



Low Location Lighting

Definition of Phosphorescent Low-Location-Lighting

- An Low Location System which uses phosphorescent material.
- Phosphorescent material contains a chemical which has the storage of strong energy when illuminated by visible light source.
- Phosphorescent material emits light which becomes visible when the ambient light source is less effective.
- The phosphorescent material gives off the visible light by stored energy for a period of time.

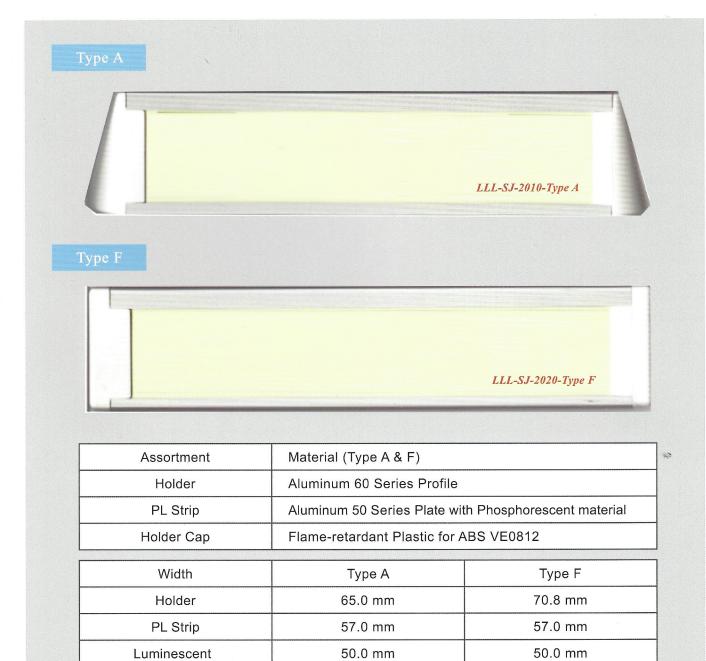
Requirement

 Installation of low location lighting is required to readily identify the route of escape when the normal lighting is less effective due to smoke.

By

- Emergency lighting required by regulations $\, \mathrm{II}$ -1/42 and $\, \mathrm{III}$ /11.5 of the 1974 SOLAS Convention, and
- Resolution A.752(18) adopted on November 1993, Annex
 "Guidelines for Evaluation, Testing and Application of Low-Location-Lighting on passenger ships," and
- ISO 15370 Ships and marine technology-Low Location Lighting(LLL) on passenger ships-Arrangement

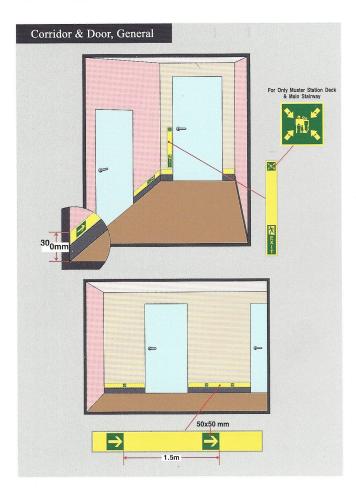
Characteristics of SJ OSL Standard LLL

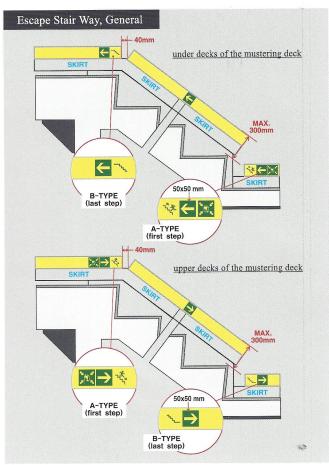


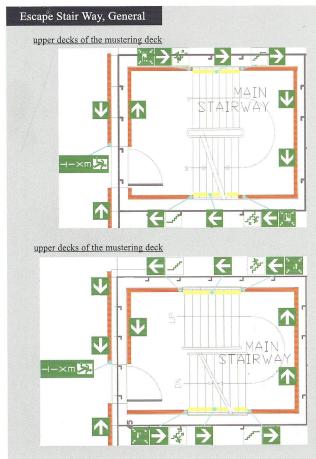
Luminance after Removal of Light Source (mcd/m²)						
Assortment	10 min	20 min	30 min	40 min	50 min	60 min
Criteria	33.75					4.50
SJ Standard	57.00					13.00

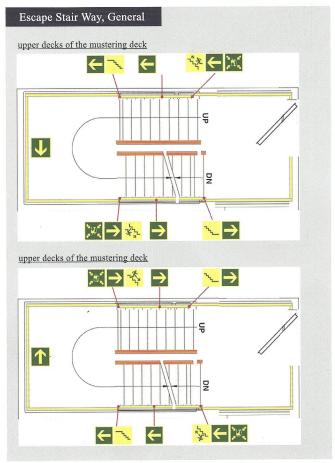
SJ-2010-Type A and SJ-2020-Type F of Sun-Jin OSL Standard Low Location Lighting have been acquired the Type Approval by KR dated 26th Aug 2011, and have been acquired MED Cert by Cert No MED-MB-3008-11 dated 22nd June 2011 for ISO 15370 version 2001 and dated 30th April 2013 for ISO 15370 version 2010.

Typical Sketch for Installation









Documentary Evidence



CERTIFICATE OF APPROVAL



Korean Registe of the above

KS Q ISC

Manufa

Locations : Head Auditor : J. D

> Subject to 1 Management



The KAB Accreditation
 KR Certification Center



TYPE APPROVAL CERTIFICATE

Certificate No. :BS :Lo

Manufacturer : Su

Product

Product Description : Bra

Approval Condition: Se

THIS IS T in accordance with the rela standards as follows and Equipment"

Pt.8, Ch.4 of the Rules for

This Certificate is valid un Issued at Daejeon, Korea o

AC-2A(2011.06)

KR HELLAS LTD.

GR-16671, Athens, Greece TEL: +30-210-428-6736 FAX: +30-210-428-6728



Certificate No: MED- MB-3008-11 MED Item No: A.1/3.40 This consists of 3 pages. Page 1/3

EC TYPE EXAMINATION CERTIFICATE

as per Module B

of European Council Directive 96/98/EC on Marine Equipment (MED)

THIS IS TO CERTIFY that KR Hellas Ltd., designated by the Hellenic Republic of Greece as Notified Body according to Council Directive 96/98/EC on Marine Equipment as amended, did undertake the EC Type Examination procedures for the product identified below according to the following specific standards and that the product is found to meet the specific standards in compliance with the requirements of Annex A.1, Section 1, item No. A.1/3.40 and Annex B, Module B in the Council Directive 96/98/EC as amended by Commission Directive 2011/75/EU:

Manufacturer Name

: Sun Jin O S L Co.

Address : 726-3, Mora-dong, Sasang-gu, Busan, Korea : Low-location lighting systems (components only)

Product Name (A.1 item designation) Product Type

: SJ-LLL-Type A & SJ-LLL-Type F

Specific Standards : SOLAS 1974 as amended,

IMO Reg. II-2/13, IMO Res. MSC.98(73)-(FSS code) 11, IMO Res. A.752(18), ISO 15370(2010)

This certificate is issued at Athens on 22nd June 2011, under the authority of the Hellenic Republic of Greece by KR Hellas Ltd., Notified Body No. 2198.

Reissued at Athens on 17th February 2014.

This certificate is valid until 21th June 2016.



Notified Body No.2198

CEO of KR Hellas Ltd.

Photo View of Installed on onboard



