



## 1. EC-TYPE EXAMINATION CERTIFICATE

2. **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3. EC-Type Examination Certificate Number: **ITS10ATEX17055X**

4. Equipment or Protective System: **FA-165EX Range**

5. Manufacturer: **Pharos Marine Ltd**

6. Address: **6 Steyning Way, Hounslow, Middlesex, TW4 6DL**

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. Intertek Testing and Certification Limited, notified body number 0359 in accordance with Article 9 of the 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 Intertek Report 10045816, parts A1 & B1, dated 27 September 2010.

9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with standards EN60079-0:2009 and EN60079-1:2007 except in respect of those requirements referred to at item 18 of the Schedule.

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 protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12. The marking of the equipment or protective system shall include the following:-

II 2 G Ex d IIB T5 T<sub>amb</sub>-40°C to +55°C Gb\*  
T<sub>amb</sub>-20°C to +55°C Gb\*

\* dependant on model

**P Moss**  
Certification Officer  
30 September 2010

**Intertek Testing & Certification Limited**  
Deeside Lane, Chester, CH1 6DD  
Tel: + 44 (0)1244 882590 Fax: +44 (0)1244 882599  
<http://www.intertek.com>  
Registered No 3272281 Registered Office: 25 Savile Row London W1X 1AA

This certificate may only be reproduced in its entirety and without any change, schedule included and is subject to Intertek Testing and Certification Conditions for Granting Certification.



13. SCHEDULE
14. EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS10ATEX17055X
15. Description of Equipment or Protective System

The FA-165EX is a flameproof enclosure with a glass dome that can contain various light sources as well as other electronic equipment. The models covered by this certificate are as follows:

Model No	Description	Max Internal Power Dissipation
FA-165EX 01	Helideck Perimeter Light	40W
FA-165EX 02	Aviation Obstruction Light	40W
FA-165EX 03	Xenon Light	40W
FA-165EX 04	Helideck Status Light Repeater	40W
FA-165EX 05	Spot Light	40W
FA-165EX 06	Wireless Synchronization Unit	40W
FA-165EX 07	Rectangular Spotlight	40W
FA-165EX 08	Flood Light	40W
FA-165EX 09	Multi-colour Spot Light	40W
FA-165EX 10	Photocell Unit	40W
FA-165EX 11	Transformer Unit	40W
FA-165EX 12	Power Supply Unit	40W
FA-165EX 13	LED Light	40W
FA-165EX 14	Directional Light	40W

The enclosure consists of a cast aluminium base (A360) into which is housed the light/electronic modules. Onto this is fitted a dome assembly which consists of a glass dome cemented into an aluminium ring housing forming a cemented flamepath. A flange flamepath is formed between the dome assembly ring and the enclosure base which is then secured using six M10x1.5 hex socket head fasteners. Cable entry is via two M25x1.5 threaded holes which will be fitted with suitably certified cable glands or blanking elements. Both internal and external earthing points are provided via M6 threaded studs with associated nuts and locking washers.

16. Report Number:  
Intertek Report 10045816 parts A1 & B1, dated 27 September 2010.
17. CONDITIONS OF CERTIFICATION:
  - (a). Special Conditions for safe use
    - i. No modifications must be made to the flamepaths of the unit without consultation of the drawings listed below.
    - ii. Temperatures could exceed 70°C at the cable gland or 80°C at the branching point, suitably rated cable must be selected.
    - iii. Potential electrostatic charging hazard – clean glass dome only with a damp cloth.
    - iv. For securing glass dome cover to base use only M10x1.5 hex socket head fasteners with yield stress  $\geq 450\text{N/mm}^2$ .

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13. SCHEDULE
14. EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS10ATEX17055X

(b). Conditions For Use (Routine Tests)

A routine overpressure test in accordance with EN 60079-1:2007 shall be carried out on each enclosure (including the cemented glass dome assembly) at the following pressure and must be recorded. There shall be no leakage through the cement and no deformation or damage to the enclosure:

For lower ambient of -20°C – ≥10.16bar

For lower ambient of -40°C – ≥14.73bar

18. Essential Health and Safety Requirements (EHSR's)

The relevant EHSR's have been identified and assessed in Intertek Report 10045816, part C1, dated 27 September 2010.

19. Drawings and Documents

Number	Title	Issue	Date
Wc50139	FA-165 Ex Nameplate	C	17/6/10
Yc77260	General Arrangement FA-165 Ex Zone 1	4	9-14-10
Yc77261	FA-165 Ex Varients	A	20/8/10
Yc77264	Glass Dome Cover	2	8-20-2009
Yc77265	Body Machining	13	8-17-2009
Yc77266	Dome Retention Clip	1	3-15-2010
Yc77267	Lid Machining	4	8-19-2009

*This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.*

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# 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](http://www.iecex.com)

Certificate No.: **IECEX ITS 10.0041X** issue No.: **0** Certificate history:

Status: **Current**

Date of Issue: **2010-09-30** Page 1 of 3

Applicant: **Pharos Marine Ltd**  
6 Steyning Way  
Hounslow  
Middlesex  
TW4 6DL  
United Kingdom

Electrical Apparatus: **FA-165EX Range**  
Optional accessory:


Type of Protection: **Flameproof**

Marking: **Ex d IIB T5 Tamb -40C to +55C Gb\***  
**Tamb -20C to +55C Gb\***  
**\* dependant on model**

Approved for issue on behalf of the IECEX Certification Body: **P Moss**

Position: **Certification Officer**

Signature:  
(for printed version)

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**30<sup>th</sup> Sep 2010.**

Date:

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:

**Intertek Testing & Certification Limited**  
ITS House, Cleeve Road,  
Leatherhead,  
Surrey, KT22 7SB  
United Kingdom

**Intertek**



# IECEX Certificate of Conformity

Certificate No.: IECEx ITS 10.0041X

Date of Issue: 2010-09-30

Issue No.: 0

Page 2 of 3

Manufacturer: **Pharos Marine Ltd**  
6 Steyning Way  
Hounslow  
Middlesex  
TW4 6DL  
**United Kingdom**

**Manufacturing location(s):**

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 manufacturer'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 : 2007-10** Explosive atmospheres - Part 0: Equipment - General requirements

Edition: 5

**IEC 60079-1 : 2007-04** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"

Edition: 6

*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:

GB/ITS/ExTR10.0039/00

Quality Assessment Report:

GB/ITS/QAR10.0017/00



# IECEX Certificate of Conformity

Certificate No.: IECEx ITS 10.0041X  
Date of Issue: 2010-09-30 Issue No.: 0  
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## Schedule

### EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The FA-165EX is a flameproof enclosure with a glass dome that can contain various lights as well as other electronic equipment. The models covered by this certificate are as follows:

Model No	Description	Max Internal Power Dissipation
FA-165EX 01	Helideck Perimeter Light	40W
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FA-165EX 12	Power Supply Unit	40W
FA-165EX 13	LED Light	40W
FA-165EX 14	Directional Light	40W

The enclosure consists of a cast aluminium base (Type A360) into which is housed the light/electronic modules. Onto this is fitted a dome assembly which consists of a glass dome cemented into an aluminium ring housing forming a cemented flamepath. A flange flamepath is formed between the dome assembly ring and the enclosure base which is then secured using six M10x1.5 hex socket head fasteners. Cable entry is via two M25x1.5 threaded holes which must be fitted with suitably certified cable glands or blanking elements. Both internal and external earthing points are provided via M6 threaded studs with associated nuts and locking washers. Dimensions: Overall Height = 149.81mm, Base Diameter = 252.48mm.

### CONDITIONS OF CERTIFICATION: YES as shown below:

- (a). Special Conditions for safe use
- No modifications must be made to the flamepaths of the unit without consultation of the drawings listed on IECEx Ex Test Report Cover GB/ITS/ExTR10.0039/00.
  - Temperatures could exceed 70°C at the cable gland or 80°C at the branching point, suitably rated cable must be selected.
  - Potential electrostatic charging hazard – clean glass dome only with a damp cloth.
  - For securing glass dome cover to base use only M10x1.5 hex socket head fasteners with yield stress  $\geq 450\text{N/mm}^2$ .
- (b). Conditions For Use (Routine Tests)
- A routine overpressure test in accordance with EN 60079-1:2007 shall be carried out on each enclosure (including the cemented glass dome assembly) at the following pressure and must be recorded. There shall be no leakage through the cement and no deformation or damage to the enclosure:
- For lower ambient of -20°C – 10.16bar  
For lower ambient of -40°C – 14.73bar



## Test Verification of Conformity

On the basis of the tests undertaken, the sample of the below product has been found to comply with the requirements of the referenced specifications at the time the tests were carried out.

**Applicant Name & Address** : **Pharos Marine Ltd  
Steyning Way  
Hounslow  
TW4 6DL  
UK**

**Product Tested** : **Flameproof Enclosure with Glass Dome**

**Ratings and principal characteristics** : **Glass dome cemented to cover and then cover secured to base using six M10x20mm stainless steel hex head fasteners. Groove in flange of base fitted with o-ring. Base contains two M25 cable entries fitted with certified IP66 blanking elements for test purposes.**

**Model(s)** : **FA165-Ex**

**Relevant Standard/Specification** : **EN60529:1992 IP66  
IEC60529:2001 Ed 2.1**

**Verification Issuing Office Name & Address** : **Intertek Testing & Certification Limited  
Deeside Lane, Chester, CH1 6DD**

**Verification/Report Number(s)** : **11055815**

**NOTE : This verification is part of the full test report(s) and should be read in conjunction with it.**

This Verification is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Verification. Only the Client is authorized to copy or distribute this Verification. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results referenced from this Verification are relevant only to the sample tested. This Verification by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.



**Signature**

**Paul Moss  
Certification Officer  
06 September 2012**