

LED Driver

EUCO ARENA SPORT 1.6KW Series



EUCO ARENA SPORT

Highlights & Features

- 3 independent programmable output channels
- Configurable channel address mode (1*DT6 / 1*DMX or 3*DT6 / 3*DMX)
- Max. output power 1650W (3x550W/channel)
- Input voltage range: 187~528VAC
- High Efficiency up to 97.5%
- Programmable output current range 700-2000 mA
- Output voltage range 150-550Vdc per channel
- Built-in 2 in 1: DALI-2 & D4i and RDM/DMX communication protocols
- Wide dimming range 0.1%-100%
- Low current ripple (typ.1%) suitable for HDTV broadcasting
- Strobe effects up to 33 fps
- After-glow effect free
- Common output design(V1+=V2+=V3+)
- Constant Lumen Output (CLO)
- Smart Timer Dimming (STD)
- High-accuracy integrated power metering
- Max remote distance up to 300 meters
- Input surge protection: DM 10kV / CM 10kV

Standards & Marks



Model Number: EUCO-1K6200GCA□□

Unit Weight: ~5.6kg

Dimensions (L × W × H): 500x152x77 mm

General Description

The EUCO-1K6200GCA series is a constant current IP66 LED driver with 3 independent programmable channels, that operates with an input voltage range of 187~528Vac. It is specially designed for Sports Lighting applications but also for many other lighting applications, including industrial, high mast, and horticulture, etc. The dimming control supports two-way communication via DALI-2 & D4i, and it also incorporates RDM/DMX dimming function. This driver was specifically conceived and intended to offer remarkably high efficiency to achieve substantial energy savings. Additionally, a wide dimming range, advanced control, and smart timer dimming (STD) ensure adaptability for dynamic atmospheres and seamless scenes adjustments. The EUCO-1K6200GCA driver offers a remote-control function, allowing the driver to be installed up to 300 meters from the luminaire, which provides greater flexibility in installation, operation, and easy maintenance.

Model Information

| Model Number | Input Voltage Range | Rated Output Power | Output Channel ¹ | Control Interface ² |
|----------------|--|--------------------|-----------------------------|--------------------------------|
| EUCO-1K6200GCA | 208~480Vac (nominal) 187~528Vac (range) | 1650W | 3 | DALI-2 & D4i, and RDM/DMX |

1. The driver has been configured for single address mode by default, the user can also switch to other channel address modes through the GUI and programming tools.
2. The split DALI and DMX interface terminals are mounted in the junction box.

Model Numbering

| EU | C | O | - | 1K6 | □□□ | G | C | A | □□ |
|-------------|------------------|---------|---|------------------------|--------------------------------|-------------|---------------------------------------|------------------------|---------------------------------|
| Market Code | Constant Current | Outdoor | / | Output power 1K6:1650W | Max. Output Current 200:2000mA | Programming | Function C: DALI-2 & D4i, and RDM/DMX | Variable: A - Standard | Mode series: 0~9, A~Z or blank. |

LED Driver

EUCO ARENA SPORT 1.6KW Series

Specifications

Input Ratings / Characteristics

| Specification | Min. | Typ. | Max. | Test Conditions / Notes |
|---------------------------|--------|---------|--------|---|
| Nominal Input Voltage | 208Vac | - | 480Vac | |
| Input Voltage Range | 187Vac | - | 528Vac | |
| Nominal Input Frequency | - | 50/60Hz | - | |
| Input Frequency Range | 47Hz | - | 63Hz | |
| Nominal Input Current | - | 7.8A | - | At 220Vac, 25°C, 500V/1.2A @ Pout=1650W |
| | - | 6.2A | - | At 277Vac, 25°C, 500V/1.2A @ Pout=1650W |
| | - | 4.3A | - | At 400Vac, 25°C, 500V/1.2A @ Pout=1650W |
| | - | 3.6A | - | At 480Vac, 25°C, 500V/1.2A @ Pout=1650W |
| Efficiency ³ | - | 96.6% | | At 220Vac, 25°C, 500V/1.2A @ Pout=1650W |
| | - | 97.0% | | At 277Vac, 25°C, 500V/1.2A @ Pout=1650W |
| | - | 97.3% | | At 400Vac, 25°C, 500V/1.2A @ Pout=1650W |
| | - | 97.2% | | At 480Vac, 25°C, 500V/1.2A @ Pout=1650W |
| Standby Power Consumption | - | - | 0.5W | At 230Vac/50Hz, Output and DALI bus power supply are in OFF status, in compliance with Erp(EU) 2019/2020 |
| Power Factor | - | 0.99 | - | At 220Vac/50Hz, 25°C, 1650W output |
| | - | 0.99 | - | At 277Vac/60Hz, 25°C, 1650W output |
| | - | 0.98 | - | At 400Vac/50Hz, 25°C, 1650W output |
| | - | 0.97 | - | At 480Vac/60Hz, 25°C, 1650W output |
| Total Harmonic Distortion | - | 8% | | At 220Vac/50Hz, 25°C, 1650W output |
| | - | 8% | | At 277Vac/60Hz, 25°C, 1650W output |
| | - | 11.5% | | At 400Vac/50Hz, 25°C, 1650W output |
| | - | 13.5% | | At 480Vac/60Hz, 25°C, 1650W output |
| Inrush Current | - | 8A | - | At 220Vac, 50%Apk to 50%Apk time: 2ms |
| | - | 9A | - | At 277Vac, 50%Apk to 50%Apk time: 2ms |
| | - | 12A | - | At 400Vac, 50%Apk to 50%Apk time: 2ms |
| | - | 14A | - | At 480Vac, 50%Apk to 50%Apk time: 2ms |
| Power metering accuracy | - | ±1% | ±2% | At 208Vac~480Vac, Voltage, current, PF, frequency, active power, apparent power, etc. on the AC side, Full load |

3. 100% Load and tested after 30 minutes warming up.

Output Ratings / Characteristics

| Specification | Min. | Typ. | Max. | Test Conditions / Notes |
|-----------------------------------|-------|--------|--------|--|
| Output Channels | - | 3 | - | 3 independent and individually controllable output channels, and single address for all channels by default. |
| Total Output Power | - | - | 1650W | All channels |
| Output Power Range | - | - | 550W | Per Output Channel |
| Default Output Current | - | 1200mA | - | |
| Programmable Output Current Range | 700mA | - | 2000mA | Operation range refer to Appendix 1 |
| Output Current Tolerance | - | - | ±3% | Range from 700 to 2000mA |

LED Driver

EUCO ARENA SPORT 1.6KW Series

| | | | | | |
|-----------------------------|-----------------|-------|------|--------|---|
| Output Voltage Range | | 150V | - | 550V | All operating conditions shall not exceed this voltage range |
| Output Current Ripple | | - | 1% | 2% | (ripple = (pk-pk)/avg), at low frequency(<8kHz) |
| | | - | 5% | 20% | (ripple = (pk-pk)/avg), at high frequency(>15kHz) |
| Strobe Effects ⁴ | | - | - | 33 fps | Supports a continuous sequence as fast as 30ms-ON and 30ms-OFF (fps means frame per second) |
| Output Remote Distance | | - | - | 300m | The distance is related to the actual application conditions, but the voltage in the driver side shall not exceed 550V. |
| Turn on Delay Time | DALI version | - | 0.7s | 1s | Clause 9.13 of IEC 62386-102:2014, 10%~100% load. |
| | RDM/DMX version | - | 0.7s | 1s | Clause 3.5 of ANSI E1.37-1:2012, connecting to the controller correctly, 10%~100% load. |
| | | 1.25s | - | - | Clause 3.5 of ANSI E1.37-1:2012, No controller or incorrect connection to the controller, 10%~100% load. |

4. In the Strobe mode, the OFF period should be within 5s in general, otherwise please refer to "LNA/EUCO Series Programming Tool User Manual" for more details to make a requisite configuration.

Auxiliary Power Supply Ratings / Characteristics

| Specification | Min. | Typ. | Max. | Test Conditions / Notes |
|--|-------|-------|---------------------|---|
| Integrated 24V Auxiliary Power Supply | | | | |
| Operating Voltage | 21.6V | 24.0V | 26.4V | 0.1W~6.0W, the ground is "DA-". |
| High frequency ripple of operating voltage | - | - | 1.0 V _{pp} | 21.6V~26.4V, f _{ripple} > 10kHz |
| Voltage in no-load condition | - | - | 30.0V | Output power < 0.1W |
| Average output power capability | - | 3.0W | - | CC mode load: 4.0mA~125mA (0.1W~3W). |
| Pulsed output power capability | - | 6.0W | - | Dynamic CC mode load: peak load = 250mA/2.2ms and avg load = 4.0mA~125mA/3.8ms. |
| Start-up time | - | - | 0.6s | From AC power on to V _{aux} increases and reaches 21.6 V, Mains applied at any phase angle. |
| Integrated DALI Bus Power Supply | | | | |
| DALI Bus voltage | 12V | 16V | 22.5V | CC load: 0~50mA, integrated bus power supply is pre-configured to a disabled state, and it can be activated via GUI or DALI controller. |
| Over Current Protection | 50mA | - | 62.5mA | Auto recovery and no component damaged. Limits output current to 50~62.5mA when output is short-circuited. |

Dimming Control

| Specification | Test Conditions / Notes |
|-------------------|---|
| Control interface | DALI-2 & D4i RDM/DMX |
| Dimming range | Logarithmic 0.1%-100% (2mA-2000mA, DALI default dimming mode) |
| | Linear 0.4%-100% (8mA-2000mA, DMX default dimming mode) |

Control Interface Standards

| Specification | Standards |
|----------------------------------|--|
| DALI Control interface standards | DALI-2 & D4i IEC 62386-101 Ed 2.0 IEC 62386-102 Ed 2.0 IEC 62386-207 Ed 2.0 IEC 62386 part 150: Integrated 24Vdc auxiliary power supply IEC 62386 part 250: Integrated bus power supply for sensor and radios |

LED Driver

EUCO ARENA SPORT 1.6KW Series

| | |
|-------------------------------------|--|
| | IEC 62386 part 251: Memory bank 1 extension (luminaire data) IEC 62386 part 252: Energy report IEC 62386 part 253: Diagnostics and maintenance |
| RDM/DMX Control interface standards | DMX & RDM ANSI E1.11 DMX512A ANSI E1.20 RDM – Remote Device Management ANSI E1.37-1 Additional message sets for dimmer |

Additional Dimming Features

| Specification | Description |
|-----------------------------|--|
| Smart Timer Dimming (STD) | 3 different configurable autonomous dimming profiles (fixed timer, midnight centric timer, and ratio rescale timer) over the night are available for users to select and set in GUI. This function is not activated by default. For more details, please refer to "LNA/EUCO Series Programming Tool User Manual" . |
| Constant Lumen Output (CLO) | CLO is a function to make the brightness consistent by compensating the ageing of the light source over the lifetime. It's available in GUI to set starting dimming level (for example 90%) and end of life of the product (for example 50khrs), so that the driver by counting its functioning hours can do a linear interpolation in between starting dimming level at t=0hrs, and go to 100% at t=end of life. This function is not activated by default. For more details, please refer to "LNA/EUCO Series Programming Tool User Manual" . |

Mechanical Characteristics

| Specification | Test Conditions / Notes |
|------------------------|---|
| Housing | Aluminum case, dark gray, compliance with C5 environment (ISO 9223) |
| Dimensions (L x W x H) | 500x152x77 mm |
| Unit Weight | ~5.6 kg |
| Cooling System | Natural Convection |
| Input | L1, L2, PE |
| Output ⁵ | LED Load |
| | PE, NTC, V3+ V3-, V2+, V2-, V1+, V1- |
| Control | DALI |
| | DA+, DA-, +24V ("DA-" is the ground of "+24V") |
| | RDM/DMX |
| | D1+, D1-, COM |

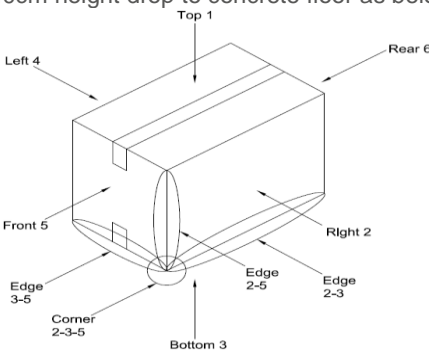
5. This is a common "Output +" design which shares equal connections between V1+, V2+ and V3+.

Environment & Package

| Specification | Test Conditions / Notes |
|-----------------------------------|------------------------------------|
| Ambient Temperature | Operating |
| | Storage |
| Maximum Case Temperature | +85°C |
| Lifetime Case Temperature | +80°C |
| Relative Humidity | Operating |
| | Storage |
| Audible Noise (30cm distance) | Sound Pressure Level (SPL) < 24dBA |
| Ingress Protection classification | IP66 (EN 60529) |
| Impact Protection classification | IK08 (EN 62262) |

LED Driver

EUCO ARENA SPORT 1.6KW Series

| | |
|------------------------------|---|
| Drop Test (Non-Operating) | <p>According to ASTM D-775, 40cm height drop to concrete floor as below drawing, total 10 times.</p>  |
| Vibration (Non-Operating) | IEC 60068-2-6, Random: 5 Hz to 10 Hz (1G); 30 min per axis for all X, Y, Z direction |
| Packing | 1pcs per carton |

Protections

| Specification | | Min. | Typ. | Max. | Test Conditions / Notes |
|---|------------|---------|---------|---------|---|
| Input Under Voltage Protection(IUVP) | Protection | 165Vac | 170 Vac | 175 Vac | Shuts down and then restarts to normal status when the fault condition is cleared. |
| | Recovery | 175 Vac | 180 Vac | 185 Vac | |
| Input Over Voltage Protection(IOVP) | Protection | 540 Vac | 545 Vac | 550 Vac | |
| | Recovery | 530 Vac | 535 Vac | 540 Vac | |
| Open Load / Output Over Voltage Protection | Protection | - | - | 600Vrms | Hiccup mode. The output voltage shall not exceed 600Vrms under no load, open load or other over voltage conditions. |
| Constant Output Power Protection | | 600 W | 610 W | 620 W | Output power limited. The driver shall come back to its original programmed current after the fault condition is cleared. |
| Output Short Circuit Protection | | YES | | | Hiccup mode. Restarts automatically after fault condition is removed. |
| Internal Over Temperature Protection | | YES | | | Driver OTP, decrease the output current to 20%*Io when $T_c \geq 90 \pm 5^\circ\text{C}$, auto recovery when $T_c \leq 80 \pm 5^\circ\text{C}$ |
| Programmable External Over Temperature Protection | | YES | | | Luminaire OTP, output power derating. Refer to Appendix 7 "Programmable External Over Temperature Protection" for more details. |

Electro-Magnetic Compatibility (EMC)

| Specification | Standards |
|---|---|
| EMC-Emission Characteristics | |
| Radiated Emission | EN55015, GB/T17743, FCC Part 15 Subpart B |
| Conducted Emission | EN55015, GB/T17743, FCC Part 15 Subpart B |
| Harmonic Current Emission | IEC 61000-3-2, GB 17625.1 |
| Voltage Fluctuation & Flicker | IEC 61000-3-3 |
| EMC-Immunity Characteristics | |
| Electrostatic Discharge (ESD) | IEC 61000-4-2 |
| Radio Frequency Electro-magnetic Fields | IEC 61000-4-3 |

LED Driver

EUCO ARENA SPORT 1.6KW Series

| | | |
|---------------------------------|---------------|--|
| Electrical Fast Transient (EFT) | IEC 61000-4-4 | |
| Surge (AC Mains) ⁶ | IEC 61000-4-5 | - Common Mode: 10kV (L1 to Earth, L2 to Earth) - Differential Mode: 10kV (L1 to L2) |
| Surge (Output) | IEC 61000-4-5 | - Common Mode: 3kV (V1+/V2+/V3+ to Earth, V1-/V2-/V3- to Earth) - Differential Mode: 1kV (V1+ to V1- / V2+ to V2- / V3+ to V3-) |
| Surge (Dimming) | IEC 61000-4-5 | - Common Mode: 3kV (DA+ to Earth, DA- to Earth) - Common Mode: 3kV (D1+ to Earth, D1- to Earth, COM to Earth,) - Differential Mode: 1kV (DA+ to DA-) - Differential Mode: 1kV (D1+ to D1-, D1+ to Com, D1- to Com) |
| Surge (NTC) | IEC 61000-4-5 | - Common Mode: 3kV (NTC to Earth) - Differential Mode: 1kV (NTC to V1+/V2+/V3+) |
| Conducted Disturbance | EN61000-4-6 | |
| Voltage Dip & Interruptions | EN 61000-4-11 | |

6. Level B, the peak of residual common mode voltage pulse from output +/- to Earth is around 2.5kV.

Reliability Data

| Specification | Test Conditions / Notes |
|---------------|--|
| Lifetime | 50,000 hours applicable for 220Vac to 480Vac(50/60Hz) @100% of load, Ta=45°C (Tcase=80°C), 100,000 hours applicable @ 100% of load, Tcase≤70°C. Refer to Appendix 3 "Life Time versus Case Temperature Curve" for more details. |
| MTBF | 475khrs. at Ta=+45°C Telcordia SR-332 |
| Warranty | 5 years, refer to Appendix 9 "Warranty Policy" for more details. |

Safety & Other Approvals ⁷

| Safety Category | | Standards |
|-----------------|--------|--|
| ENEC | MARK | EN 61347-1:2015, EN 61347-1:2015/A1:2021 EN 61347-2-13:2014, EN 61347-2-13/A1:2017 EN IEC 62384:2020 |
| CB | REPORT | EN 61347-1:2015, EN 61347-1:2015/A1:2021 EN 61347-2-13:2014, EN 61347-2-13/A1:2017 |
| UKCA | MARK | BS EN 61347-2-13: 2014+A1:2017 |
| CE | MARK | CE Declaration of Conformity. |
| UL | MARK | UL Compliant ANSI / UL8750 2 nd Ed. CSA C22.2 No.250.13, 4 th Ed. |
| RCM | MARK | AS/NZS 61347-1: 2016+A1 AS 61347-2-13: 2018 |
| Isolation | | Class I, input to output: non-isolation, RDM/DMX and DALI to input/output reinforced isolation. |
| RoHS | | RoHS 2.0 Directive(EU) 2015/863 |
| REACH | | In compliance |

7. If you have any requirements for safety approvals, please contact us.

LED Driver

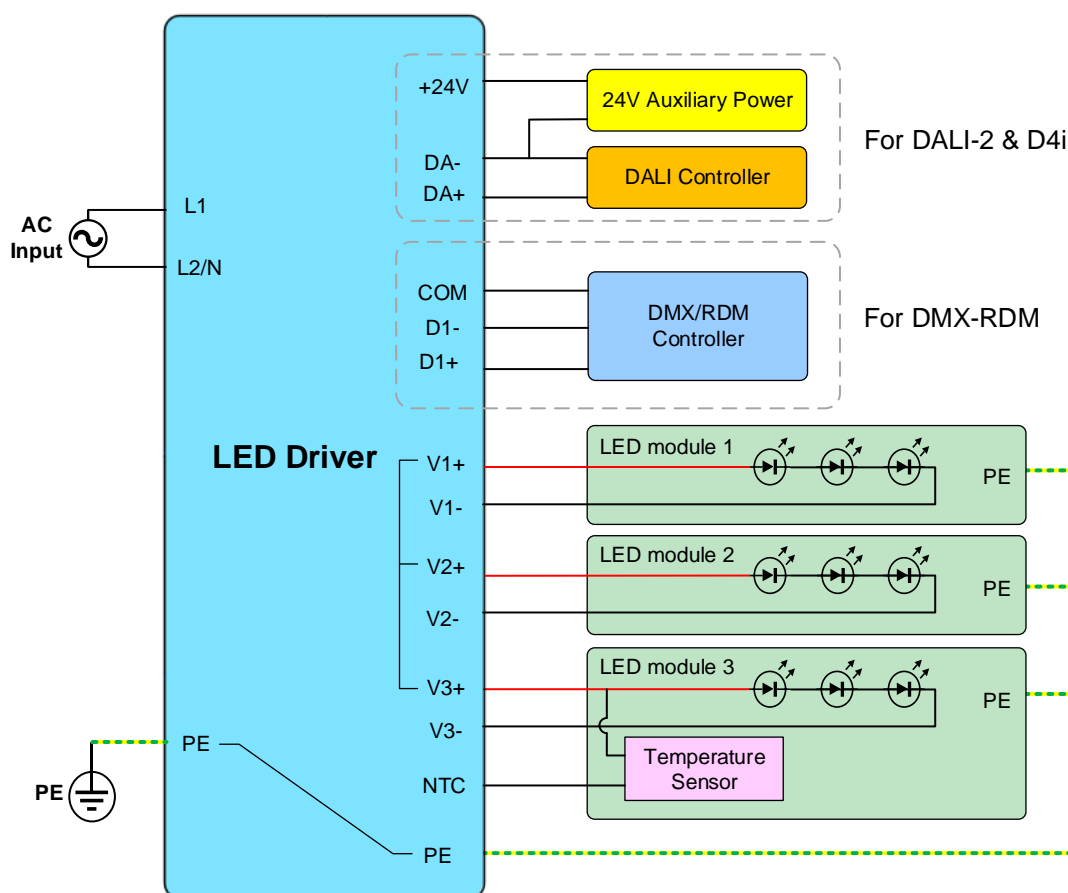
EUCO ARENA SPORT 1.6KW Series

Miniature Circuit Breaker Configuration

The maximum number of LED drivers connectable to a single MCB is recommended in the following table for maximum 1650W and each nominal input voltage. Due to the differences in application conditions and different kinds of miniature circuit breakers available on the market, this table is just for reference.

| Input Voltage | MCB Type | 16A | 20A | 25A | 32A | 40A | 63A |
|---------------|----------|-----|-----|-----|-----|-----|-----|
| 208 Vac | B/C | 1 | 1 | 2 | 3 | 3 | 6 |
| 220 Vac | B/C | 1 | 2 | 2 | 3 | 4 | 6 |
| 277 Vac | B/C | 2 | 2 | 3 | 4 | 5 | 8 |
| 400 Vac | B/C | 2 | 3 | 4 | 5 | 7 | 11 |
| 480 Vac | B/C | 3 | 4 | 5 | 7 | 8 | 13 |

Electrical Connection



Note:

- This is a common "OUTPUT +" design that V1+, V2+ and V3+ are electrically connected together internally and have exactly equal outputs, but V1-, V2-, and V3- should not be connected together during installation.
- Simply connect the controller to the appropriate terminals to fulfill the control requirements without additional configuration.
- The maximum permissible voltage on the control interface terminals should not exceed 60Vrms, otherwise damage may occur and reliability may be compromised.

LED Driver

EUCO ARENA SPORT 1.6KW Series

Programming Configuration

1. LNA/EUCO Series Programming Tool

Common setting functions and implementation methods/conditions are shown in the following table, more functions and details please refer to the **LNA/EUCO Series Programming Tool User Manual**.

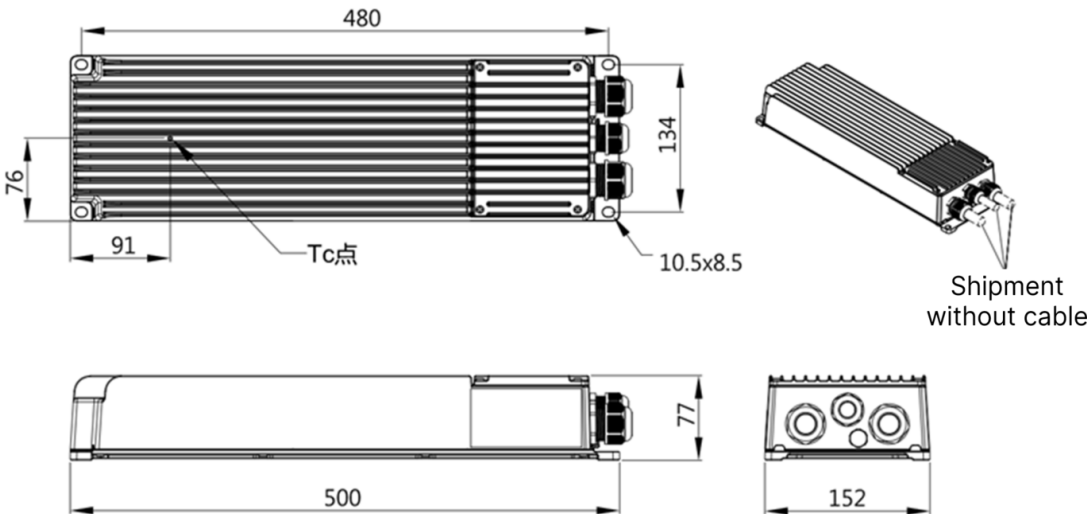
| Item | | DALI | DMX |
|---------------------------------------|-------------------------------|--|---------|
| Setup | Tool Connection | DA+,DA- | D1+,D1- |
| | AC power supply | ■ | ■ |
| | Load Connection | ○ | ○ |
| Tool | Delta Programming Tool | SDDV1505UAC (SDDV1505UAB, SDPTDV05UAB) | |
| Configurable Parameters and Functions | Max. current programming | √ | √ |
| | Default output current | √ | √ |
| | Luminaire OTP setting | √ | √ |
| | Constant lumen output setting | √ | √ |
| | Smart timer dimming | √ | √ |
| | Address mode | √ | √ |
| | Software update | √ | √ |

Note: ■ Required, ○ Optional, √ Available.

2. DALI & RDM Standard Controller

This driver is compatible with D4i and RDM functions, providing a variety of free configuration options and rich monitoring data, such as personalized assignment of addresses, access to output status information. Customers can configure it flexibly according to their own usage requirements. Please refer to the “**D4i & RDM Data Management User Manual**” for the relevant configuration instructions.

Physical Dimensions



Unit: mm

LED Driver

EUCO ARENA SPORT 1.6KW Series

Cable Gland

M25 cable gland to housing: 3.43Nm

M20 cable gland to housing: 3.43Nm

Vent to housing: 0.6~0.8 Nm



Do not loosen the Protective Vent

Input: M25 cable gland (5 Nm)
Clamping cable: 10.0~16.3mm
1.0~2.5□ AWG 17~12

Control: M20 cable gland, plug by default (1 Nm)

Output: M25 cable gland (5 Nm)

Option A:

Clamping cable (3.5 Nm)
6.3~11.3mm(1 hole seal)
0.3~2.5□ AWG 22~12



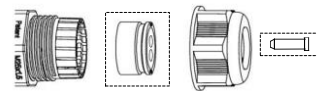
Default:

Clamping cable (5 Nm)
10~16.3mm(1 hole seal)
0.75~2.5□ AWG 18~12



Option B:

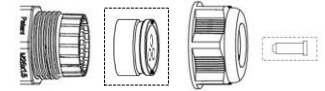
Clamping cable (3.5 Nm)
5.0~6.5mm(2 holes seal)
0.3~2.5□ AWG 22~12



The 2 holes seal and plug are in the plastic bag.

Optional:

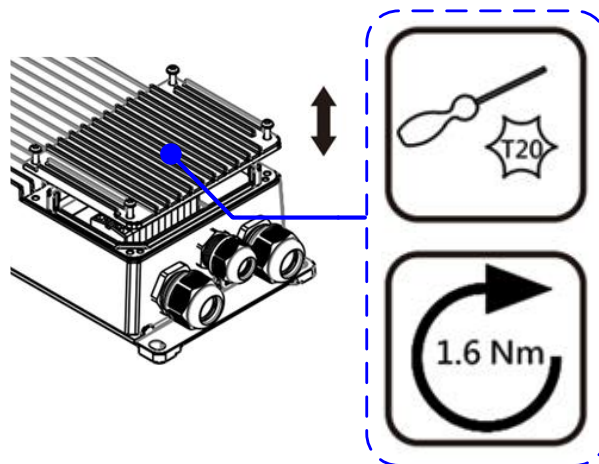
Clamping cable (5 Nm)
5.0~6.5mm(3 holes seal)
0.3~2.5□ AWG 22~12



The 3 holes seal and plug are in the plastic bag.

Note: More details about cable selection information, please refer to the **Installation User Manual**.

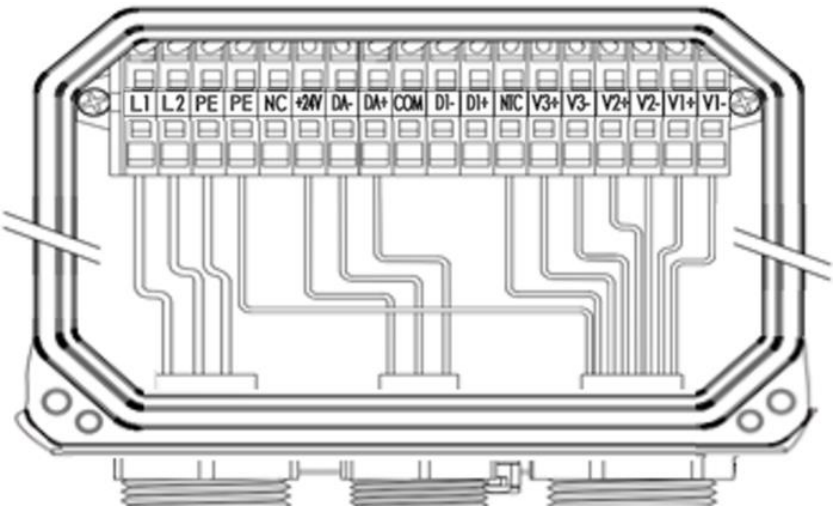
Junction Box



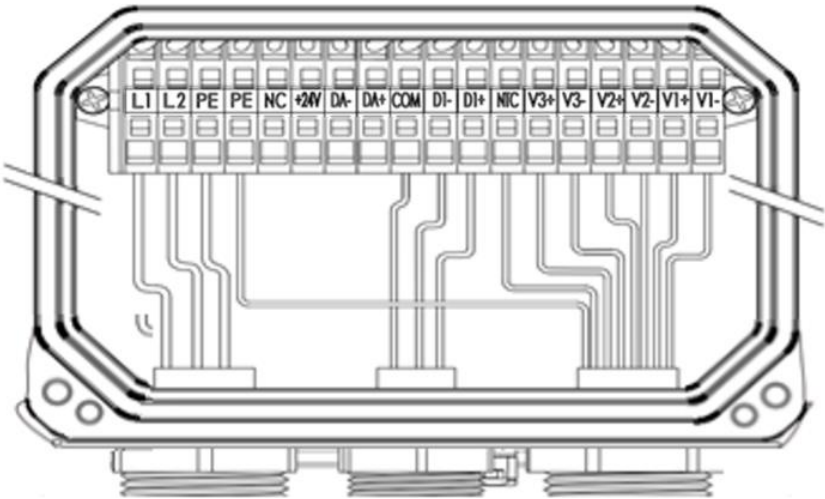
Note: The cap and fastening 4 screws all have the function of anti-falling off.

LED Driver

EUCO ARENA SPORT 1.6KW Series



DALI Connection



RDM/DMX Connection

| Number | Label | Description |
|--------|-------|--|
| 1 | L1 | AC input |
| 2 | L2 | AC input |
| 3 | PE | Protective Earth |
| 4 | PE | Protective Earth for luminaire |
| 5 | NC | Reserved |
| 6 | +24V | +24V/3W auxiliary power supply, and the ground of "+24V" is "DA-". |
| 7 | DA- | DALI input -, and the ground of "+24V" |
| 8 | DA+ | DALI input + |
| 9 | COM | DMX Common port/Shielding |
| 10 | D1- | DMX input - |
| 11 | D1+ | DMX input + |
| 12 | NTC | Luminaire Temperature Detection |



LED Driver

EUCO ARENA SPORT 1.6KW Series

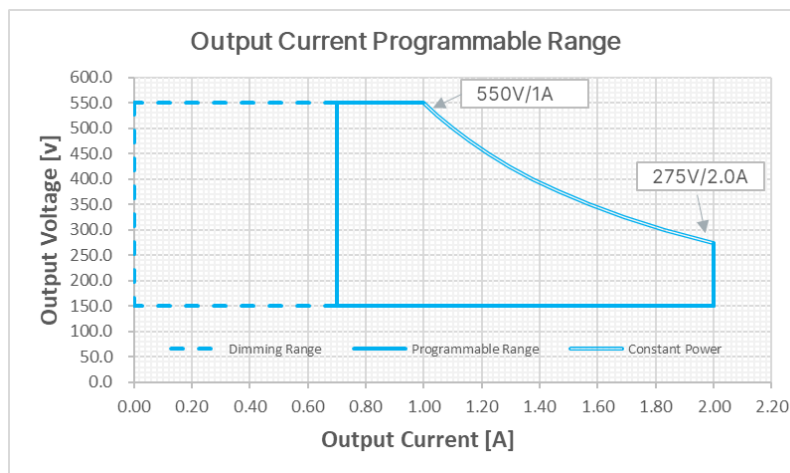
| | | |
|----|-----|--------------------|
| 13 | V3+ | Channel 3 output + |
| 14 | V3- | Channel 3 output - |
| 15 | V2+ | Channel 2 output + |
| 16 | V2- | Channel 2 output - |
| 17 | V1+ | Channel 1 output + |
| 18 | V1- | Channel 1 output - |

LED Driver

EUCO ARENA SPORT 1.6KW Series

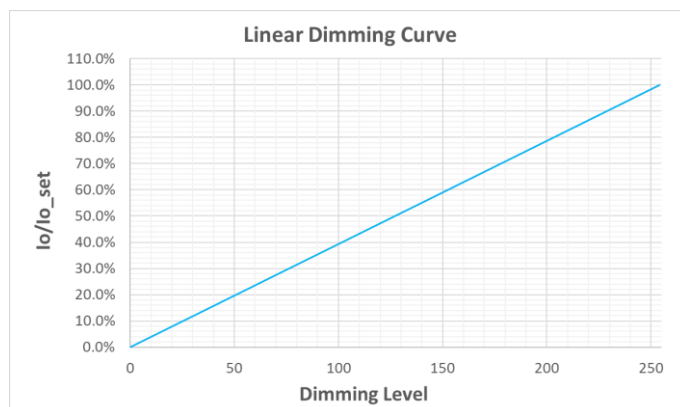
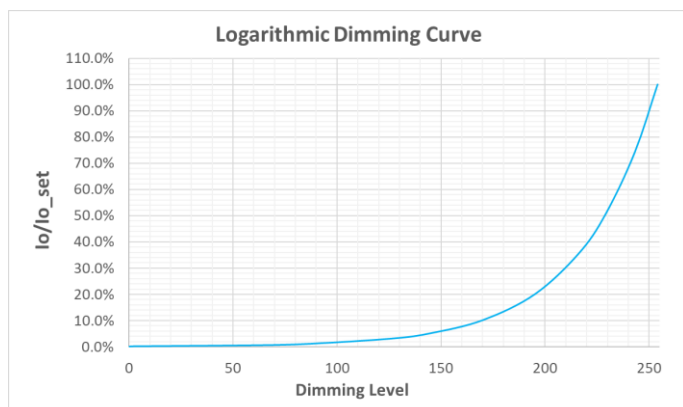
Appendix

1. Operating Range



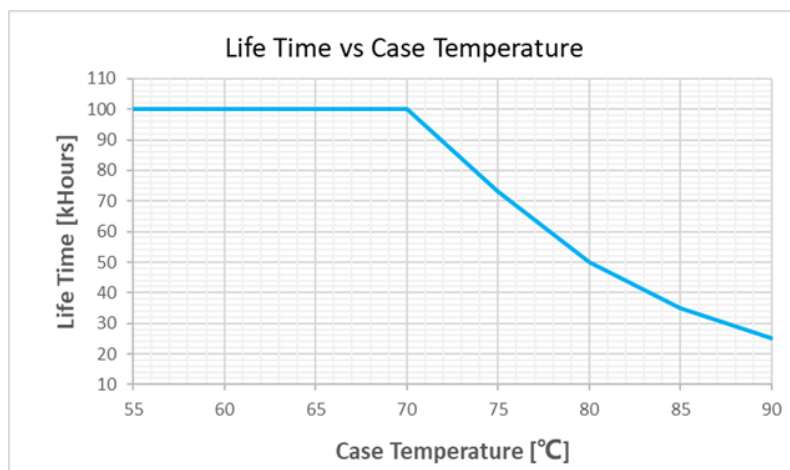
Note: EUCO-1K6200GCA series can be programmed with wide output current through computer and programming tool. For more details, please refer to **LNA/EUCO Series Programming Tool User Manual**.

2. Dimming Curve



DALI/DMX

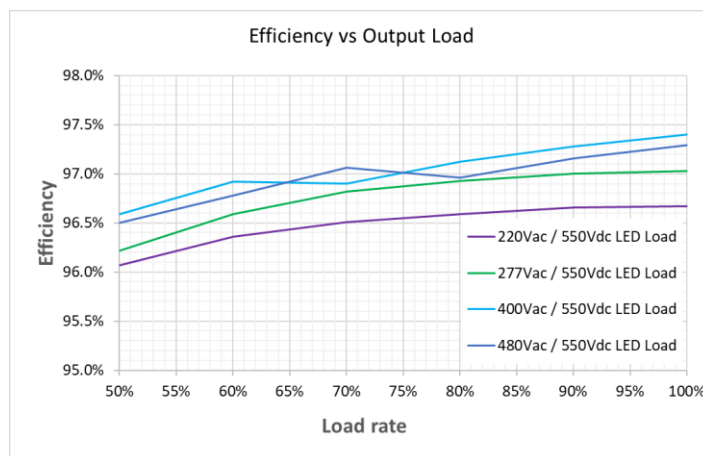
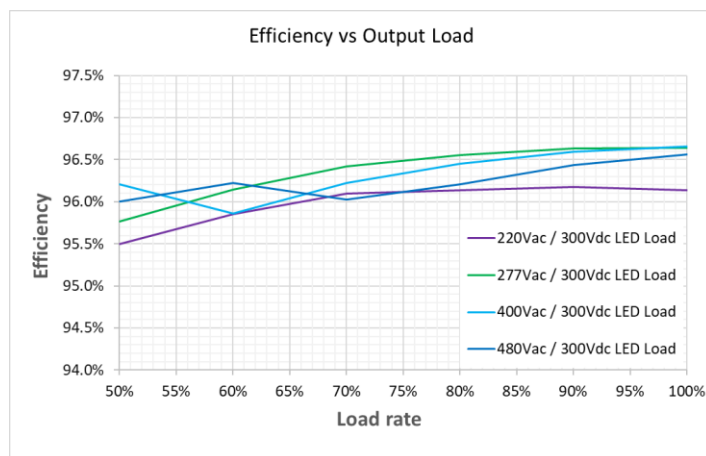
3. Life Time versus Case Temperature Curve



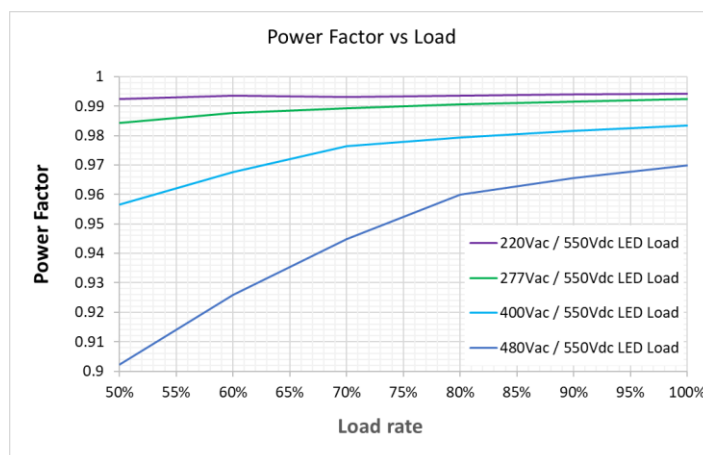
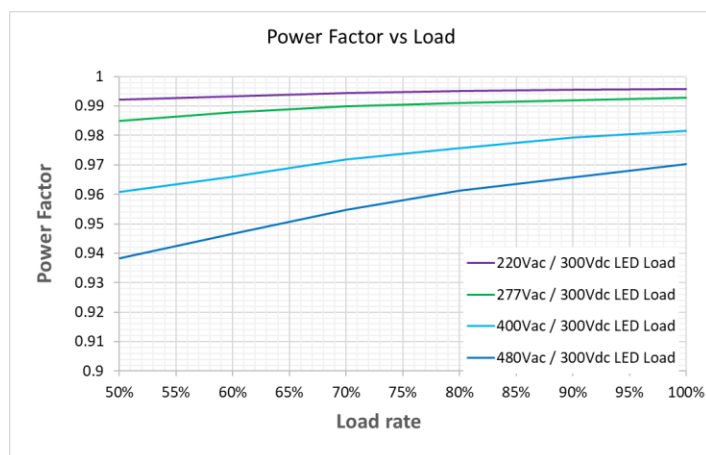
LED Driver

EUCO ARENA SPORT 1.6KW Series

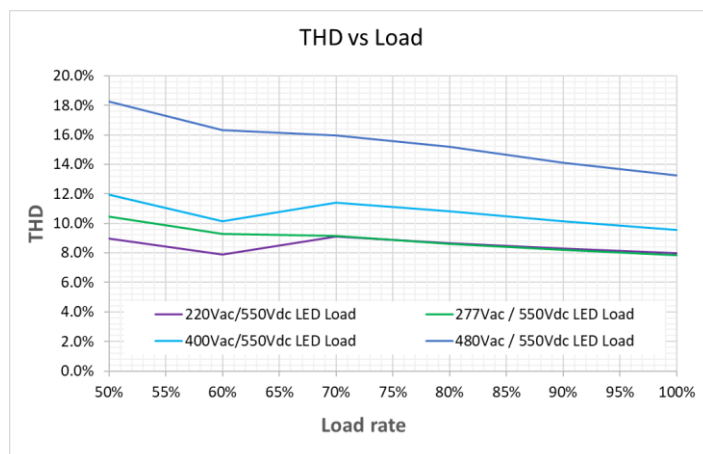
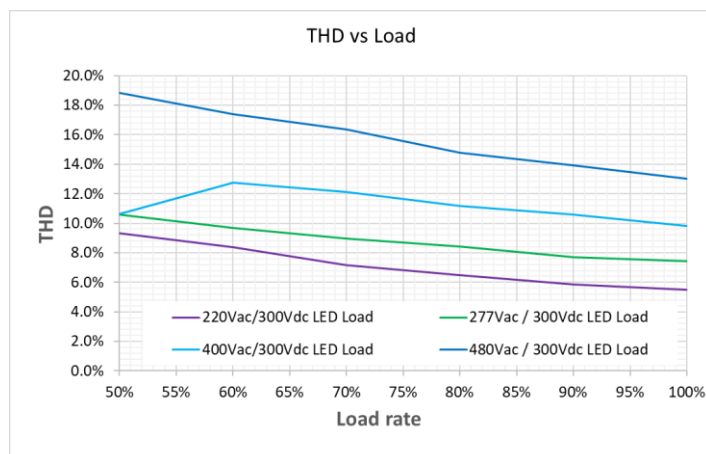
4. Efficiency versus Load



5. Power Factor versus Load



6. THD versus Load

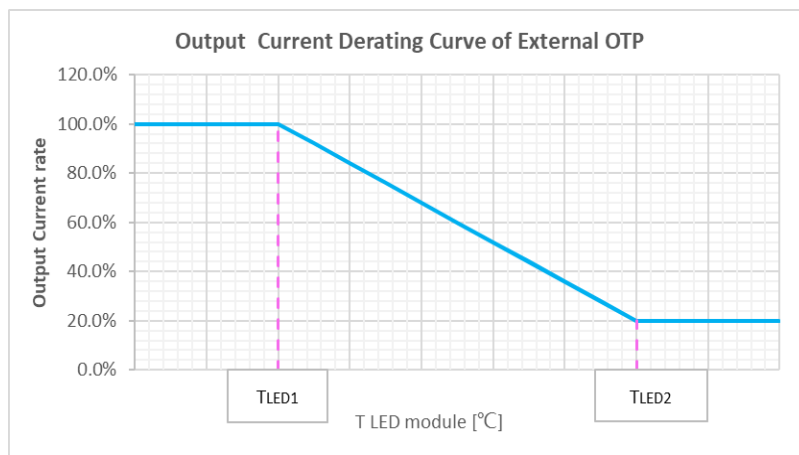


LED Driver

EUCO ARENA SPORT 1.6KW Series

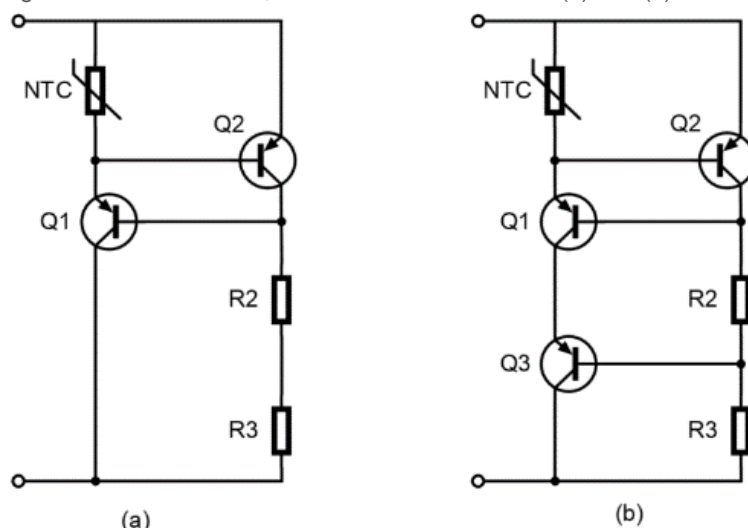
7. Programmable External Over Temperature Protection

This protection is an optional feature and user can ignore it without connecting to NTC connector in the junction box. The driver monitors the temperature of the LED module through NTC terminal. The output current will be reduced smoothly and linearly at OTP status and return to normal when the fault condition is removed.



The trigger point of this protection can be set easily according to the actual conditions of the LED fixtures, the user can set the trigger point between 80°C and 110°C by the Delta programming tool, and the default value is 110°C. When the temperature exceeds the triggering point, the output current will decrease automatically to bring the temperature of the LED module back to safe value. More details about parameter setting please refer to **LNA/EUCO Series Programming Tool User Manual**.

An external temperature sensing circuit is required to achieve the NTC terminal function to prevent the LED fixture from overheating. The default setting is for a 33Kohm NTC, the circuits shown as both (a) and (b) below are acceptable.



The circuits (a) and (b) have same OTP performance by using the same parts listed in the table, and to achieve good accuracy of OTP, Q2 should be placed close to NTC to make them have same temperature.

| Parameter | Part | Manufacturer | Description |
|--------------|------------------|--------------|--|
| NTC | TSM1A333F3952RZA | THINKING | RES NTC 33Kohm F 3950K +/-1% SMD 0603 TP |
| R2 / R3 | RC1206FR-07 5M1L | YAGEO | RES SMD 1/4W 5.1Mohm F 1206 |
| Q1 / Q2 / Q3 | PBHV9050T | NEXPERIA | 500V 150 mA PNP high-voltage low VCEsat transistor |

LED Driver

EUCO ARENA SPORT 1.6KW Series

This product is also compatible with the circuitry (b) for a 10Kohm NTC, this version could be selected and activated by “OTP on Fixture” section of GUI (Select “10K” in this section). The circuit and BOM table are shown as below.

| Parameter | Part | Manufacturer | Description |
|-----------|-----------------|--------------|--|
| NTC | NTCG163JH103JT1 | TDK | RES NTC 10Kohm F 3380K +/-1% SMD 0603 |
| R2/R3 | RC1206FR-07 1ML | YAGEO | RES SMD 1/4W 1Mohm F 1206 |
| Q1/Q2/Q3 | PBHV9050T | NEXPERIA | 500V 150 mA PNP high-voltage low VCEsat transistor |

Note:

- The recommended temperature detection circuit should be on the LED module.
- NTC should be placed as close to Q2 as possible.
- Do not make any change to the temperature detection circuit of LED module.
- The specifications of alternative components should be the same as the recommended sources. Especially, the NTC is a key and thermos-sensitive component and DO NOT change to other types, like B value = 4480K.

8. External SPD requirement for extra LED fixture common mode surge protection

The EUCO series driver has been designed with a built-in surge absorber which protects against lightning up to CM/DM 10kV level. The built-in surge absorber activates once a common mode surge intrusion occurring, which offers a protection against any unexpected voltage surge to the LED module of $\leq 3\text{kV}$.

Even though, EUCO Arena driver series do not require the installation of an additional SPD protect the driver and LED module against any unexpected surge voltage, it would allow to further strength the robustness protection capability against surge residual voltage of LED modules which allows the fixtures to be marketed globally by attributing different surge protector device (SPD) to meet differing surge levels.

However, Delta Electronics proposes not to install an external SPD at LED module side because it would be unsafe attributable to when this device would be triggered, a high common mode current will generate through driver and SPD that will cause some unexpected and irreversible damage to the driver.

9. Warranty Policy

Please reach out our [Warranty Policy](#) should you require any further clarification.

10. Attention

Delta provides all information in the datasheets on an “AS IS” basis and does not offer any kind of warranty through the information for using the product. In the event of any discrepancy between the information in the catalog and datasheets, the datasheets shall prevail (please refer to <http://www.DeltaPSU.com> for the latest datasheets information). Delta shall have no liability of indemnification for any claim or action arising from any error for the provided information in the datasheets. Customer shall take its responsibility for evaluation of using the product before placing an order with Delta.

Delta reserves the right to make changes to the information described in the datasheets without notice.