*i*Drive™ lite
The intelligent 55W LED Driver

U S E R   M A N U A L

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

Product Overview

The powerful new *i*Drive™ lite LED driver is designed to optimize the performance of high power lighting fixtures using high power LEDs including Luxeon™.

The patented *i*Drive™ lite 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 55 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™ lite 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™ lite functions. There are no complicated DIP switches!

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

*i*Drive™ lite can be controlled by DMX512, or use the hundreds of pre-programmed settings to provide independent scenes, colour combinations and effects.

Features

• Compact size and rugged construction with standard 5-pin XLR DMX in/out connectors.

• Universal voltage input with standard IEC connector.

• Patented Colour Cool™ thermal management system to optimise and prolong the life of fixtures and LEDs.

• The *i*Drive™ lite 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 8 pin RJ45 connector.

• 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

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Welcome to the **iDrive lite**, with a host of built in features and protection for your LED fixtures.
The iDrive lite is designed to control fixtures containing between 18 and 36 RGB LED's.
Please ensure that the LED fixture is plugged into the **iDrive** RJ45 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.

Both these scans take less than 1 second to perform and only take place on initial power up of the system.

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.

x100 x10 x1

DMX Indicator — Wiring Fault Indicator

Mains Indicator

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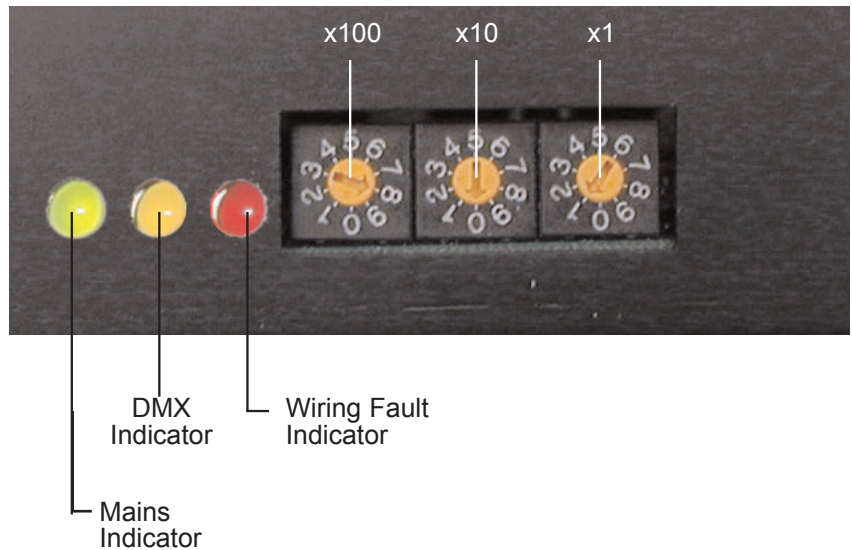
The iDrive can be used in DMX mode or stand alone mode.

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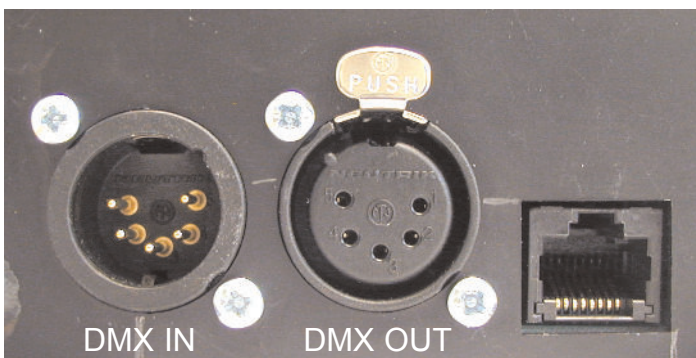
For Stand Alone Settings
The iDrive contains many pre-set programmes.
600 - 636 - This setting provides 36 different **preset colours** - 636 being a white setting, i.e. all LEDS full on.
700 - 799 - These are the **cross fade** settings with different speed functions.
800 - 819 - Cycle Wash Pre-set.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

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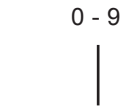
DMX AND PRE-SET PROGRAMME SETTINGS

x100	x10	x1		x100	x10	x1

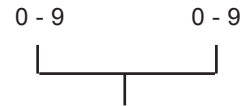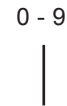| 0 - 9	0 - 9	0 - 9		0 - 9	0 - 9	0 - 9

Cross fade settings between colours 700 - 790
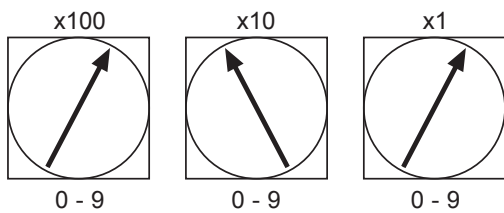
Speed Settings 0 = Fastest 9 = Slowest

Cycle Wash pre-sets either 800 - 810

Speed Settings 0 = Fastest 9 = Slowest

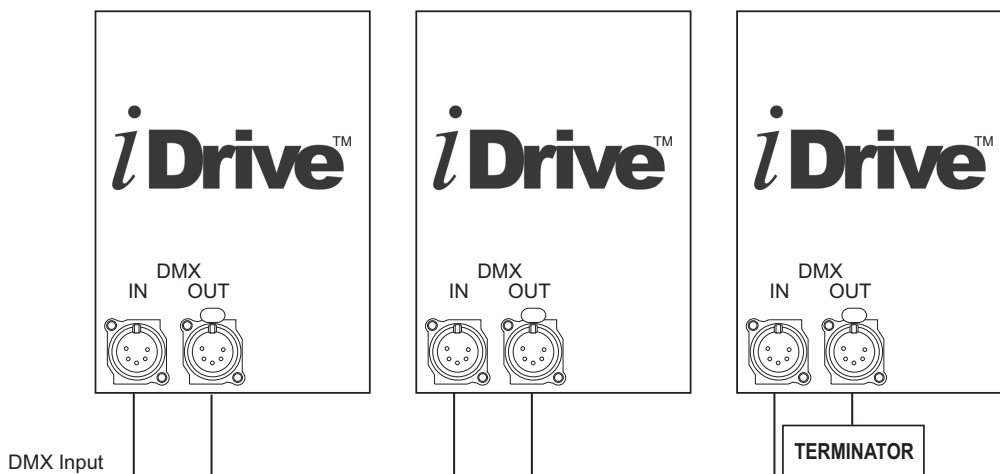| x100	x10	x1
0 - 9	0 - 9	0 - 9

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.

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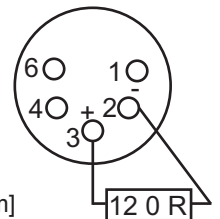
Terminate with a metal-film resistor of 120 [Ohm]

6 O   1 O
4 O + 2 O
3 O

12 0 R

Solder side: male

The iDrive can be networked from one single DMX input

*i*Drive™	*i*Drive™	*i*Drive™
DMX IN OUT	DMX IN OUT	DMX IN OUT

DMX Input

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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

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WIRING SPECIFICATION INFORMATION

RJ45 WIRING INPUT

1 = Red +
2 = Red -
3 = Green +
4 = Green -
5 = Blue +
6 = Blue -
7 = Thermistor Ground*
8 = LED Temperature*
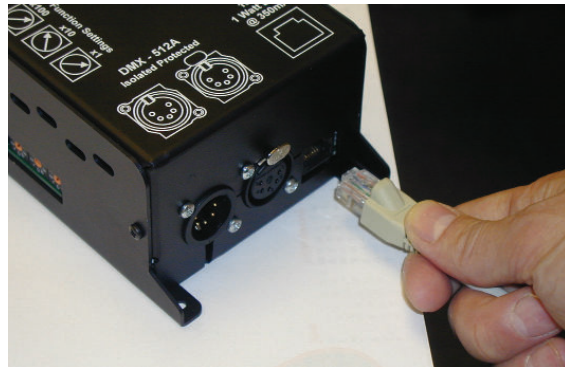
* IST Ltd recommend that a 10K ohm SMT thermistor type: EPCOS B57621C103J62 is located in the centre of the LED board for
effective thermal management control.

WARNING!
Accidental connection of the RJ45 LED fixture output to non LED equipment may result in damage
(e.g. an Ethernet Hub)

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*i*DRIVE™ CONFORMS TO THE FOLLOWING PSU SPECIFICATIONS.

EMC:
EN 55022/55015
EN 61000-6-3
EN 61000-6-4
EN 61547

Harmonic & Flicker
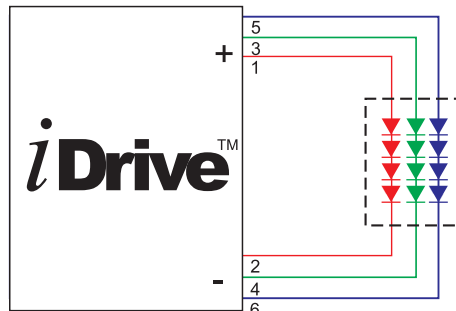EN 61000-3-2
EN 61000-4-2 to EN61000-4-11

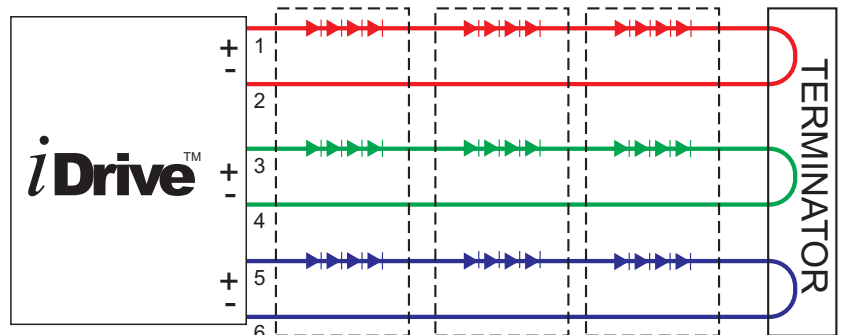**Safety:**
EN 60595-1 & EN 61558-1

CE

Typical wiring configurations for 350mA LED 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.

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SPECIFICATIONS
ELECTRICAL CHARACTERISTICS

Input

Input Voltage Range	: 100 - 240V AC
Input Frequency	: 50 - 60 Hz Power
Consumption	: 6 - 55 W Power
Power Factor	: 0.95
Efficiency	: 88%
Connection	: standard IEC
Insulation Class	: One

Output

Power Output Range	: 0 - 16.8 W Per Channel
Maximum Output Current	: 350mA @ 100% Maximum Output
Voltage	: 14V - 48V DC
Connection	: RJ45 (8 pin)

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%
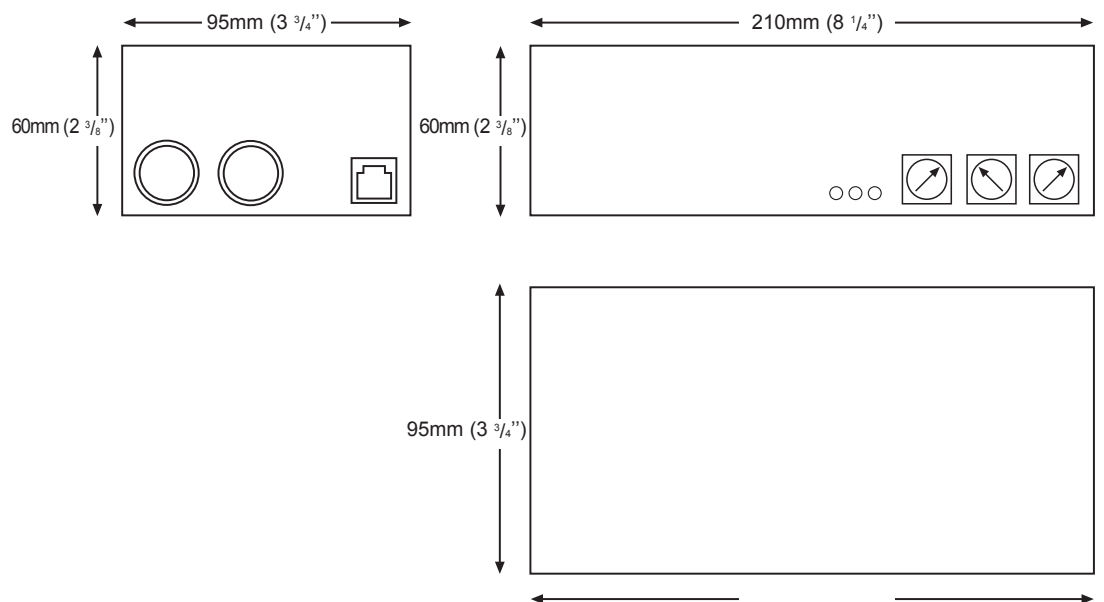
Dimensions

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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