*i*Drive™ UL

The intelligent 58W LED Driver

USER MANUAL

The *i*Drive™ UL is one of a family of devices specifically designed for the control and dimming of LED Fixtures.

Product Overview

The powerful new ***i*Drive**™ UL LED driver is designed to optimize the performance of high power lighting fixtures using high power LEDs including LUXEON®, Cree, Seoul Semiconductor, Nichia and any other quality manufacturer.

The patented ***i*Drive**™ UL technology enables excellent colour matching and 100% smooth dimming with precise DC current control combined with advanced automatic heat management system to enhance the long life of both fixtures and LED boards.

The 58 Watt system provides a universal voltage input with both UL and CE approvals so you can install them in practically any location.

The ***i*Drive**™ UL has been designed to make installation simple and to save time by using standard power and DMX connectors with a unique user interface to control all ***i*Drive**™ UL functions. There are no complicated DIP switches!

The patented thermal control of attached LED boards, using our unique Colourcool™ Technology, optimises your LED installation for any environment.

Features

- Compact size and rugged construction with standard 5-pin XLR DMX in/out connectors.
- Universal voltage input with standard IEC connector.
- Patented ColourCool™ thermal management system to optimise and prolong the life of fixtures and LEDs.
- The ***i*Drive**™ UL technology is licenced and patented in the UK and USA with Worldwide applications pending.
- Patented colour mixing 3 channel system.
- Simple 3 rotary switch interface sets DMX address and controls all additional pre-set functions.
- Smooth dimming control 0 - 100%.
- High efficiency (>88%).
- Long life and high reliability (50,000 hours).
- LED lamp connection with 8P Terminal.
- Short and open circuit protection.
- Standalone mode (no DMX controller required) incorporating many static and dynamic colour functions and programmes.
- Self test functions.
- No binning of LEDs results in cost savings.
- Internal Thermal Protection.
- CE Approved

Patented: USA 6 963 175, GB 2 369 730, AUS 2002321596, GB 2 408 315

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Welcome to the iDrive™ UL, with a host of built in features and protection for your LED fixtures.
The iDrive™ UL is designed to control fixtures containing between 18 and 36 RGB LED's.
Please ensure that the LED fixture is plugged into the iDrive™ 8P Terminal connector before the mains is switched on, this is important since the system will perform a diagnostic scan of the LED fixture when powered up.
The diagnostic scan will test for two functions.

1.Open or short circuits in the LED fixture and wiring. If this is detected the faulty channel will be isolated. The RED LED 'wiring fault indicator' will illuminate to confirm this. The iDrive™ should be turned off at the mains and the fault rectified before powering up the system again.

2. The second scan will look for a thermistor on the LED fixture, as recommended in the 'wiring specification' (page 4). If a thermistor is found the 'thermal feedback protection' will be activated in the iDrive.

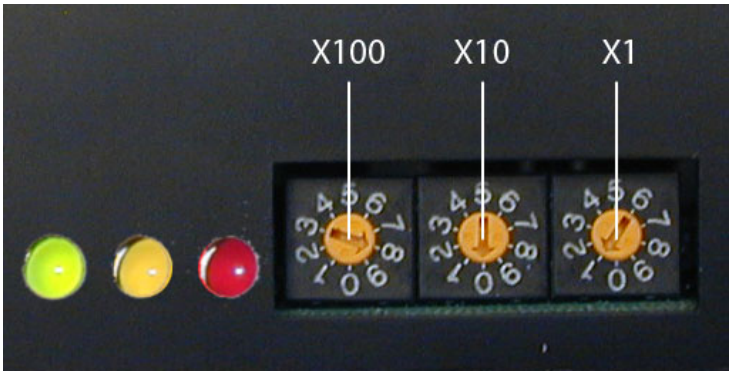
Mains Indicator - Indicates power onto the iDrive™

DMX Indicator - When the rotary switches are set to a DMX address i.e. between 001 and 510, this indicator will flash until the iDrive™ receives a DMX input via the DMX 5-pin XLR input.
Once a DMX signal is received, the amber indicator stops flashing and stays permanently on.

Wiring Fault Indicator - The iDrive™ has short/open circuit protection. In the event of the LED fixture being incorrectly wired, the indicator will be permanently on until the fault in the LED fixture has been corrected.

The iDrive™ uses DMX 512A - the latest ESTA DMX standard, using isolated 5-pin XLR connections for both input and output.

DMX OUT DMX IN



Wiring Fault Indicator

DMX Indicator

Mains Indicator

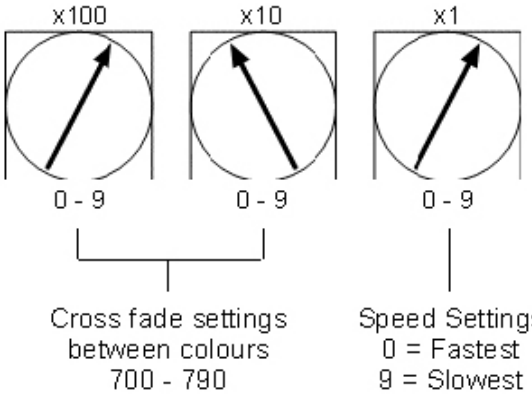
The iDrive™ can be used in DMX mode or stand alone mode.

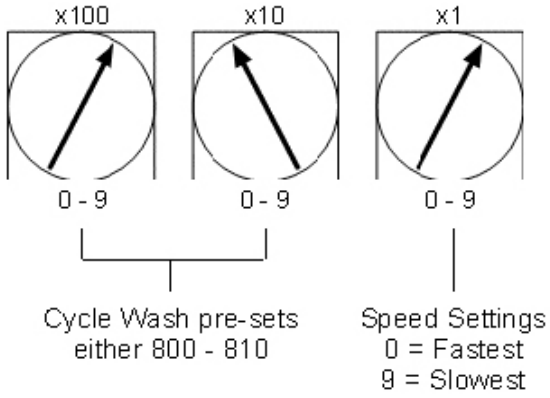
For DMX Settings
The rotary switches should be set to between 001 and 510. Normally address 0.0.1 is sufficient for a 3 channel and master DMX controller.

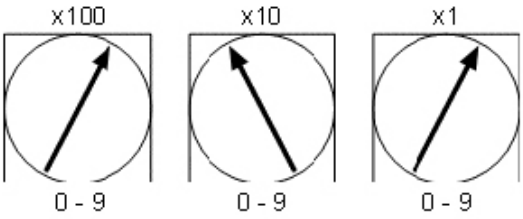
For Stand Alone Settings
The iDrive™ contains many pre-set programmes.
600 - 636 - This setting provides 36 different preset colours - 636 being a white setting, i.e. all LEDS full on.
700 - 799 - These are the cross fade settings with different speed functions.
800 - 819 - Cycle Wash Pre-set.

There are two preset cyclic washes, either clockwise or anti-clockwise with speed control

DMX AND PRE-SET PROGRAMME SETTINGS





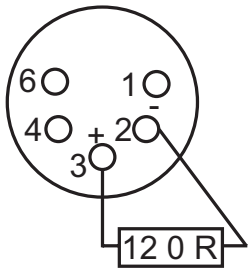


Switch Settings	Function
001 - 510	DMX-512A start address
600 - 636	Fixed Colour pre-set
700 - 799	Cross Fade pre-set
800 - 819	Cyclic Wash pre-set

DMX Termination

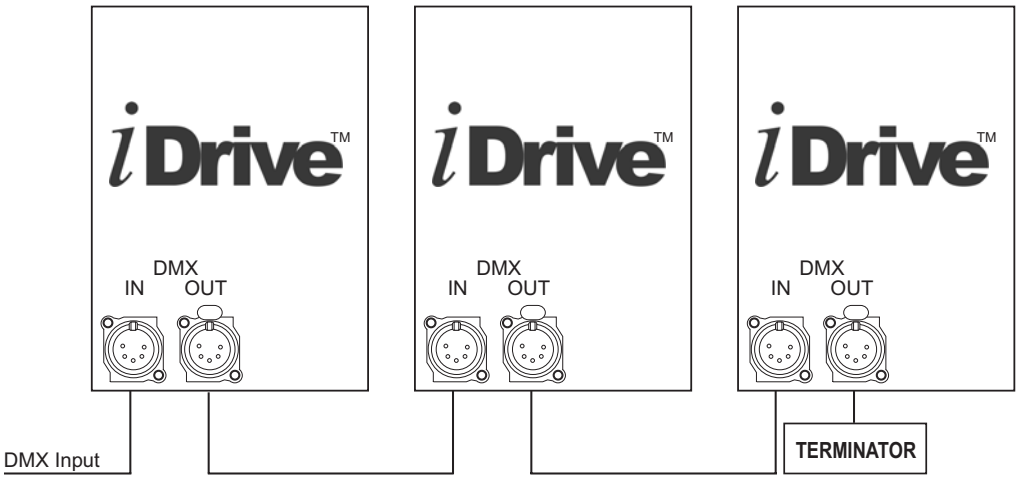
In accordance with good practice of DMX cabling networks. (ESTA & USITT). It is recommended that the last DMX output plug is terminated correctly by fitting a 120 Ohm resistor across terminals 2 & 3 as shown.

Terminate with a metal-film resistor of 120 [Ohm]



Solder side: male

The iDrive can be networked from one single DMX input



Wiring configurations for 5-pin XLR

G (ground cable shield) to XLR pin No. 1
- (negative) to XLR pin No. 2
+ (positive) to XLR pin No. 3

WIRING SPECIFICATION INFORMATION

8P Terminal Wiring input

1 = Channel 1 +
2 = Channel 1 -
3 = Channel 2 +
4 = Channel 2 -
5 = Channel 3 +
6 = Channel 3 -
7 = Thermister Ground*
8 = LED Temperature*

WARNING!
Accidental connection of the LED fixture output to non LED equipment may result in damage
(e.g. an Ethernet Hub)

* IST Ltd recommend that a 10K ohm SMT thermistor type: EPCOS B57621C103J62 is located in the centre of the LED board for effective thermal management control.

iDrive™ conforms to the following PSU specifications

IEC 61000-4-2: 1995+A1: 1998+A2: 2001
IEC 61000-4-3: 2006
IEC 61000-4-4: 2004
IEC 61000-4-5: 2005
IEC 61000-4-6: 2003+A1: 2004+A2: 2006
IEC 61000-4-8: 1993+A1: 2000
IEC 61000-4-11: 2004

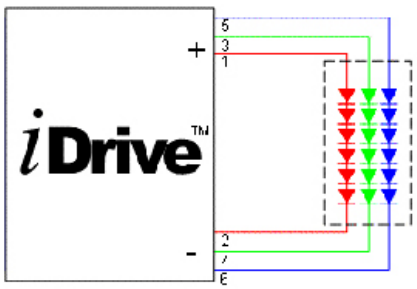
EN61204-3: 2000
EN61000-3-2: 2006
EN61000-3-3: 1995+A1: 2001+A2: 2005

FCC CFR Title 47 Part 15 Subpart B: 2007 Class B, CISPR 22: 2006
ANSI C63.4: 2003
ICES-003 Issue 4: 2004 Class B

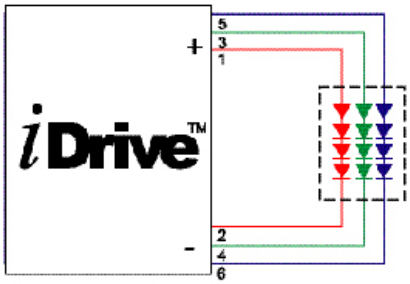
EN 61347-2-13
EN 61347-1: 2001

Typical wiring configurations for 1 watt Luxeon® RGB system

18 x RGB systems

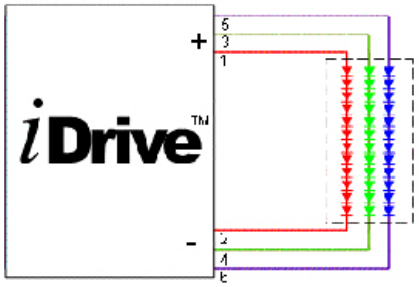


12 x RGB systems

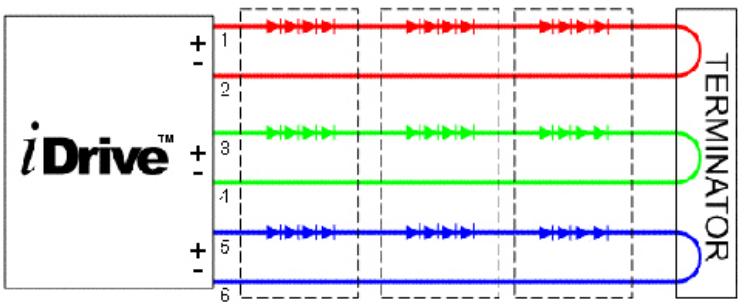


These are typical wiring configurations but many other combinations can be used including white LED systems.

36 x RGB Systems



3 Off 12 x RGB Systems



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Specifications
Electrical Characteristics

Input

Input Voltage Range:	100 - 240V AC
Input Frequency:	50 - 60 Hz Power
Consumption:	6 - 58 W Power
Power Factor:	0.88
Efficiency:	85%
Connection:	standard IEC
Insulation Class:	One

Output

Power Output Range:	4.9 – 16.8 W Per Channel
Maximum Output Current:	350mA
Voltage:	14V - 48V DC
Connection:	8P Terminal Block Connector

Control Input

Dimming Control:	DMX-512A
Connection:	standard XLR 5 pin
Dimming Range:	0 - 100 %
DMX Start Address Range:	1 - 510 via 3 rotary BCD switches.

Mechanical

Mounting:	Four 3mm holes for wall fixing.
Construction:	Aluminum casing for improved thermal performance.
Weight:	600 grams

Environmental

Operating Ambient Temperature:	-20ºC to + 50°C
Storage Ambient Temperature:	-20ºC to + 70ºC
Case Temperature:	+ 65ºC
Relative Humidity:	80%
Lifetime (failures after 50,000 hours):	5%

Dimensions

Warranty and Returns Policy:

Product warranty or service will not be honoured if:

1. The product has been repaired, modified or altered
2. The serial number is defaced or missing
3. Operation of the product has occurred outside of the published environmental specification.

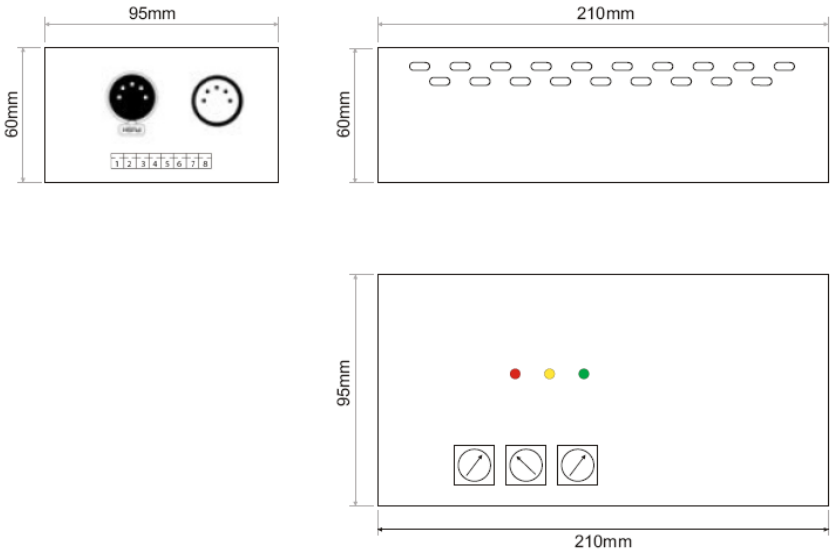
Should the iDrive™ fail in service within 12 months from the purchase date, please return the unit to your supplier for replacement.

There are no serviceable parts in the iDrive™, opening of the unit will void all warranties.

Thermal Protection:

To protect the components used in the production of the iDrive™, a thermal over-load protection system has been built into the circuit.

Should the ambient temperature, inside the iDrive™ casing exceed 65º centigrade, the thermal protection system will be activated and the iDrive will be switched off. Once the internal temperature falls to a normal operating level the iDrive™ will automatically switch itself back on.



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