CERTIFICATE NUMBER
15-LD1364539-1-PDA

DATE
29 Aug 2015

ABS TECHNICAL OFFICE
London Engineering Department

CERTIFICATE OF DESIGN ASSESSMENT

This is to certify that a representative of this Bureau did, at the request of

RAYTEC LTD

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: **Lighting Fixtures, LED, Hazardous Area**

Model: **FL12, BL24, FL24, FL48, FL72, WL84 and WL168 (Standard and Emergency version)**

This Product Design Assessment (PDA) Certificate 15-LD1364539-1-PDA, dated 29/Aug/2015 remains valid until 15/Jun/2020 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING

R. Alvarez

Roberto Alvarez
Engineer

RAYTEC LTD
UNIT 3 WANSBECK BUSINESS PARK
ROTARY PARKWAY
ASHINGTON
NORTHUMBERLAND
United Kingdom NE63 8QW
Telephone:
Fax:
Email:
Web: www.raytecled.com

Tier: 3 - Type Approved, unit certification not required

Product: **Lighting Fixtures, LED, Hazardous Area**

Model: **FL12, BL24, FL24, FL48, FL72, WL84 and WL168 (Standard and Emergency version)**

Intended Service:
For use on ABS classed Vessels and Offshore Facilities in accordance with the listed ABS Rules and International Standards.

Description:
The SPARTAN Flood range is designed specifically for hazardous environments which require high performance, high reliability, White-Light illumination. Available in both standard and emergency versions and using Raytec's field-proven, long-life LED technology, SPARTAN floodlights are ATEX and IEC Ex approved for all Zone 1 and Zone 2 applications and rated for T4, T5 and T6 environments.
Spartan FL** Luminaire are four size luminaires available in the range FL12 (small), FL24 (medium), FL48 (large) and FL72 (extra large), and Spartan LED Linear Luminaires are two size luminaires available WL84 (small) and WL168 (large). BL24, Bulkhead is designed for mounting in any orientation using steel brackets at the back of luminaire.
All variants are offered as LV (Low Voltage); rated at 18V to 30V AC / 18V to 40V DC or HV (High Voltage); rated at 110V to 254V AC. The HV luminaires may also be supplied with a battery pack and inverter to enable operation in 'emergency' mode.

Spartan FL** Luminaire, Enclosure: IP66,IP67, Temperature range (-52 to +55 deg)
EX Type and IECEx Certificate (CML 13ATEX3007 issue 9 and IEC EX CML 14.0001 issue 4)
FL12,FL24,FL48, FL72
Ex e mb IIC T6 Gb or Ex e mb IIC T5 Gb or Ex e mb IIC T4 Gb, Ex tb IIIC T 82°C Db
BL24 Bulkhead
Ex e mb IIC T6 Gb or Ex e mb IIC T5 Gb or Ex e mb IIC T4 Gb, Ex tb IIIC T 98°C Db

Spartan LED Linear Luminaires, Enclosure: IP66
EC Type Certificate - Ex e mb IIC T6 Gb or Ex e mb IIC T5 Gb or Ex e mb IIC T4 Gb, Ex tb IIIC T 98°C Db, IEC EX CML 15.0001 issue 2
IECEx Certificate - IEC EX CML 15.0001 issue 1
Standard: Ex e mb IIC T5 Gb, Ex tb IIIC T75°C Db, Ta = -40°C to +55°C / Ex e mb IIC T6 Gb, Ex tb IIIC T65°C Db, Ta = -40°C to +45°C
Emergency: Ex e mb IIC T5 Gb, Ex tb IIIC T76°C Db, Ta = -20°C to +50°C / Ex e mb IIC T6 Gb, Ex tb IIIC T66°C Db, Ta = -20°C to +40°C

All Emergency Variants have a lower ambient of -20 Degree only.

Rating:
LV (Low Voltage); rated at 18V to 30V AC / 18V to 40V DC
HV (High Voltage); rated at 110V to 254V AC110 v to 254 V
Tamb upto -52°C to +55°C

Service Restriction:
Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined. Equipment has been tested to the applicable IEC 60079 series standards by an independent laboratory listed on the United States Coast Guard Maritime Information Exchange Accepted Laboratories list.

RAYTEC LTD
UNIT 3 WANSBECK BUSINESS PARK
ROTARY PARKWAY
ASHINGTON
NORTHUMBERLAND
United Kingdom NE63 8QW
Telephone:
Fax:
Email:
Web: www.raytecled.com

Tier: 3 - Type Approved, unit certification not required

Comments:
The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes/Drawing/Documentation:
Drawing No. 910-M-0094, SPX SPARTAN Floodlight Range - Installation Guide, Revision: D, Pages: -
Drawing No. 910-SD-001, Spartan Led Floodlight Ex Em, Revision: D, Pages: -
Drawing No. 920-SD-0007 rev A sht 3, 920-SD-0007 rev A sht 3, Revision: -, Pages: -
Drawing No. 920-SD-0007 rev B sht 1, 920-SD-0007 rev B sht 1, Revision: -, Pages: -
Drawing No. 920-SD-0007 rev B sht 2, 920-SD-0007 rev B sht 2, Revision: -, Pages: -
Drawing No. 940-SD-0001 rev A, 940-SD-0001 rev A, Revision: -, Pages: -
Drawing No. CML 13ATEX3007 issue 7 FL,BL Spartan SPX, CML 13ATEX3007, Revision: 9, Pages: -
Drawing No. CML 13ATEX3007 issue 7 FL,BL Spartan SPX, CML 13ATEX3007, Revision: -, Pages: -
Drawing No. IECEx CML 14_0001 issue 2 FL,BL Spartan SPX, IECEx CML 14_0001 issue 2, Revision: 2, Pages: -
Drawing No. R705A_00, evaluation report, Revision: -, Pages: -
Drawing No. Spartan extra large flood - FL72, Spartan extra large flood - FL72, Revision: -, Pages: -

Terms of Validity:
This Product Design Assessment (PDA) Certificate 15-LD1364539-1-PDA, dated 29/Aug/2015 remains valid until 15/Jun/2020 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

STANDARDS

ABS Rules:
- Steel Vessel Rules (2015): 1-1-4/7.7, 1-1-A3 & A4; 4-8-3/1.7, 4-8-3/1.9, 4-8-3/1.11.1, 4-8-3/1.17, 4-8-3/13.3.1
- Steel Vessels Under 90 Meters (295 Feet) in Length (2015): 1-1-4/7.7, 1-1-A3&A4; 4-6-1/9, 4-6-1/11, 4-6-1/17.1, 4-6-3/11.1.1 (a)
- Facilities on Offshore Installations (2015): 1-1-4/9.7, 1-1-A2 & A3;
- Offshore Support Vessels (2015): 1-1-4/7.7, 1-1-A3 & A4; 4-8-3/1.7, 4-8-3/1.9, 4-8-3/1.11.1, 4-8-3/1.17, 4-8-3/13.3.1
- Mobile Offshore Drilling Units (2015): 1-1-4/9.7, 1-1-A2 & A3, 6-1-1/9, 6-1-1/13; 4-3-1/9,4.3.1/11, 4-3-1/15
- Steel Vessels for Service on Rivers and Intracoastal Waterways (2015): 1-1-4/7.7, 1-1-A3 & A4; 4-5-1/9, 4-5-1/13, 4-5-1/17, 4-5-1/19, 4-5-3/11.1.1(a)
- High Speed Crafts (2015): 1-1-4/11.9, 1-1-A2 & A3; 4-6-1/11, 4-3-1/15, 4-6-1/9, 4-6-3/9.1.1 (a)
- Steel Barge Rules (2015): 1-1-4/7.9, 1-1-A3 & A4; 4-1-3/5.7

National:
NA

RAYTEC LTD
UNIT 3 WANSBECK BUSINESS PARK
ROTARY PARKWAY
ASHINGTON
NORTHUMBERLAND
United Kingdom NE63 8QW
Telephone:
Fax:
Email:
Web: www.raytecled.com

Tier: 3 - Type Approved, unit certification not required

International:
Spartan LED Linear Luminaire
EN 60079-0:2012, EN 60079-7: 2007, EN 60079-18:2009, EN 60079-31: 2009
IEC 60079-0 Ed.6.0: 2011, IEC 60079-7 Ed.4.0: 2006-07, IEC 60079-18 Ed.4.0: 2012 , IEC 60079-31 Ed.2.0: 2013

Spartan SPX
EN 60079-0:2012+A11:2013, EN 60079-7: 2007, EN 60079-18:2009, EN 60079-31: 2014
IEC 60079-0 Ed.6.0: 2011, IEC 60079-7 Ed.4.0: 2006-07, IEC 60079-18 Ed.4.0: 2012 , IEC 60079-31 Ed.2.0: 2013

Government:
NA

EUMED:
NA

OTHERS:
NA