CERTIFICATION: YES as shown below:

It is a condition of safe use that the apparatus must be powered by non rechargeable cells of the following type only. EVE ER14335 Lithium-thionyl Chloride, Size 2/3AA, 3.6 Volts



IECEX Certificate of Conformity

Certificate No.: IECEx DNV 07.0004X

Date of Issue: 2007-10-30

Issue No.: 0

Page 4 of 4

EQUIPMENT(continued):

Nomenclature for ToxiRAE 3 type for each sensor type:

Sensor type	ToxiRAE 3 – Model No
CO	PGM1700 CO
H ₂ S	PGM1700 H2S
NH ₃	PGM1700 NH3
CO	PGM1700 CO2000
Cl ₂	PGM1700 CL2
ClO ₂	PGM1700 CL02
HCN	PGM1700 HCN
H ₂ S	PGM1700 H2S1000
NO	PGM1700 NO
NO ₂	PGM1700 NO2
O ₂	PGM1700 O2
PH ₃	PGM1700 PH3
SO ₂	PGM1700 SO2
HF	PGM1700 HF
HCl	PGM1700 HCL
CH ₃ SH	PGM1700 CH3SH
ETO	PGM1700 ETO
O ₃	PGM1700 O3