MLC01

LIGHT CONTROL INTERFACE

Operating Instructions

ASTEL
MARINE

CONTENTS

PREFACE

The Light Control Interface MLC01 provides complete management of Astel protocol lights or any DMX512 compatible lights directly from MFD.
The system supports up to eight independent zones, each of which can be renamed, configured and controlled separately or in synchronized group.

FEATURES

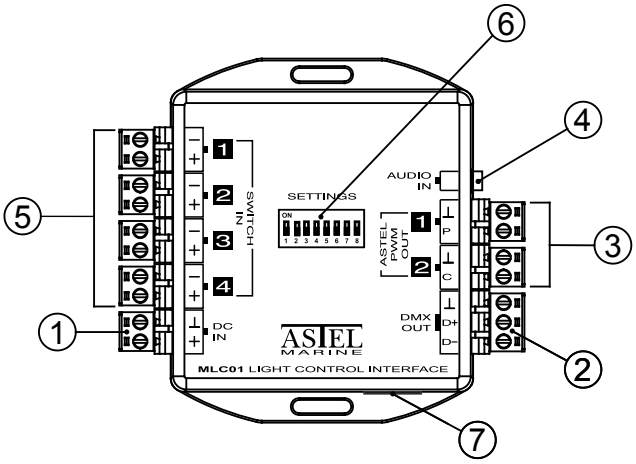
- 2 Astel / PWM Control Outputs
- 1 DMX512 Output
- 4 Switch Inputs
- 1 Audio Input
- Wide Range Power Supply
- Low Power Consumption
- Polarity Protection
- Transient Protection
- Simple Installation
- RJ-45 Ethernet Network connection
- Wi-Fi connection
- Phone, Tablet, PC support
- Compatible with Garmin - OneHelm™ MFD
- Multiple Zone Control
- Intuitive Color Wheel for Lighting Adjustment in Each Zone
- Vertical Sliders for Brightness and White Intensity Adjustment in Each Zone
- Control Lighting Across Multiple Zones with Configurable Buttons
- Pre-programmed Effect Modes like Rainbow Change, Flash or Strobe
- Custom Scenes Activatable via Buttons on Multiple Zones

RECAUTIONS

- The Light Control Interface MLC01 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 installing the The Light Control Interface MLC01 in extremely hot places and near appliances generating strong magnetic fields. Do turn power off immediately and refer servicing to qualified service personnel if the The Light Control Interface MLC01 does not operate normally following the operating instructions.

CONTROLS AND CONNECTORS

LIGHT CONTROL Interface MLC01



(1) DC IN
Terminal-block connector to connect 12-24Vdc power supply.

(2) DMX OUT
Terminal block connector to connect DMX512 line

(3) ASTEL / PWM OUT
Terminal block connectors for direct connection to Astel Marine single or multi color lights

(4) AUDIO IN
Jack 3.5mm connector to connect audio signal.

(5) SWITCH IN
Terminal block connectors for connection up to four physical control switches (SW1–SW4).

(6) SETTINGS
DIP-switches for hardware configuration and service functions:

- **DIP 8 = Factory Reset** (sets the controller back to default configuration).

(7) NETWORK
RJ-45 ethernet connector for connection to MFD Netwotk

INSTALLATION

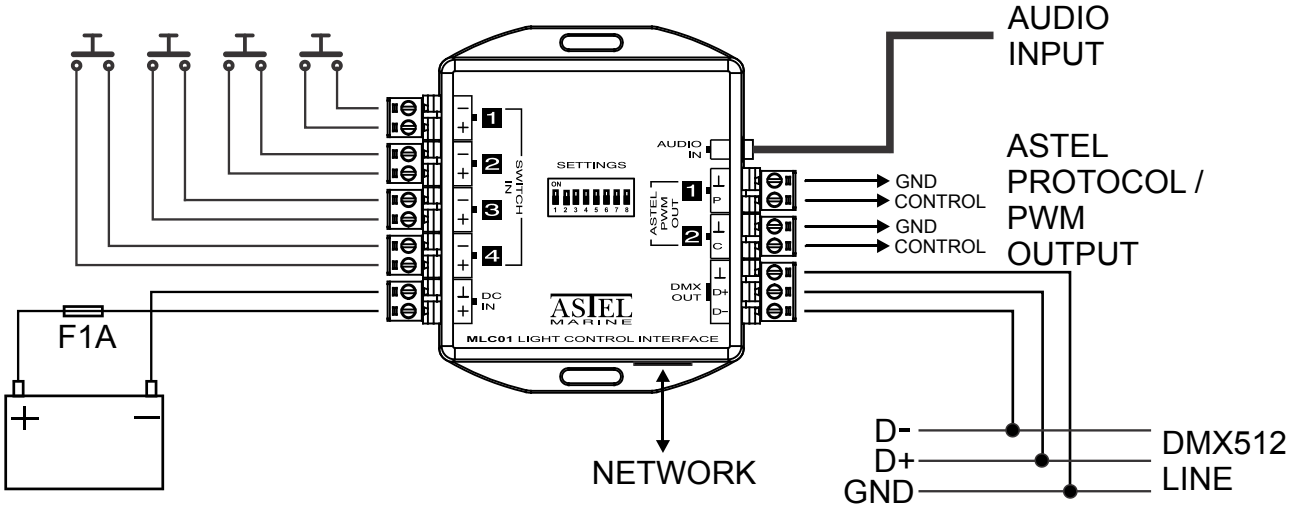
The Light Control Interface MLC01 kit consists of the following components:

- Light Control Interface MLC01
- 8 x terminal-block connectors
- Operating Instructions with Declaration of Conformity and Warranty conditions

The MLC01 has to be installed on a suitable location.
Avoid the installation in extremely hot places and near appliances generating strong magnetic fields.
The installation has to be realized by a qualified personnel.

Note:

- ***The main DC power supply has to be switched off before installation.***



Power supply connection
The power supply has to be connected through the switch (not included) and protected by a fuse (not included) to the DC IN terminal-block connector with correct polarity. The power supply voltage has to be from 10 - 30Vdc.

DMX512 connection
Allows connection to compatible DMX512 lighting fixtures or DMX512 network controllers including Astel Marine / Astel Lighting DMX512 interface MXU01 / LXU01.

ASTEL protocol / PWM connection
Correspond to Astel Output 1 and Astel Output 2, which can be assigned in the CONFIG menu for:
- ASTEL protocol control (data-based signal for Astel protocol lights), or
- PWM dimming (for single-color EQUATOR-series or other compatible LED fixtures).

Each output may be configured independently;

Audio connection
Used when the system operates in Audio Mode, enabling lights to respond to music.
Accepts standard AUX / line-level stereo or mono input.

Switches connection
These external inputs mirror the on-screen switch functions and can be assigned in the CONFIG menu for Master Toggle, Zones Toggle, Zones ON, Zones OFF, or Scene 1–4 recall.
Each switch input is momentary and dry-contact.

Network connection – Ethernet
The Ethernet connection is used to connect the controller to the local network for configuration, control, and integration with other supported systems. Connect a standard Ethernet RJ45 cable from the controller’s LAN port to a network router, switch or MFD.

SET-UP

System Overview

The Light Control Interface MLC01 provides complete management of ASTEL protocol lights or any DMX512 compatible lights.
The system supports up to eight independent zones, each of which can be renamed, configured, and controlled separately or in synchronized group.

Core Features

- Master Power Control – Single button to toggle all lighting outputs.
- Up to 8 Zones – Independently controlled or synchronized.
- Flexible Light Types – Single, RGB, WGB, and RGBW fixtures supported.
- Output Protocols – ASTEL protocol or DMX512.
- PWM Support – Assignable to Astel Output 1 or Output 2 for dimming single-color lights.
- Advanced Modes – Fixed Color, Rainbow, Rainbow (W), Flashing, Strobe, Audio.
- Scenes – Save and recall up to four custom presets.
- Physical Switch Integration – Connect up to four external switches (mirroring SW1–SW4).
- Network Options – Built-in Wi-Fi Access Point or MFD integration.
- Hidden Installer Menu – Protected CONFIG mode for setup.

Main Navigation

The user interface is organized into several tabs:

- Colors – Adjust zone power, color, brightness, and modes.
- Switches – Use or configure system-wide toggles / external switches mapping.
- Audio – Available only if audio mode has been enabled.
- Scenes – Save and recall user presets.
- Config (Hidden) – Access installer setup options.

Master Power Button

- Located in the top-right corner of the interface.
- Function: Instantly toggles all lighting outputs ON or OFF across all zones.

Colors Tab – Zone Control

The Colors tab is the primary interface for adjusting zone-specific lighting.

Zone Selection
- Hold a zone power button → Select that zone for control.
- Tap the button below the zone → Select the zone as well.
- Double-tap a zone power button → Enables Zone Sync, linking multiple zones together so that all adjustments apply to the group.

Zone Naming
- Each zone can be renamed via the CONFIG menu, allowing logical naming such as Underwater, Cockpit or Cabin.

Sliders
- RGBW fixtures:
  - Left slider → Overall brightness.
  - Right slider → White channel intensity.
- RGB, WGB, and Single-color fixtures:
  - Both sliders are synchronized, controlling overall brightness.

Color Selection
- Color wheel – RGB color choice.
- Quick access buttons – Instant red, green, blue, or white selection.

Modes of Operation
- Fixed Color – Maintains a steady chosen color.
- Rainbow – Continuous smooth color cycling (Slow or Fast).
- Rainbow (W) – Rainbow cycling blended with white output (Slow or Fast).
- Flashing – Standard pulsing light effect.
- Strobe – High-frequency flashing effect.
- Audio-Reactive – Available if audio is configured; lights respond dynamically to music input

Switches Tab – System Controls

The Switches tab provides configurable shortcut functions for four switch channels (SW1–SW4) which are directly mapped to physical switches inputs. Each switch can be assigned to one of the following modes:
- Master Toggle – Toggles all outputs ON/OFF simultaneously.
- Zones Toggle – Toggles all active zones together ON/OFF.
- Zones ON – Instantly powers ON all zones.
- Zones OFF – Instantly powers OFF all zones.
- Scene Recall (1–4) – Instantly applies a saved lighting scene.

When controlling from physical switches, a **short press** performs the assigned function, while a **press and hold** dims the controlled zones.

This flexibility allows the installer to configure switches for global control or for scene-based shortcuts depending on user preference.

Audio Tab – Sound Reactive Lighting

The Audio tab is hidden unless audio functionality has been enabled in CONFIG. When active, lighting can be synchronized with sound input such as music.

Controls

- LOW (Red) – Responds to bass frequencies.
- MID (Green) – Responds to midrange.
- HIGH (Blue) – Responds to treble.
- STATIC (White) – Adds a constant brightness overlay to maintain base illumination.
- GAIN Slider – Adjusts overall sensitivity of the audio response.

Calibration

- Toggle Audio OFF → ON to reset calibration.
- Ensure silence during reset for correct baseline detection.

Scenes Tab – Preset Management

The Scenes tab allows storage and recall of up to four preset lighting configurations.

Saving a Scene

1. Adjust the lights to the desired setup.
2. Press the Save Scene button.
3. The Scene buttons (1–4) will light green.
4. Tap the desired Scene button (1–4) to store the configuration.

Recalling a Scene

- Simply tap Scene 1–4 to instantly apply the stored setup.
- Switches SW1–SW4 can also be assigned to directly recall specific scenes.

Config Menu – Installer Settings (Hidden)

The CONFIG menu is hidden by default to prevent accidental changes.

Accessing Config

- **Press and hold the ASTEL logo for 3 seconds**, or
- **Tap the ASTEL logo 5 times quickly**.
- The **CONFIG button** will appear in the top-right corner.

Network Configuration

- **Default Access Point credentials:**
  - SSID: **Astel_Marine**
  - Password: **mlc01astel**

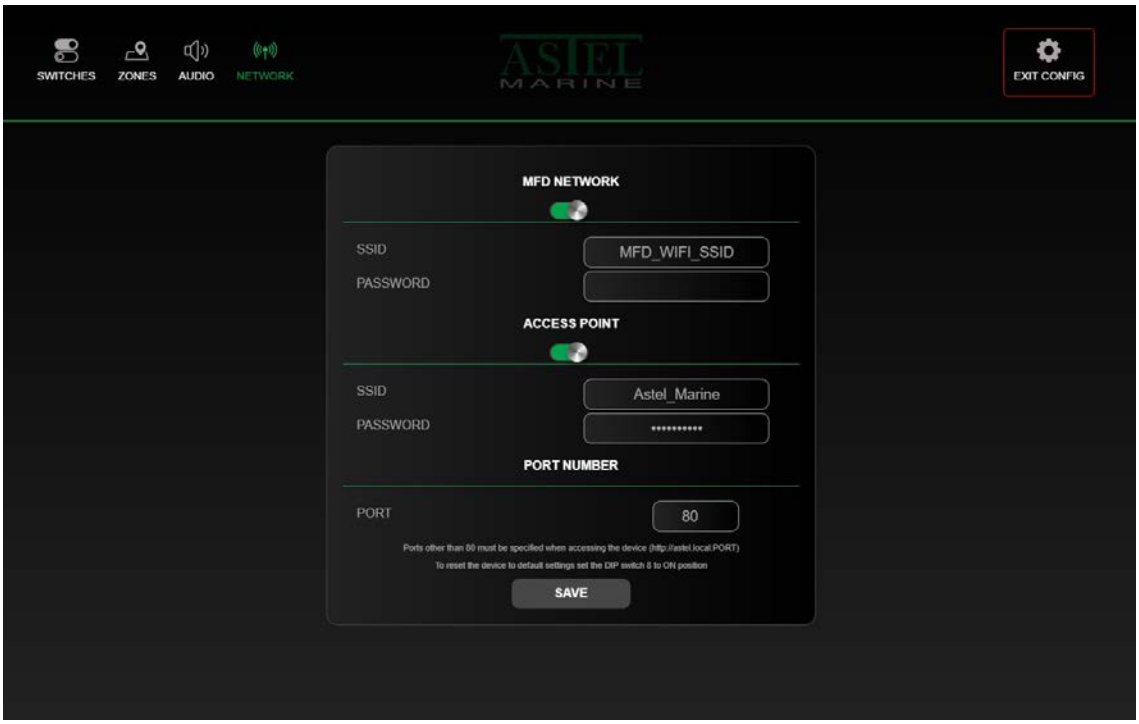
- Configure **MFD Network** (integration with onboard multifunction displays).

- Configure **Access Point** Mode for direct Wi-Fi control.

- Configure **Port Number** - *Ports other than 80 must be specified when accessing the device (http://astel.local:PORT)*

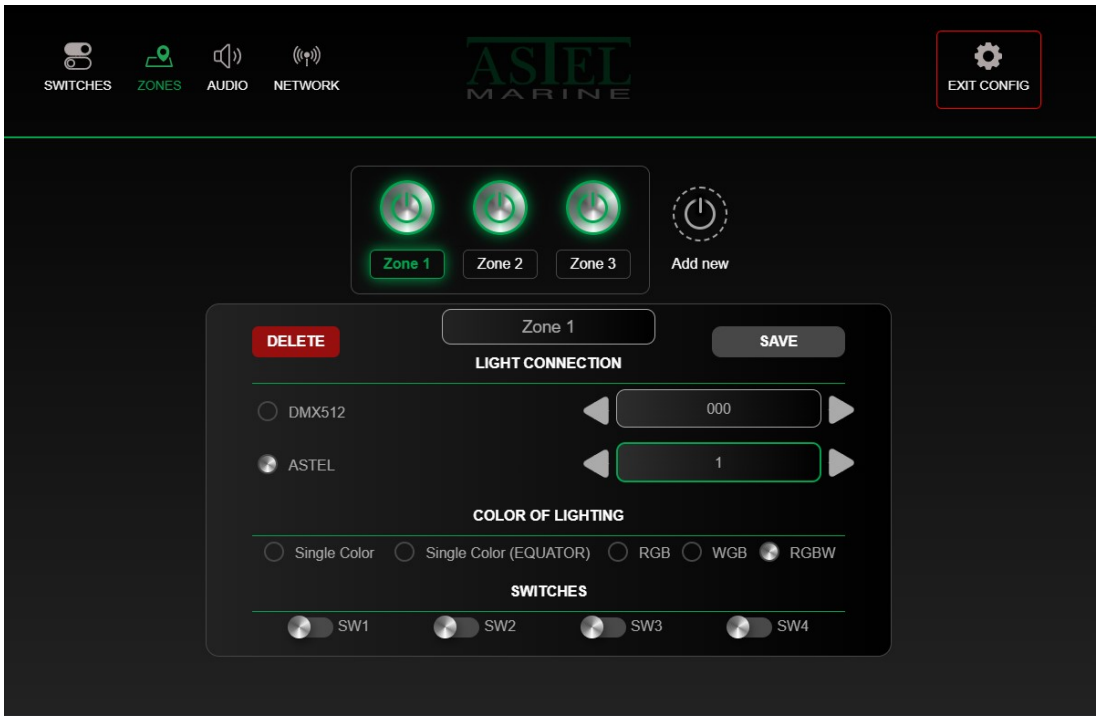
- **Factory Reset:**
  Activate by setting **DIP switch 8 to ON**, then **power the device OFF and back ON**.
  After restoring power, **wait approximately 30 seconds** for the system to complete the reset and become ready for connection.

  Once the reset procedure is complete, DIP 8 needs to be returned to OFF position. All configuration settings will be restored to factory defaults, including network parameters (SSID = Astel_Marine / Password = mlc01astel).



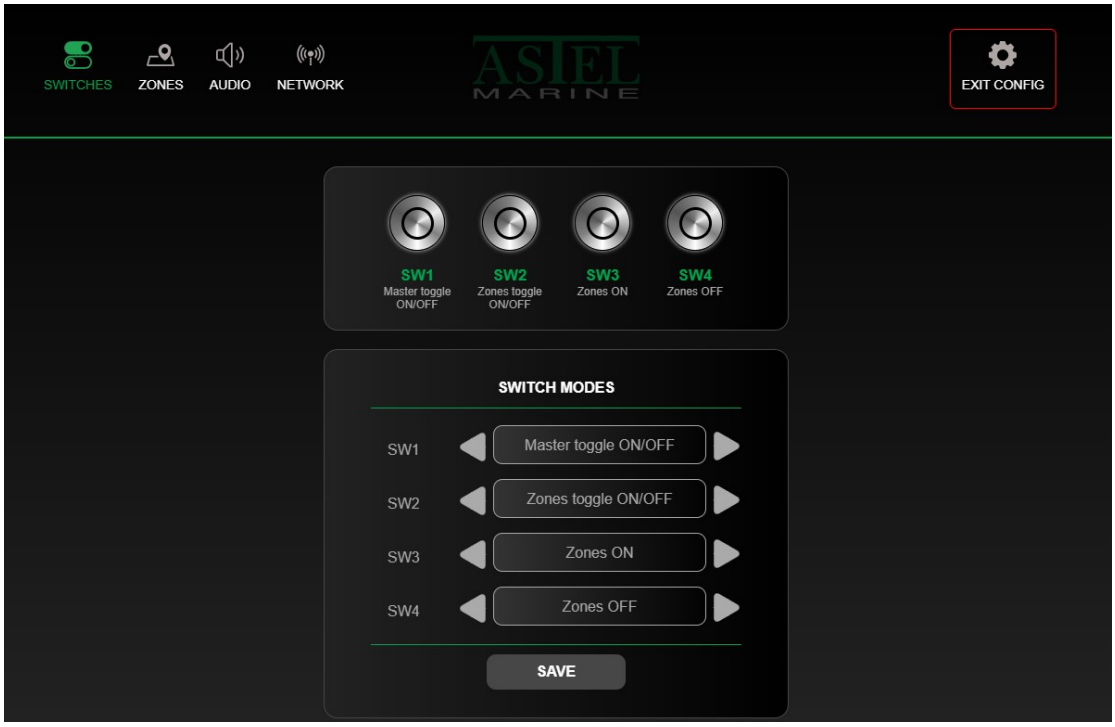
Zones Configuration

- Add up to **8 independent zones**.
- Rename zones using the text field.
- Select **output protocol** for each zone:
  - **ASTEL Protocol**
  - **DMX512**
- Select **fixture type**: Single Color, Single Color (EQUATOR), RGB, WGB, RGBW.
- **PWM dimming for Single Color (EQUATOR) fixtures:** Can be assigned only on **ASTEL Output 1** or **ASTEL Output 2** (hardware-level setting).
- Assign zones to specific switches if required.



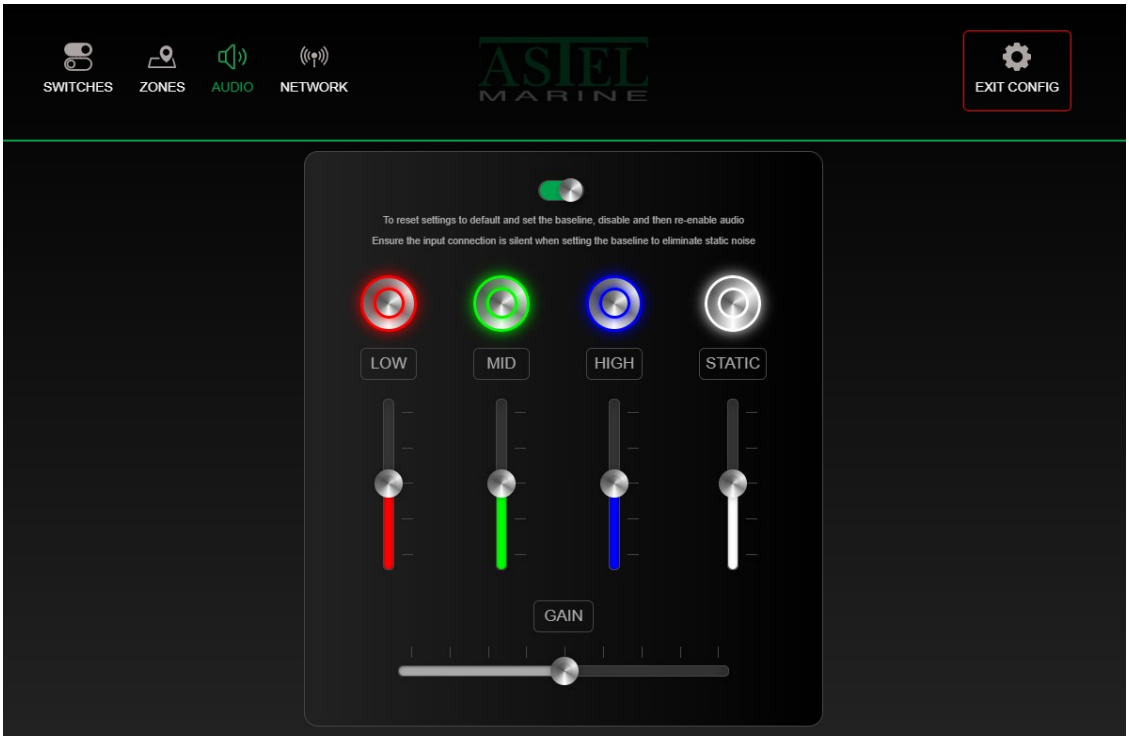
Switches Configuration

- SW1–SW4 functions can be reassigned to Master Toggle, Zones control, or Scene recall.

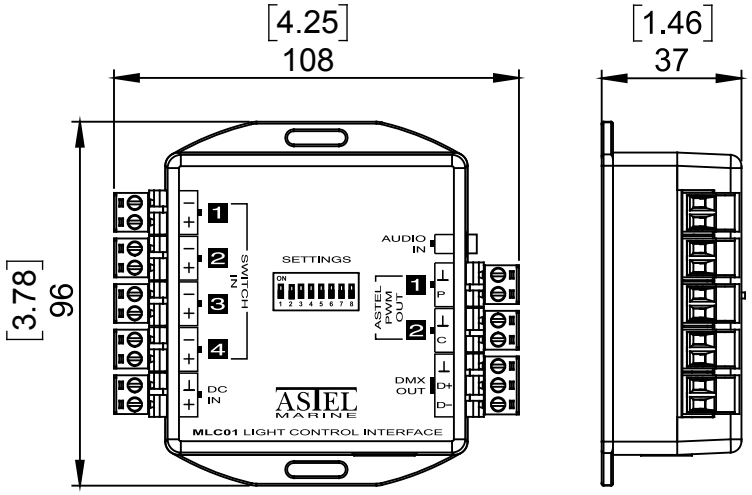


Audio Configuration

- Enable/disable audio mode.
- Adjust calibration and response.



APPEARANCE



TECHNICAL SPECIFICATIONS

Input voltage	12-24 Vdc
Consumption	max. 300 mA
Operating temperature	-10°C - +50°C
Casing	ABS
Dimensions	max. 96x108x37mm / 3.78''x4.25''x1.46''
Weight	0.3 kg / 0.7 lbs

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 od 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 adress of the installer, and the Purchaser's name, adress 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 coused 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. Light Control Interface MLC01

conform to the following Product Specifications:

EMC:	EN 55103-1:2009+A1:2012
Safety:	EN 62368-1:2014

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

ASTEL d.o.o.
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Dutovlje, 30th September 2025

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