

Restricted
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2019-07-10

General Specification

Tower Light System

ORGA L92-62A 1x4x10 cd 15M



V90-1.8/2.0 MW Mk 8–9
V90-3.0 MW Mk 1–9
V100-1.8/2.0/2.2 MW Mk 10
V105-3.3/3.45 MW Mk 2–3
V110-1.8/2.0/2.2 MW Mk 10
V112-3.3/3.45 MW Mk 2–3
V116-2.0 MW Mk 11B
V117-3.3/3.45 MW Mk 2–3
V117-4.0/4.2 MW Mk 3E
V120-2.0/2.2 MW Mk 11C
V126-3.3/3.45 MW Mk 2–3
V136-3.45 MW Mk 3
V136-4.0/4.2 MW Mk 3E
V150-4.0/4.2 MW Mk 3E
V150 5.6MW EnVentus
V162 5.6MW EnVentus

Version no.	Date	Description of changes
00	2019-07-10	New document

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1 Abbreviations and technical terms

Abbreviation	Explanation
EMC	Electromagnetic compatibility
OVP	Overvoltage protection
SCADA	Supervisory Control and Data Acquisition

Table 1-1: Abbreviations

Terms	Explanation
None	

Table 1-2: Terms

2 Introduction

This document specifies the Tower Aviation Obstruction Light options for Vestas wind turbines. The Vestas Aviation Obstruction Lights are mechanical installation options that are fully integrated with the electrical system and SCADA surveillance system.

3 General description

The Tower Aviation Obstruction Light System contains the following components:

- 1x Tower Lights Control Unit MLC400,
- 1x Junction Box OVP-LI-TOW (overvoltage protection unit),
- 4x Tower lights 10cd (L92-62A),
- Cables for connection of all elements,
- Mounting brackets attached with magnets.

The Tower Light 10cd L92-62A is an aviation obstruction light with low intensity and steady signal type. The Tower Lights are installed around the tower (one row, four tower lights) on brackets that are attached with magnets.

The Tower Lights Control Unit MLC400 is 230 VAC power supplied from the CIP400 unit located in the nacelle. MLC400 is equipped with transformer 230VAC/ 24VDC. The Tower Light is power supplied by 24 VDC.

3.1 Component overview



Figure 3-1: Tower Lights Control unit MLC400 for the Tower Lights, up to 8 pieces.



Figure 3-2: Junction box OVP-LI-TOW (with overvoltage protection) for max. 4 Tower Lights.



Figure 3-3: Tower lights 10cd (L92-62A).

3.2 Cables

- Power cable from CIP to MLC: 3x2.5 mm².
- Profibus data cable from CIP to MLC is 1x2x0.25 mm².
- Power cable from MLC to junction box OVP-LI-TOW is 4x2x0.5 mm².
- 15m power cable from junction box OVP-LI-TOW to the Tower Light L92-62A: 3x2x0.5 mm².

3.3 Tower Aviation Obstruction Light System data

Parameters	Value
Vestas item number	29153059
Vestas type description	KIT SET AL TOW 1-4-BM-L92-62A
Supplier type description	TLS-1-4-100-BM-L92-62A
Standard	ICAO
Intensity day	N/A
Intensity twilight	N/A
Intensity night	10 cd
Colour day	N/A
Colour twilight	N/A
Colour night	Red
Flash characteristic day	N/A
Flash characteristic twilight	N/A
Flash characteristic night	Steady
Horizontal beam pattern (min.)	120°
Lamp type	LED
Lamp input voltage	24V
Input frequency	DC
Power consumption	2W each light
Overvoltage protection class	Class II
Operating temperature range (°C)	-40° to +55°C
Environmental protection rating	IP66
Corrosion Class (according to ISO 9223)	C5
Dimensions of the lamp itself in mm (H x W x D)	170 x 95 x 95
Weight (kg) with the bracket	Approx. 4,4 each light

Table 3-1: Technical data

3.4 Mounting brackets

The Tower Obstruction Lights are installed on a tower wall with the use of supporting brackets, which uses magnets to mount it on the tower. Mounting provision for the light allows to mount lamp on the magnetic bracket. The supporting brackets for the Tower Aviation Obstruction Lights are designed and developed specifically for the wind turbine. Proper bonding/ grounding for EMC & lightning together with wind loads, weights are taken into account. The brackets are included in a delivery.

3.5 Alarm

The Tower Aviation Obstruction Light send an alarm signal through a profibus connection which can be detected and used in the CIP400.

3.6 Key features

- One level of the Tower Aviation Obstruction Light System contains of 4 Tower lights (L92-62A, 10cd) of low intensity and brackets.
- Power and data shielded cables.
- Tower light controlled integration with the CIP400 unit.
- OVP built-in control panel.

3.6.1 Tower Lights Control Unit MLC 400

One Tower Lights Control Unit MLC400 is installed for the whole Tower Lights System. MLC400 is equipped with 8 output channels – one Control Unit is able to power supply 8 Tower Lights.

MLC400 provides individual Tower Light monitoring status reported on the CIP controller.

3.6.2 Junction Box OVP-LI-TOW

One OVP-LI-TOW can power supply maximum four Tower Lights. Main function is to provide additional over voltage protection to the separate Tower Light channel. OVP-LI-TOW is equipped with two DEHN BSP M4 BD 24 class II over voltage protection units.

4 Lightning protection

The Tower Aviation Obstruction Light System meets or exceeds normal industry EMC and lightning standards. In addition to high test standards the unit has a built-in OVP.

5 Dimensions

See Figure 5-1 for the dimensions of the Tower Lights (L92-62A, 10cd).

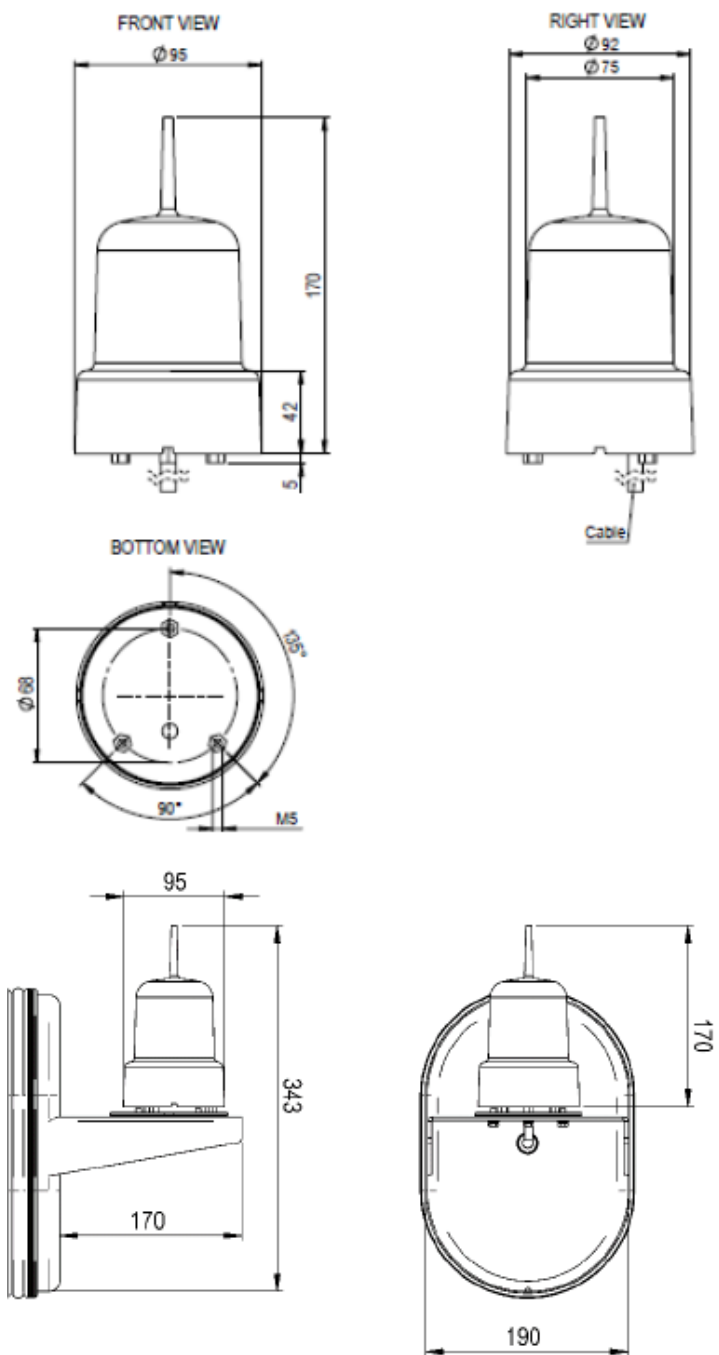


Figure 5-1: Tower Light L92-62A 10cd.

6 Example configuration for the Tower Light System

See Figure 6-1 for the example system overview.

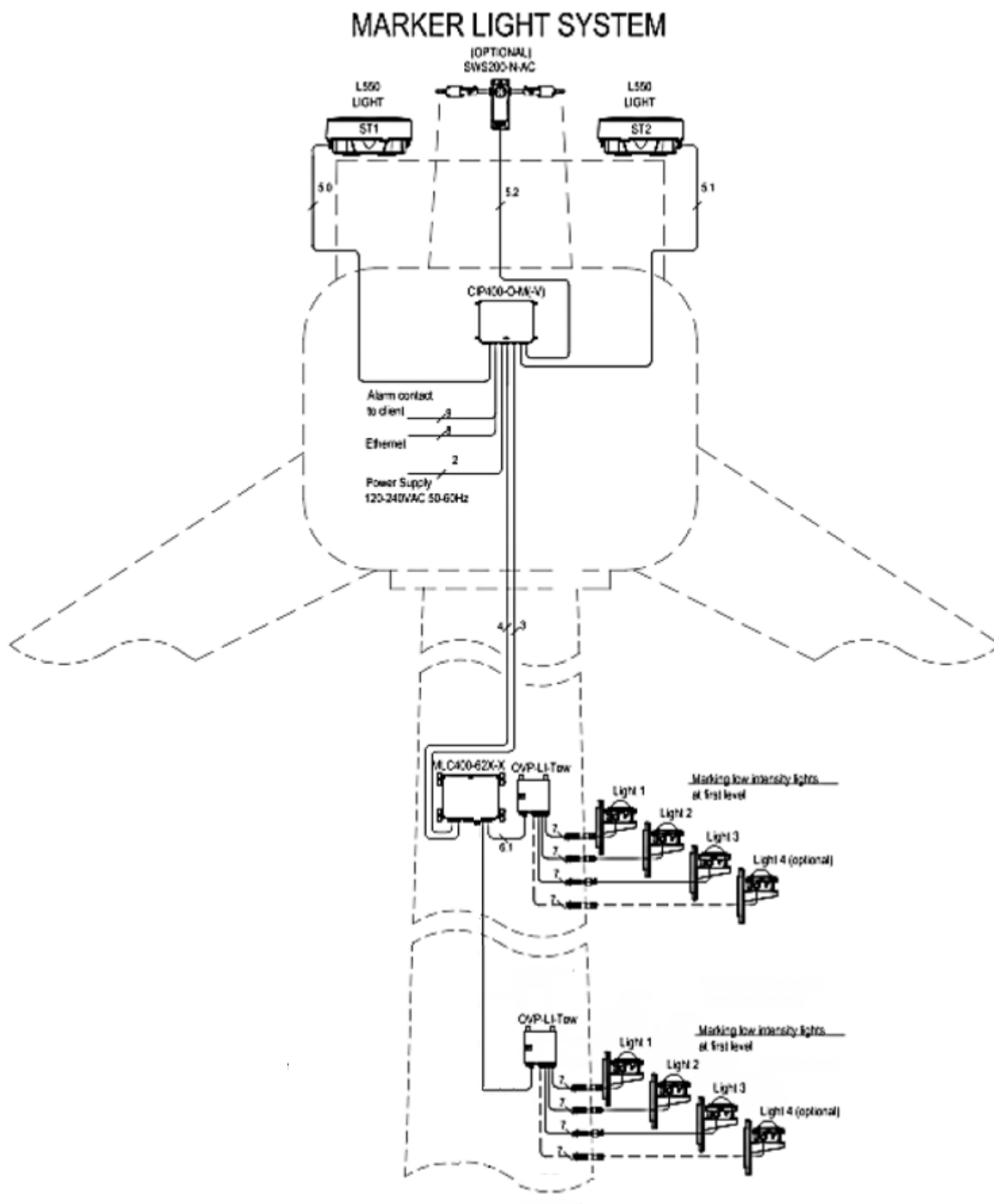



Figure 6-1: Example configuration for the Tower Light System with two rows and four Tower Lights per level.

7 Certificates and test reports

This document is made in accordance with the ICAO standard.

EU-Declaration of Conformity



Wij, Orga BV, verklaren geheel onder eigen verantwoordelijkheid dat het product
 We, Orga BV, declare under sole responsibility that the product

MARKER LIGHT CONTROLLER type MLC400

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 IEC 61000-6-4 : 2018
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In overeenstemming met de volgende (bepaling(en) (indien van toepassing):
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LOW VOLTAGE DIRECTIVE: 2014/35/EU

RoHS-RICHTLIJN: 2011/65/EU
RoHS-DIRECTIVE: 2011/65/EU

Schiedam, 30/07/2019


P. Voorwald-Snijder
 Compliance Manager



EG047 MLC400_R04

Orga BV
 Strickledeweg 13
 3125 AT Schiedam
 The Netherlands

Postal address
 P.O. Box 3046
 3101 EA Schiedam
 The Netherlands

+31 (0)10 208 5555
+31 (0)10 437 8445

info@orga.nl
www.orga.nl



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Wij, Orga BV, verklaren geheel onder eigen verantwoordelijkheid dat het product
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- NEN-EN-IEC 61439-1 : 2011
- NEN-EN-IEC 61439-2 : 2011
- NEN-EN 50581 : 2012

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LOW VOLTAGE DIRECTIVE: 2014/35/EU

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RoHS-DIRECTIVE: 2011/65/EU


P. Voorwald-Snijder
Compliance Manager

Schiedam, 30/07/2019



EG034 OVP...R02

Orga BV
Strickledeweg 13
3125 AT Schiedam
The Netherlands

Postal address
P.O. Box 3046
3101 EA Schiedam
The Netherlands

+31 (0)10 208 5555
+31 (0)10 437 8445

info@orga.nl
www.orga.nl



EU-Declaration of Conformity

Wij, Orga BV, verklaren geheel onder eigen verantwoordelijkheid dat het product
We, Orga BV, declare under sole responsibility that the product

AERONAUTICAL OBSTRUCTION LIGHT type L92

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ROHS DIRECTIVE: 2011/65/EC

Orga BV
Strickledeweg 13
3125 AT Schiedam
The Netherlands

Postal address
P.O. Box 3046
3101 EA Schiedam
The Netherlands

+31 (0)10 208 5555
+31 (0)10 437 8445

info@orga.nl
www.orga.nl


P. Voorwald-Snijder
Compliance Manager

Schiedam, 30/07/2019



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