

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV GL SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

That the Portable Oxygen analysis and gas detection equipment

with type designation(s)
Portable Gas Monitor GX-3R & GX-3R Pro

Issued to
RIKEN KEIKI Co., Ltd.
Itabashi-ku, Tokyo, Japan

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2020/1170,**
item No. MED/3.30. SOLAS 74, Regulation II-2/4, VI/3, XI-1/7, FSS Code 15 and
MSC.1/Circ.1477, IMO MSC.1/Circ.1581.

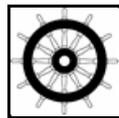
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2025-12-06.**

Issued at **Hamburg** on **2020-12-07**

DNV GL local station:
Yokohama

Approval Engineer:
Didier Girardin



Notified Body
No.: **0098**

for **DNV GL SE**

Christine Mydlak-Roeder
Head of Notified Body

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU. This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL SE of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled. Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Portable Gas Monitor GX-3R/3R Pro is a gas monitor designed to measure the combustible gases (LEL), oxygen (O₂), hydrogen sulfide (H₂S), and carbon monoxide (CO). The GX-3R Pro can additionally measure toxic gases ¹⁾ including carbon dioxide and sulfur dioxide (CO₂ and SO₂). The gas sampling is by diffusion. The model does not have internal suction pump. Li-ion battery unit BP-3R (for GX-3R) and BUL-3R (for GX-3R Pro) are for power supply.

[GX-3R]

Detection target gas	HC or CH ₄	O ₂	CO	H ₂ S
Detection principle	New ceramic type	Electrochemical type	Electrochemical type	Electrochemical type
Detection range <Service range>	0 - 100.0 %LEL	0 - 25.0 vol% < - 40.0 vol%>	0 - 500 ppm < - 2000 ppm>	0 - 100.0 ppm < - 200.0 ppm>
1 digit	1 %LEL	0.1 vol%	1 ppm	0.1 ppm

Power supply	Lithium ion rechargeable battery unit [BP-3R]
Dimensions	Approx. 58mm (W) × 65mm (H) × 26mm (D) (excluding protrusions)
Weight	Approx. 100g
Operating Temp.	-20 °C to +50 °C (no sudden changes) (at a constant condition)
Ingress proof rating	IP68

[GX-3R Pro]

Detection target gas	HC or CH ₄	O ₂	CO	H ₂ S
Detection principle	New ceramic type	Electrochemical type	Electrochemical type	Electrochemical type
Detection range <Service range>	0 - 100.0 %LEL	0 - 25.0 vol% < - 40.0 vol%>	0 - 500 ppm < - 2000 ppm>	0 - 100.0 ppm < - 200.0 ppm>
1 digit	1 %LEL	0.1 vol%	1 ppm	0.1 ppm
Detection target gas	SO ₂ ¹⁾	CO ₂ ¹⁾		
Detection principle	Electrochemical type	Infrared type		
Detection range <Service range>	0 - 5.00 ppm < - 10.00 ppm>	0 - 5.00 vol% < - 10.00 vol%>	0 - 10000 ppm	
1 digit	0.05 ppm	0.01 vol%	20 ppm	

Power supply	Lithium ion rechargeable battery unit [BUL-3R]
Dimensions	Approx. 73mm (W) × 65mm (H) × 26mm (D) (excluding protrusions)
Weight	Approx. 120g
Operating Temp.	-20 °C to +50 °C (no sudden changes) (at a constant condition)
Ingress proof rating	IP68

Note: ¹⁾ Toxic gas detection not part of MED/3.30 homologation as documented by present certificate.

Place of manufacture

RIKEN KEIKI Co., Ltd.
 2-3.Minamisakae-cho, Kasukabe
 SAITAMA, JAPAN 344-0057

Application/Limitation

- Thermal shock test and Oil resistance test in accordance with IEC 60945 : 2002 (Ed.4) additionally carried out (see report No. 20-284(E) dated 2020.11.19 and 20-329(E) dated 2020.12.03 and 20-334(E) dated 2020.12.04).
- The equipment is compliant with following DNVGL location Class and application:
 - EMC-A : All locations except bridge and open deck (IEC 60092-504 (2016) table 1 item 15-20)
 - Enclosure D: (IP68) (Location according ref. IEC 60529:2001)
 - VIB-A : General applications (ref. IEC 60092-504 (2016) table 1 item 10)
 - TEMP-C : Location (-25°C to +45°C) (ref. IEC 60092-504 (2016) table 1 item 6-7),
 - Compliant with IACS UR E10 Rev, 07
- Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/Special Condition for Safe Use listed in valid Ex-Certificate issued by a notified/recognized Certification Body.
 The following paragraph provided for information only, is based on information received from the manufacturer, but not verified by DNV GL.

Information on Ex-Certification received from manufacturer – Not verified by DNV GL		
Equipment	Certified	Certificate No.
[GX-3R] [GX-3R Pro]	⊕ II 1 G Ex da ia IIC T4 Ga or Ex ia IIC T4 Ga and I M1 Ex da ia I Ma or Ex ia I Ma, -40°C to +60°C	DEKRA 17ATEX0103 X

- Each Equipment delivery to be provided with installation and user manual.

Type Examination documentation

Hidden

DEKRA 17ATEX0103 X issued by DEKRA Certification B.V. Issuing date 2020.07.07

Report	Issuing date	Drawings
No. 20-260(E)	2020.11.10	M3-4777-14-01K
No. 20-261(E)	2020.11.10	M3-4777-14-02K
No. 20-281(E)	2020.11.18	M3-4777-15-01K
No. 20-282(E)	2020.11.17	M3-4777-15-02K
No. 20-283(E)	2020.11.11	M3-4777-15-03K
No. 20-284(E)	2020.11.19	M3-4777-15-04K
No. 20-329(E)	2020.12.03	E4-6991-5797-70-01K
No. 20-334(E)	2020.12.04	E4-6991-5798-40-01K
No. 382-180023-1	2018.08.10	
No. 382-180023-2	2018.08.10	
No. 400-2000035	2020.08.31	
No. 400-2000036-1	2020.08.31	
No. 200989-1	2020.10.14	
No. 200989-2	2020.10.14	
No. 41500120P	2020.07.30	

Job Id: **344.1-011097-1**
Certificate No: **MEDB000074D**

Tests carried out

IEC 60945:2002 incl. IEC 60945 Corr. 1: 2008,
IEC 60092-504:2016,
IEC 60533:2015,

Category 2: (explosive gas atmospheres):

- EN 50104:2010,
- EN 60079-29-1:2016,
- EN IEC 60079-0:2018,
- EN 60079-11:2012

Marking of product

For identification to this type examination certificate the products shall be marked with:

- Manufacturer's name or trademark
- Type designation
- Mark of Conformity (see front page)

END OF CERTIFICATE