
INTENSA

MRM0230

MRM0340

MRM0380

MRM0625

**INTERIOR & EXTERIOR
LED LIGHT**



Operating Instructions

ASTEL
MARINE

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PREFACE

The INTENSA series of compact LED lights with electronic driver built-in waterproof anodized aluminium casing is designed by using 2, 3 or 6 high-power LEDs with built-in microprocessor which enables network connections and remote control with digital dimming. Advanced optical systems with reflector and holographic diffuser allows perfect light spread with different color temperature options for interior and exterior.

The multi-color RGBW models offer the best illumination quality of different white lighting and microprocessor-controlled changing of white and all other colors of lighting manually or automatically through the complete rainbow spectrum. The light is designed to adjust the requested white lighting in 21 steps.

Due to wide range of prestige massive face shapes made of aluminium or stainless steel the INTENSA is suitable to fit on both luxury yachts and superyachts.

The most advanced LED technology enables extremely low power consumption and very long lifetime with high-performance lighting.

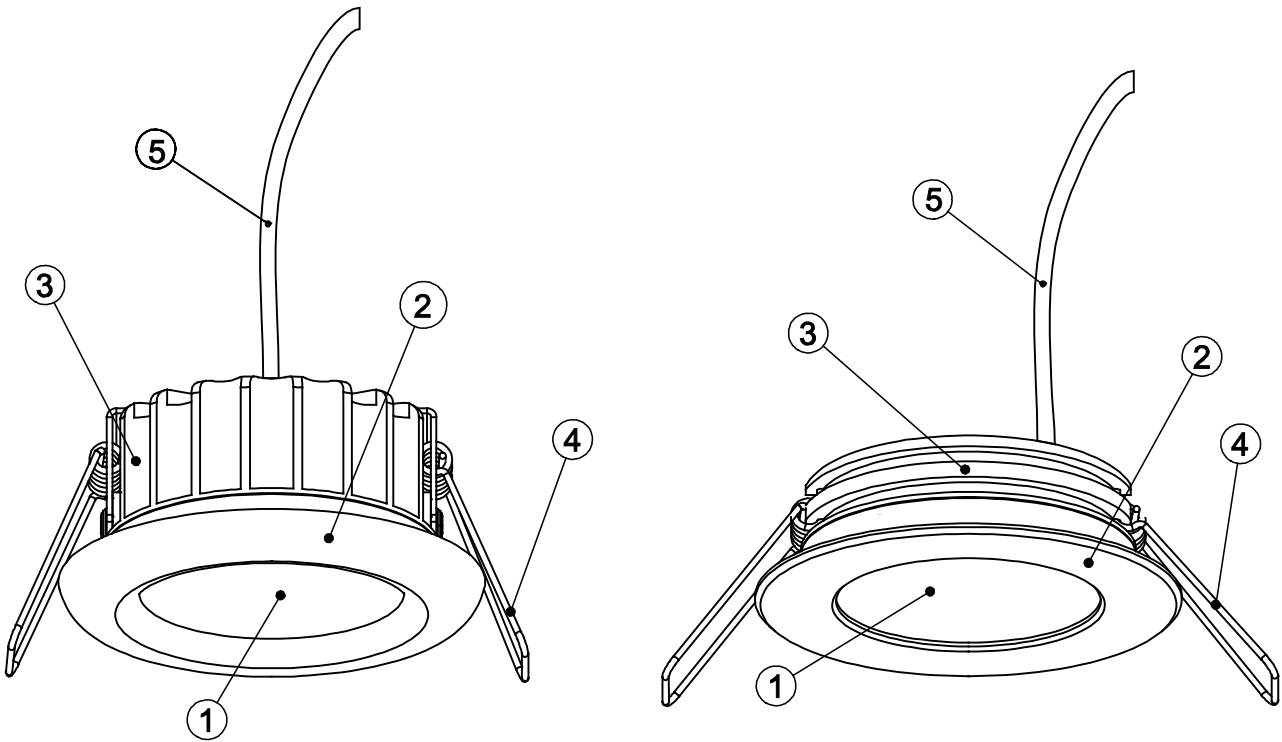
FEATURES

- Innovative Design
- Anodized Aluminium Casings
- 2, 3 or 6 Power LEDs Design
- Different Face Shapes and Finishes
- White, Blue, Green, Red or Multi-Color RGBW Lighting
- Reflector with Holographic Diffuser
- Microprocessor Control
- Digital Dimming
- Built-in ASTEL Protocol for DMX512 Control of Multi-Color RGB version
- Polarity Protection
- Transient Protection
- Thermal Protection
- Wide Range Power Supply
- Low Power Consumption
- Simple Installation

PRECAUTIONS

- The interior & exterior light has to be installed and used in accordance with the instructions of this manual only.
- The power supply has to be disconnected before installation.
- Avoid using this unit near appliances generating strong magnetic fields.
- The optical window has to be cleaned with a mild soap or detergent and lukewarm water by using a soft cloth or sponge. Do not use abrasive or highly alkaline cleaners. Never scrape with razor blades or other sharp instruments. Benzene, leaded gasoline, acetone or carbon tetrachloride should never be used.
- Do turn power off immediately and refer servicing to qualified service personnel if the interior & exterior light does not operate normally following the operating instructions.

COMPONENTS AND CONNECTORS



(1) Optical window

High-Grade Polycarbonate Glass Optical Window with Holographic Diffuser.

(2) Face shape

Massive face shape made of aluminium or stainless steel.

(3) Interior & exterior light casing

Aluminium casing.

(4) Holding springs

Holding springs (2x) to fix the interior & exterior light on the flat surface.

(5) Cable

The 2-pole or 3-pole multi-core cable to connect the 12-24Vdc power supply and control.

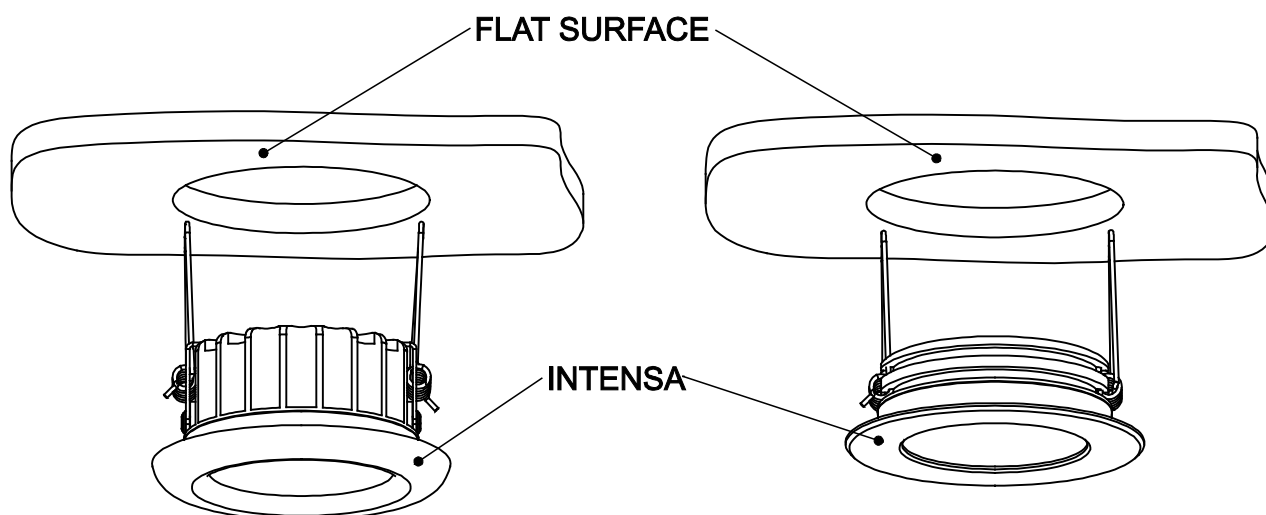
INSTALLATION

The interior & exterior light kit consists of the following components:

- Interior & Exterior Light INTENSA series
- Operating Instructions with Declaration of Conformity and Warranty conditions

The INTENSA has to be installed on a flat surface of ceiling or wall.

The installation has to be realized by a qualified personnel.



Surface preparation

The interior & exterior light is recommended to be installed on the location to allow the best illumination and lighting effects.

The diameter of the hole drilled through the board to insert and to fix the interior & exterior light has to be 68mm.

Fixing

The interior & exterior light has to be inserted through the hole from outside of the board and fixed with two holding springs.

Note:

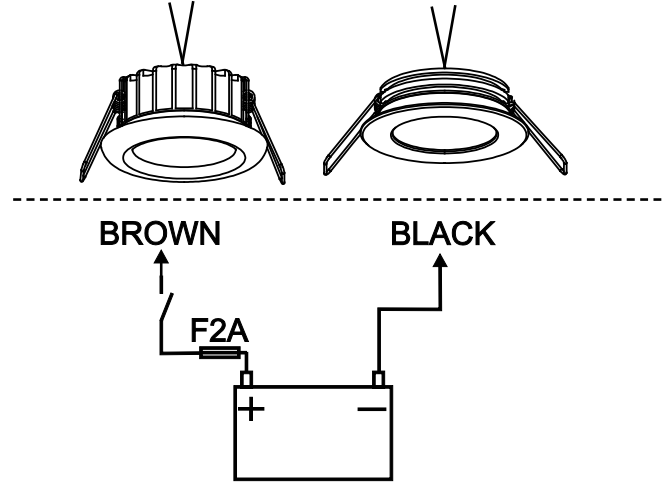
- ***Do not cover the interior & exterior light body with any kind of temperature isolating material.***
The interior & exterior light is protected by a temperature sensor against over-heating. When the temperature of the interior & exterior light exceeds 85°C the interior & exterior light is automatically switched off.

CONNECTION

The power supply has to be connected through the switch (not included) with correct polarity and protected by a fuse (not included). The power supply voltage range has to be from 10 - 30Vdc.

2-wire internal dimming

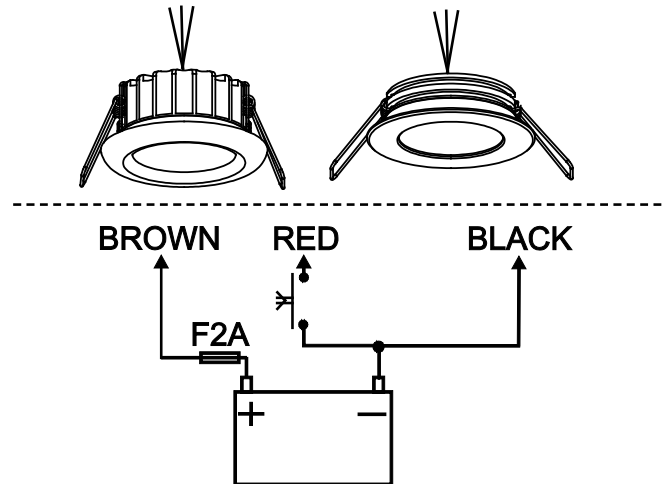
The interior & exterior light has to be connected as described in the table below:



INTENSA wire color	FUNCTION
Brown	+ DC Power Supply
Black	GND Power Supply

3-wire external control

The interior & exterior light has to be connected as described in the table below:



INTENSA wire color	FUNCTION
Brown	+ DC Power Supply
Black	GND Power Supply
Red	Control

The control of the unit has to be connected through the momentary switch (not included) to the GND by using a 2-pole signal cable extension. (not included)

When two or more interior & exterior lights are connected the control wires (red) can be connected in parallel and all the lights controlled by using only one momentary switch.

Optional MXU01 or MXU03 interfaces can be connected to the CONTROL and GND wires by using a 2-pole signal cable (not included).

CONTROLS

INTERNAL DIMMING

Single-color models MRM0230, MRM0340 and MRM0380 with internal (I) dimming control:

The dimming of interior & exterior light can be controlled by using the on/off switch. (not included)

Turning on

Press the switch to on position.

Turning off

Press the switch to off position.

Dimming

Follow the procedure to set the dimmer:

- (1) Turn the light on
- (2) Turn the light off-on quick and wait until light lights at full power
- (3) Turn the light off-on quick and wait until light lights at full power
- (4) Turn the light off-on quick and wait until light lights at desired power
- (5) Turn the light off when the light lights at desired power
- (6) Wait for a moment
- (7) Turn the light on and the light is now adjusted to the desired power

EXTERNAL CONTROL

Single-color models MRM0230, MRM0340 and MRM0380 with external (E) dimming control:

The dimming of interior & exterior light can be controlled by using the additional momentary switch. (not included)

Turning on / off

Press the momentary switch momentary.

Dimming

When the light is on, press the momentary switch longer until the desired power is achieved.

Turning on minimum

When the light is off, press the momentary switch longer (e.g. one second or more) until the light is turned on at minimum power.

Set default

Press the momentary switch for min. 40 seconds or until the light is turned off.

DMX512 control

The built-in ASTEL protocol enables the network connection to control the lights with the standard DMX512 protocol by using optional ,XU01 or MXU03 interfaces.

Multi-color model MRM0625 with external (E) control:

The multi-color RGBW interior & exterior light can be controlled by using the additional momentary switch. (not included).

When the light is turned-off the color or mode of lighting can be changed sequentially by pressing the momentary switch for 2 seconds:

INTENSA MRM0625 Sequence of lighting
Custom Color
Full RGB
Cool White
Bluish White
Red
Green
Blue
White Color Spectrum
Custom White Color
Rainbow Color Spectrum

Turning on /off

Press the momentary switch shortly.

Changing the color or mode of lighting

When the light is turned-off press the momentary switch for 2 seconds.

Setting the Custom White Color

At the selected White Color Spectrum mode press the momentary switch shortly to turn the light off. After that press the momentary switch for 5 seconds or until the light is switched to the selected white color and then the White Color is set and selected.

Setting the Custom Color

At the selected Rainbow Color Spectrum mode press the momentary switch shortly to turn the light off. After that press the momentary switch for 5 seconds or until the light is switched to the selected color and then the Custom Color is set and selected.

Dimming

When the light is turned-on press the momentary switch until the desired illumination is achieved. By another pressing of the momentary switch the luminosity will increase to the maximum illumination.

Set default

Press the momentary switch for min. 40 seconds or until the light is turned off.

Synchronization

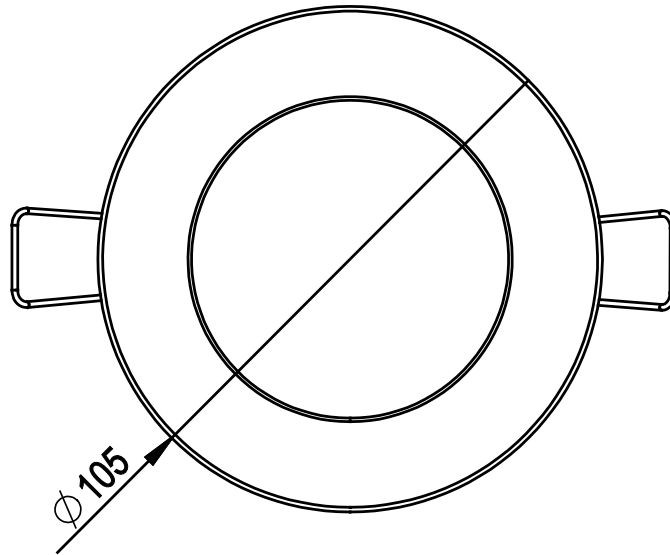
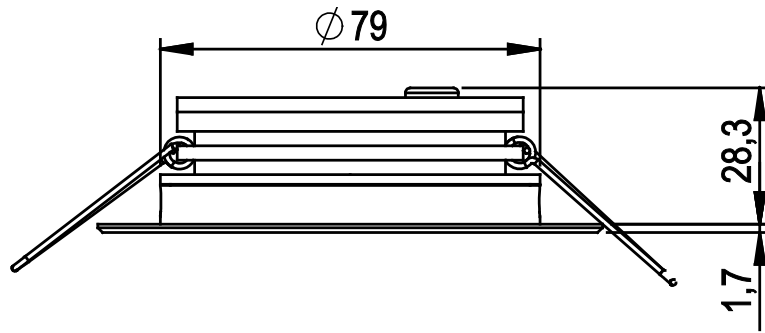
When more than one multi-color underwater light is connected to the system the optional Synchronization Unit LSU08 is recommended to synchronize the colors of lighting at the Rainbow Color Spectrum mode of lighting. On the other case the colors of all installed lights would not be the same after few minutes or hours of operation in the Rainbow Color Spectrum mode.

If the multi-color light is used only with one of the fixed color of lighting the synchronization is not necessary.

DMX512 control

The built-in ASTEL protocol enables the network connection to control the lights with the standard DMX512 protocol by using optional MXU01 or MXU03 interfaces.

APPEARANCE



TECHNICAL SPECIFICATIONS

INTENSA MRM0230

<i>Power supply</i>	12 – 24 Vdc, max. 500 mA/12 Vdc or 260 mA/24 Vdc
<i>Reflector angle</i>	130°
<i>Optical window</i>	High-grade polycarbonate glass
<i>Luminous flux</i>	max. 530 lm (daylight white)
<i>White color temperature</i>	4500K (daylight) or 3000K (warm)
<i>Casing</i>	Black anodized aluminium
<i>Dimensions</i>	Φ105mm x 30mm
<i>Mounting hole</i>	Φ79mm x 29mm
<i>Weight</i>	Aluminium front shape 190 Stainless steel front shape 250g

INTENSA MRM0340

<i>Power supply</i>	12 – 24 Vdc, max. 800 mA/12 Vdc or 420 mA/24 Vdc
<i>Reflector angle</i>	130°
<i>Optical window</i>	High-grade polycarbonate glass
<i>Luminous flux</i>	max. 800 lm (daylight white)
<i>White color temperature</i>	4500K (daylight) or 3000K (warm)
<i>Casing</i>	Black anodized aluminium
<i>Dimensions</i>	Φ105mm x 30mm
<i>Mounting hole</i>	Φ79mm x 29mm
<i>Weight</i>	Aluminium front shape 190 Stainless steel front shape 250g

INTENSA MRM0380

<i>Power supply</i>	12 – 24 Vdc, max. 800 mA/12 Vdc or 420 mA/24 Vdc
<i>Reflector angle</i>	130°
<i>Optical window</i>	High-grade polycarbonate glass
<i>Luminous flux</i>	max. 1.300 lm (daylight white)
<i>White color temperature</i>	4500K (daylight) or 3000K (warm)
<i>Casing</i>	Black anodized aluminium
<i>Dimensions</i>	Φ105mm x 30mm
<i>Mounting hole</i>	Φ79mm x 29mm
<i>Weight</i>	Aluminium front shape 190 Stainless steel front shape 250g

INTENSA MRM0620

<i>Power supply</i>	12 – 24 Vdc, max. 650 mA/12 Vdc or 350 mA/24 Vdc
<i>Reflector angle</i>	130°
<i>Optical window</i>	High-grade polycarbonate glass
<i>Luminous flux</i>	max. 550 lm
<i>White color temperature</i>	Adjustable from 2500K to 7500K in 21 steps
<i>Casing</i>	Black anodized aluminium
<i>Dimensions</i>	Φ105mm x 30mm
<i>Mounting hole</i>	Φ79mm x 29mm
<i>Weight</i>	Aluminium front shape 190 Stainless steel front shape 250g

Design and specifications subject to change without notice.

WARRANTY

1. The equipment manufactured by ASTEL d.o.o. is warranted to be free from defects in workmanship and materials under normal use and service.
2. This Warranty is in effect for of two years from the date of purchase by the user. Proof of purchase must be included, to establish that it is inside the warranty period.
3. This Warranty is transferrable and covers the product for the specified time period.
4. In case any part of the equipment proves to be defective, other than those parts excluded in paragraph 5 below, the owner should do the following:
 - (a) prepare a detailed written statement of the nature and circumstances of the defect, to the best of the Owner's knowledge, including the date of purchase, the place of purchase, the name and address of the installer, and the Purchaser's name, address and telephone number;
 - (b) the Owner should return the defective part or unit along with the statement referenced in the preceding paragraph to the warrantor, ASTEL d.o.o., or an authorized distributor, postage/shipping prepaid and at the expense of the Purchaser;
 - (c) if upon the Warrantor's or authorized distributor's examination, the defect is determined to result from defective material or workmanship, the equipment will be repaired or replaced at the Warrantor's option without charge, and returned to the Purchaser at the Warrantor's expense;
 - (d) no refund of the purchase price will be granted to the Purchaser, unless the Warrantor is unable to remedy the defect after having a reasonable number of opportunities to do so. Prior to refund of the purchase price, Purchaser must submit a statement in writing from a professional boating equipment supplier that the installation instructions of the Operating Instructions manual have been complied with and that the defect remains;
 - (e) warranty service shall be performed only by the Warrantor, or an authorized distributor, and any attempt to remedy the defect by anyone else shall render this warranty void.
5. There shall be no warranty for defects or damages caused by faulty installation or hook-up, abuse or misuse of the equipment including exposure to excessive heat, salt or fresh water spray, or water immersion except for equipment specially designed as waterproof.
6. There shall be no responsibility or liability whatsoever on the part of the Warrantor or its employees and representatives for injury to any person or persons, or damage to property, loss of income or profit, or any other consequential or resulting damage or cost which may be claimed to have been incurred through the use or sale of the equipment, including any possible failure or malfunction of the equipment, or part thereof.
7. The Warrantor assumes no liability for incidental or consequential damages of any kind including damages arising from collision with other vessels or objects.

DECLARATION OF CONFORMITY

according to IEC Guide 22 and EN 45014

Manufacturer's Name: ASTEL, Podjetje za projektiranje, proizvodnjo in trgovino, d.o.o.

Manufacturer's Address: Dutovlje 138
6221 Dutovlje
Slovenija

declares that the products

Item, Product Name and Model Number: 1. Interior & Exterior light INTENSA series

conform to the following Product Specifications:

EMC: EN 55015:2006 + A1:2007
EN 61547:1995 + A1:2000 + A2:2009
EN 61547:2009

Safety: EN 60598-2-18:1995/A1:2012
EN 60529:1992+A2:2013

Supplementary Information:

The products herewith comply with the requirements of the following Directives and carry the CE-marking accordingly:

- the Low Voltage Directive 2014/35/EU
- the EMC Directive 2014/30/EU
- the RoHS Directive (EU) 2015/863

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4th November, 2016

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