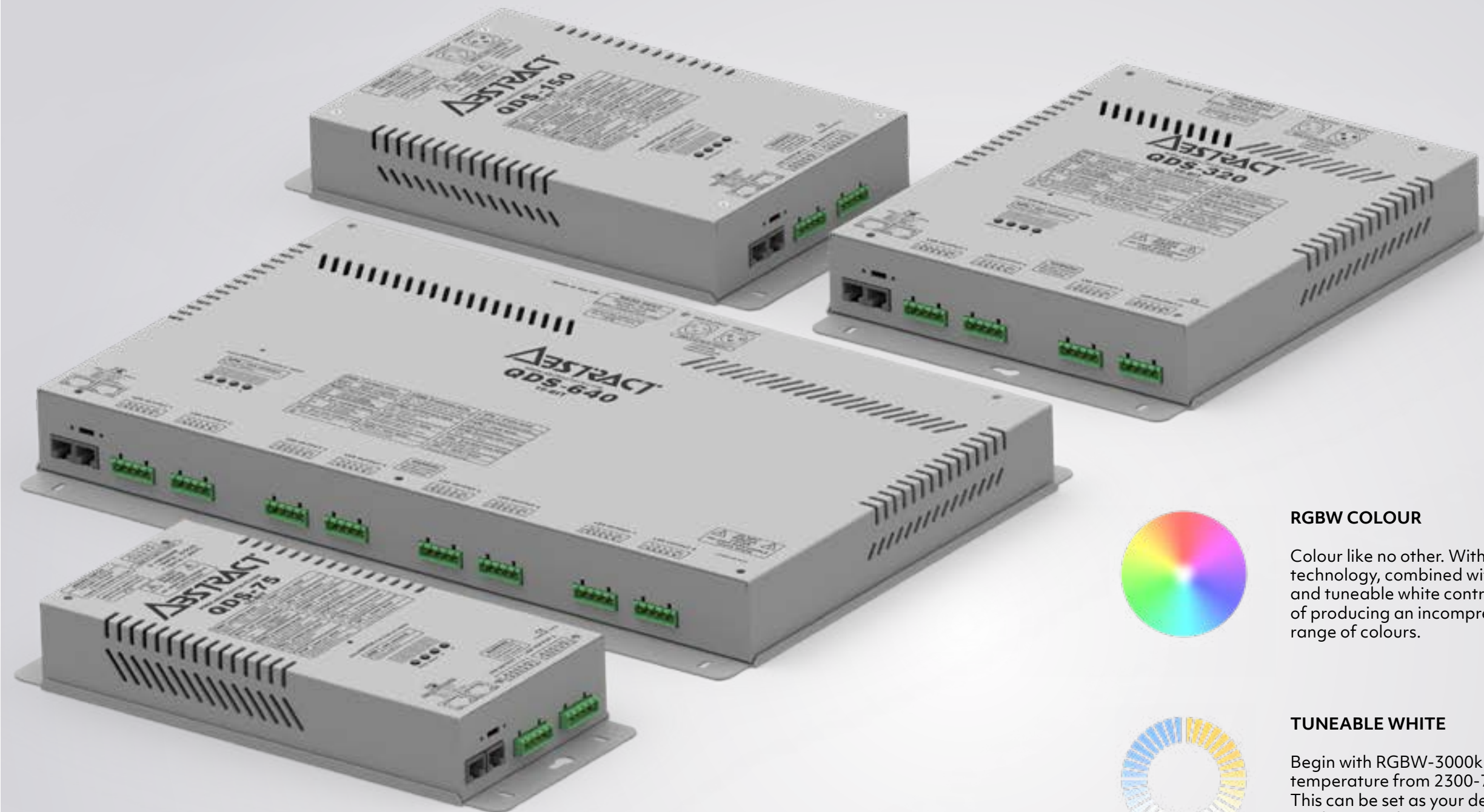# ΔBSTRACT®

QDS-75
QDS-150
QDS-320
QDS-640

USER MANUAL
V-4.1

QDS RANGE

———————

Designed to work with 24v RGB and RGBW LED strip: Power up to 300% more linear meters per watt; experience super smooth 16bit dimming; control RGB colour & CCT from 2300-7000k; all from the most intelligent DMX driver range on the market.

RGBW COLOUR

Colour like no other. With pioneering power balance technology, combined with all new 16bit technology and tuneable white control, our new driver is capable of producing an incomprehensible and unrivalled range of colours.
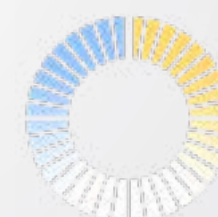
TUNEABLE WHITE

Begin with RGBW-3000k LED and adjust colour temperature from 2300-7000k directly from the driver. This can be set as your desired White in 4 channel mode, or set driver to 5ch mode for R,G,B, Tuneable White control via DMX

SMOOTH DIMMING

Experience super smooth dimming with 65,000 dimming steps from 0-100% in 16bit mode, or simulate the same dimming performance in 8bit fade mode without the need for a 16bit controller. (Standard 8bit mode available too)

POWER BALANCE MODE

Our unique power balancing technology ensures that all colours are driven equally for even output across primary, secondary and tertiary colours. Resulting in lower energy consumption, with up to 300% more linear meters driven per watt, and increased longevity.

QDS-75

Voltage **24V**

LED Outputs **2**

Output Current **5A Per Channel**

Power Consumption **75W**

Channels **1-8Ch (RGB[W]x2)**

Power Input Mains **110-240VAC**

Data Connections **3 Pin XLR / RJ45**

LED Connection **5 Pin Pheonix Connector**

Operating Temp Range **-20 to 50°C**

DIMENSIONS

126.60mm
48.40mm
311mm
265mm
48.40mm
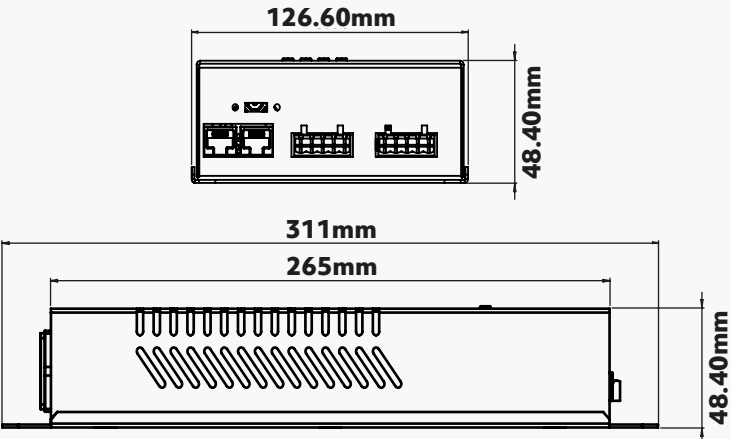
QDS-150

Voltage **24V**

LED Outputs **2**

Output Current **5A Per Channel**

Power Consumption **150W**

Channels **1-8Ch (RGB[W]x2)**

Power Input Mains **110-240VAC**

Data Connections **3 Pin XLR / RJ45**

LED Connection **5 Pin Pheonix Connector**

Operating Temp Range **-20 to 50°C**

DIMENSIONS

178mm
48.40mm
311mm
265mm
48.40mm

QDS-320

Voltage **24V**

LED Outputs **4**

Output Current **5A**

Power Consumption **320W**

Channels **1-16Ch (RGB[W]x4)**

Power Input Mains **110-240VAC**

Data Connections **3 Pin XLR / RJ45**

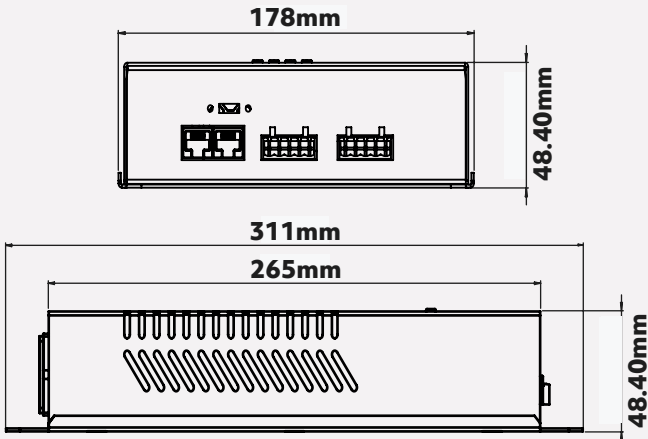LED Connection **5 Pin Pheonix Connector**

Operating Temp Range **-20° to 50°C**

DIMENSIONS

234mm
48.40mm
311mm
265mm
48.40mm

QDS-640

Voltage **24V**

LED Outputs **8**

Output Current **5A**

Power Consumption **640W**

Channels **1-32Ch (RGB[W]x8)**

Power Input Mains **110-240VAC**

Data Connections **3 Pin XLR / RJ45**

LED Connection **5 Pin Pheonix Connector**
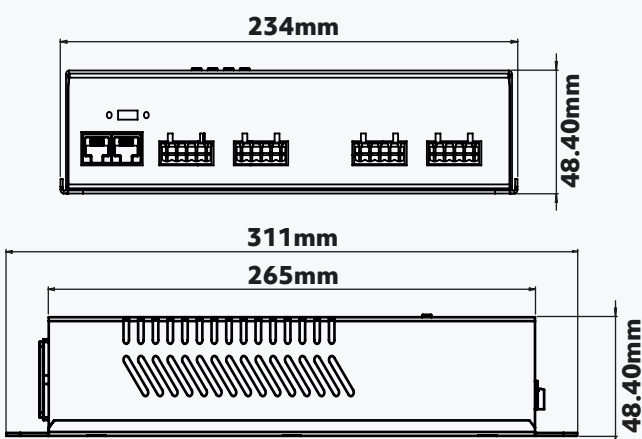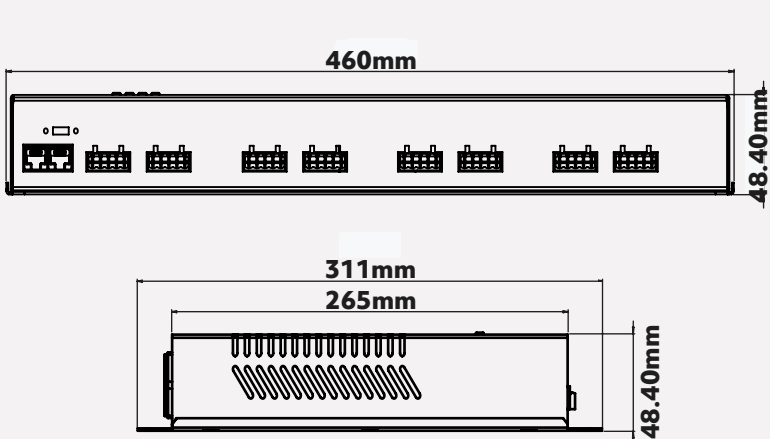
Operating Temp Range **-20° to 50°C**

DIMENSIONS

460mm
48.40mm
311mm
265mm
48.40mm

QDS-75   QDS-150   QDS-320   QDS-640

	QDS-75	QDS-150		QDS-320		QDS-640	
	Total Load	Load Per Output	Total Load	Load Per Output	Total Load	Load Per Output	Total Load
TF-HP-RGB/ QF-HP-RGBW/ HT30-RGBW	15M	15M	30M	15M	60M	15M	120M
NF-SQ-RGB/ NF-D-RGB/ HT30-RGB	10M	10M	20M	10M	40M	10M	80M
MF-SP	15M	15M	30M	15M	60M	15M	120M
MF-HP / MF-UP / HT30-S	5M	5M	10M	5M	20M	5M	40M

QDS-75 / 150 / 320 / 640

WARNING: Although this unit uses similar connectors to a computer network, it is not compatible. Network equipment may be damaged if you connect this unit to a computer network.

3 Pin XLR

DMX Connection

Pin 1: Ground

Pin 2: Data -

Pin 3: Data +

CAT5 RJ45

Alternative DMX

Pin 1: Data +

Pin 2: Data -

Pin 3: Ground

Pin 4: 48V

Pin 5: 48V (switchable)

Pin 6: 48V

Pin 7: Ground

Pin 8: Ground

Mains IEC

110-240VAC

5 Pin Pheonix Connector

LED Output Connection

PIN 1 = WHITE -

PIN 2 = BLUE -

PIN 3 = GREEN -

PIN 4 = RED -

PIN 5 = 24V +

QDS-75 / 150 / 320 / 640

MAINS INPUT IEC

MAINS INPUT IEC

MAINS INPUT IEC

MAINS INPUT IEC

DMX OUTPUT VIA 3 PIN XLR

DMX INPUT VIA 3 PIN XLR

DMX OUTPUT VIA RJ45

DMX INPUT VIA RJ45

LED OUTPUTS 5 PIN PHOENIX

LED OUTPUTS 5 PIN PHOENIX

LED OUTPUTS 5 PIN PHOENIX

LED OUTPUTS 5 PIN PHOENIX
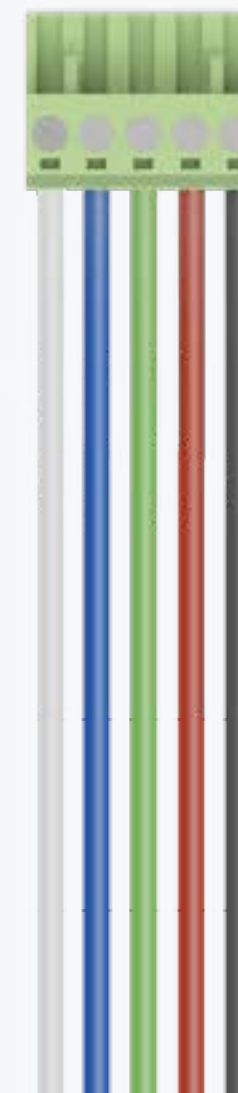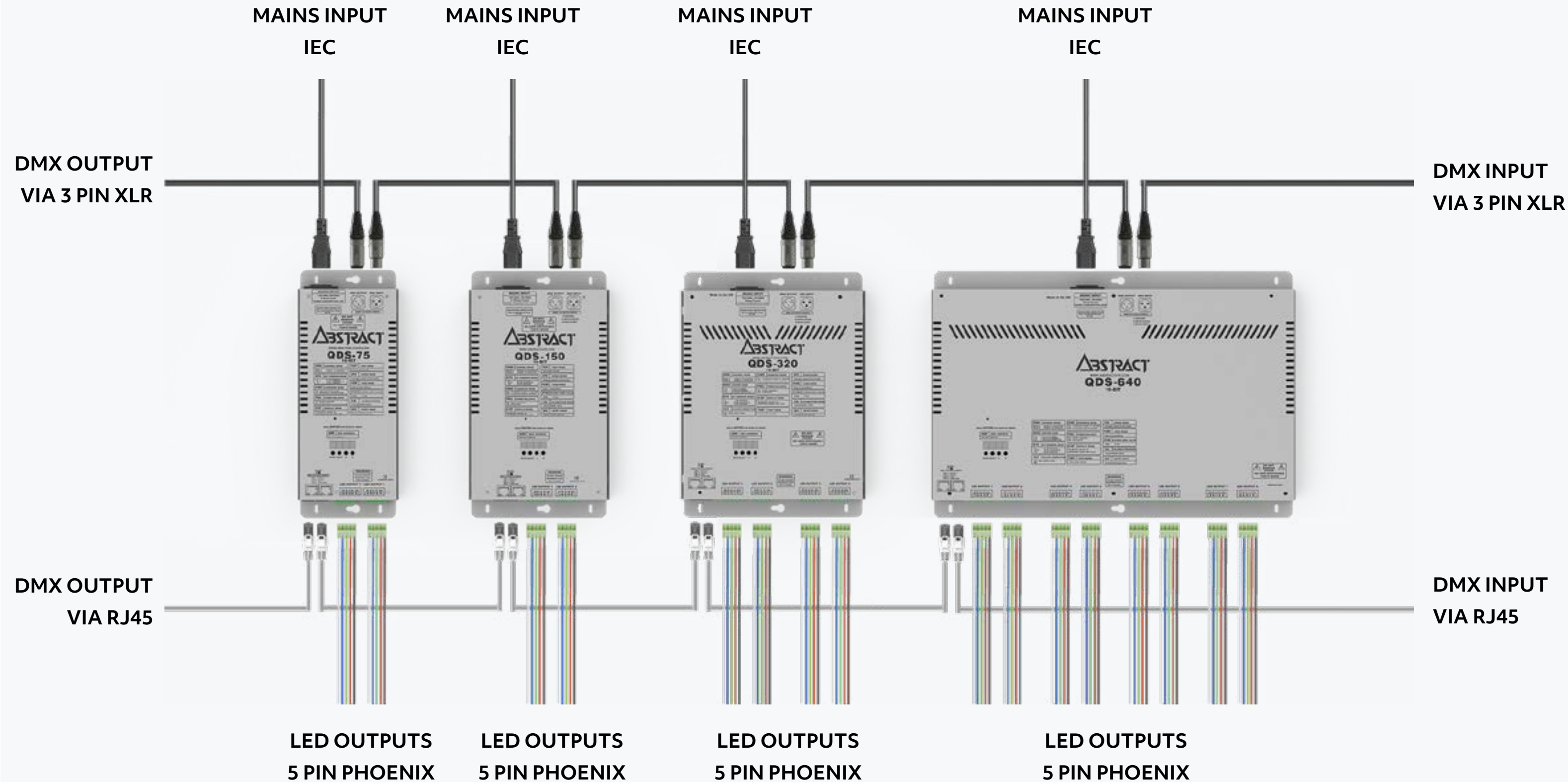
What will this unit do?

This unit is a power unit to control colour changing or single colour AVR flexible LED strip. It will not operate 1 watt or 3 watt high power fixtures. It is controlled by a DMX512 lighting controller or its own built in programmes. The outputs have 16-bit dimming with low flicker. The colour temperature of the white channel can be adjusted from the control menu or by DMX.

The unit (depending on model) has two, four or eight outputs each of which can drive 5 metres of flexible LED strip (up to 4 amps per colour per output, total load depends on the maximum capacity of the unit).

The LED outputs are overload and short-circuit protected. The LEDs will blink on and off and the display will show an error if the outputs are overloaded. The unit is fully protected and no damage will be caused to the driver or the LEDs.

Model numbers

QDS-75: Two RGBW outputs, maximum load 75W

QDS-150: Two RGBW outputs, maximum load 150W

QDS-320: Four RGBW outputs, maximum load 320W

QDS-640: Eight RGBW outputs, maximum load 640W

Connecting up

First install the LED flexible strips in the desired location, then connect them to the QDS driver units using 5-way cabling (for RGBW). The LED strips connect to the 5 way terminal blocks. The correct wiring for the terminal blocks is:

Terminal 1=White negative
Terminal 2=Blue negative
Terminal 3=Green negative
Terminal 4=Red negative
Terminal 5=positive common
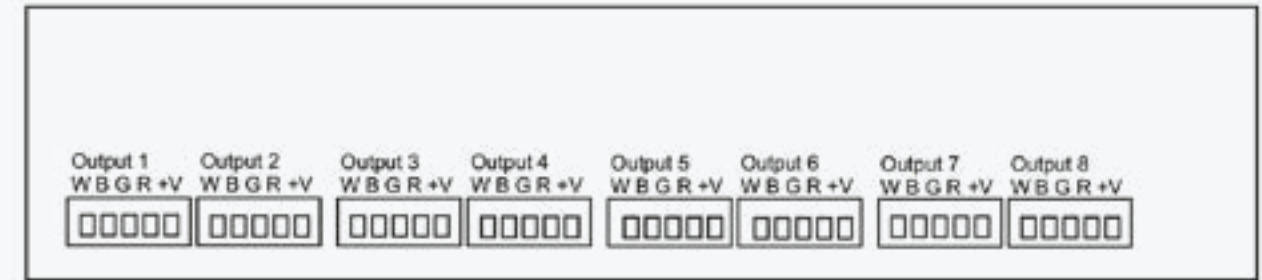
If single colour LED tape is being used, the positive connections must be commoned in terminal 5. For single colour tapes the output channels are numbered:

Terminal 1=Channel 4
Terminal 2=Channel 3
Terminal 3=Channel 2
Terminal 4=Channel 1
Terminal 5 positive common

Ensure that no electrical part of the LED tape is shorted to any metalwork. LED shorts may cause stray voltages which will prevent the DMX control system from working.

There is a different model of the unit for 12V and 24V tape. Do not connect 12V tape to a 24V driver unit as the tape may be damaged. If 24V tape is connected to a 12V driver unit, no damage will be caused but only the red LEDs will operate.

If lengths of tape over 5 metres are being used, run a second feed cable to the far end of the tape, connected into the same terminals on the driver. The LED tape can only carry a limited amount of current and over a long length the blue and green LEDs at the end of the tape will become dim.

Position the driver as close to the LED tape as possible, long cable runs will cause volt drop and loss of brightness.

Install a mains power feed to the QDS unit.

If your installation includes several QDS units, you can control them all together by linking them using 3 pin XLR (DMX) cables.

Setting options

Hold down the left hand button for about 3 seconds to enter setup menu mode

Hold the ENT button to get into the setup menu.
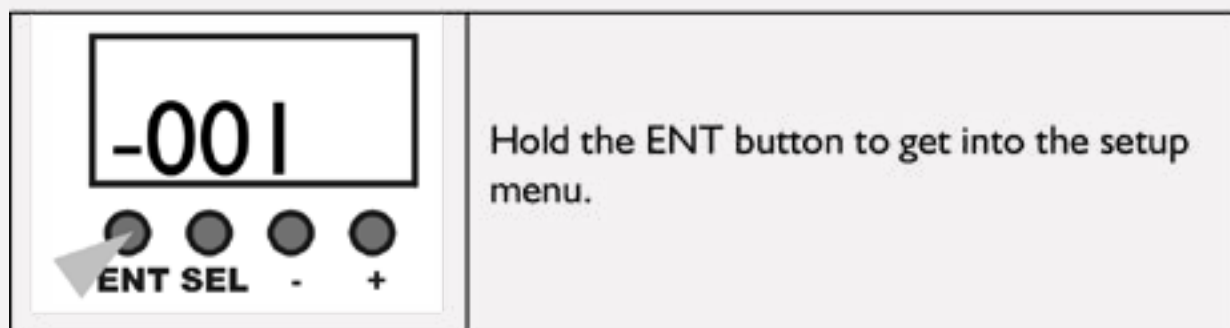
The setup menu options are

ADDR – set DMX address

CHAN – set number of output channels
    modes are:
    8-output unit
    32 – all outputs individual control
    16 – Outputs 1-2, 3-4, 5-6, 7-8 linked in pairs
    8 – Outputs 1-2-3-4 linked and 5-6-7-8 linked
    4 – all outputs linked together

    4-output unit
    16 – all outputs individual control
    8 – Outputs 1-2, 3-4 linked in pairs
    4 – all outputs linked together

    2-output unit
    8 – outputs individual control
    4 – both outputs linked together

MODE – sets the DMX control mode for each output
    3-CH – RGB mode (white channel is not used)
    4-CH – RGBW mode
    5-CH – RGBW mode with colour correction channel

BITS – set 8 or 16 bit control mode
    8 – 8 bit control mode
    8-FA – 8 bit control mode with 16 bit smoothing / fading
    16 – 16 bit control mode

CCT – white colour temperature
    OFF – no colour correction is applied
    2300-7000 – sets the white output to the specified colour temp (by automatically adjusting the RGB channels)

COND – links the 4 outputs on each socket so one DMX channel controls all 4 outputs

PBAL – sets power balancing mode.
    When set to OFF, all LEDs run at full power
    When set to ON, when 2 or more channels on the same output are on, the output power is adjusted so that only one channel's worth of power is used. For example if only red is on full, Red output will be at 100%. If red and green are on full, both Red and Green outputs will be at 50%. This balances the intensity of colours and allows you to run more LEDs from the driver.

    Note: if you are using single colour tape, set this option to OFF to prevent interaction between the intensity of the channels on each output. If COND mode is set to ON, PBAL mode is disabled.

DISP – turns the display on or off during normal operation. This does not affect display during menu option setting.

TST – enables test mode when no DMX is present.

SPD – sets speed for patterns in test mode

FADE – turns fade on or off for test mode

STOR – store the current DMX input for use in test mode STOR option

CAL – enters colour calibration mode. Change the option to Y and press ENT, then the display shows CALR. Use the -/+ buttons to set the calibration factor for Red. Use the ENT button to select CALG, CALB, CALW. Hold the ENT button to leave calibration mode.

OPC – option clear, resets options to factory default.

Test mode options

In test mode, when no DMX is connected to the unit the display shows one of the following options. Press either of the left 2 buttons to change the option

RGB (Red-Green-Blue sequence)
RED (Static red)
YELL (Static yellow)
GREE (Static green)
CYAN (Static cyan)
BLUE (Static blue)
PURP (Static purple)
USER – use the -/+ buttons to select a colour. This colour will be stored.
WHIT (Static white – uses the white channel, no RGB)
ALL (All channels on full – if PBAL is on, then all outputs will be 25% power)
RGBW (Red-Green-Blue-White sequence)
RAIN (Red-Amber-Yellow-Green-Cyan-Blue-Indigo-Purple sequence, offset across the outputs)
STOR – replay the stored colour captured using the STOR option
CCT – use the -/+ buttons to select desired white colour temp
C-WH (runs through all white colours from 2300K – 7000K)

DMX control

The DMX base address of each output is set independently using the ADD1 - ADD8 options on the menu.

DMX functions

The unit recognises the following DMX commands for each output channel.

MODE=3-CH, BITS=8 or 8-FA

Addr	Red 0-100%
Addr+1	Green 0-100%
Addr+2	Blue 0-100%

MODE=4-CH, BITS=8 or 8-FA

Addr	Red 0-100%
Addr+1	Green 0-100%
Addr+2	Blue 0-100%
Addr+3	White 0-100%

MODE=5-CH, BITS=8 or 8-FA

Addr	Red 0-100%
Addr+1	Green 0-100%
Addr+2	Blue 0-100%
Addr+3	White 0-100%
Addr+4	White colour temp 0-21=2300 22-43=2500 44-65=2700 66-87=3000 88-109=3500 110-131=4000 132-153=4500 154-175=5000 176-197=5500 198-219=6000 220-241=6500 242-255=7000

MODE=3-CH, BITS=16

Addr	Red Coarse
Addr+1	Red Fine
Addr+2	Green Coarse
Addr+3	Green Fine
Addr+4	Blue Coarse
Addr+5	Blue Fine

MODE=4-CH, BITS=16

Addr	Red Coarse
Addr+1	Red Fine
Addr+2	Green Coarse
Addr+3	Green Fine
Addr+4	Blue Coarse
Addr+5	Blue Fine
Addr+6	White Coarse
Addr+7	White Fine

MODE=5-CH, BITS=16

Addr	Red Coarse
Addr+1	Red Fine
Addr+2	Green Coarse
Addr+3	Green Fine
Addr+4	Blue Coarse
Addr+5	Blue Fine
Addr+6	White Coarse
Addr+7	White Fine
Addr+8	White colour temp 0-21=2300 22-43=2500 44-65=2700 66-87=3000 88-109=3500 110-131=4000 132-153=4500

	154-175=5000 176-197=5500 198-219=6000 220-241=6500 242-255=7000

If COND=ON, BITS=8 or 8-FA

Addr	RGBW 0-100%

If COND=ON, BITS=16

Addr	RGBW coarse
Addr+1	RGBW fine

DMX channel allocations- QDS-640

CHAN=32, BITS=8 or 8-FA

Output no	MODE=3	MODE=4	MODE=5
Output 1	1-3	1-4	1-5
Output 2	4-6	5-8	6-10
Output 3	7-9	9-12	11-15
Output 4	10-12	13-16	16-20
Output 5	13-15	17-20	21-25
Output 6	16-18	21-24	26-30
Output 7	19-22	25-28	31-35
Output 8	23-27	29-32	36-40
Total chans	27	32	40

CHAN=16, BITS=8 or 8-FA

Output no	MODE=3	MODE=4	MODE=5
Output 1,2	1-3	1-4	1-5
Output 3,4	4-6	5-8	6-10
Output 5,6	7-9	9-12	11-15
Output 7,8	10-12	13-16	16-20
Total chans	12	16	20

CHAN=8, BITS=8 or 8-FA

Output no	MODE=3	MODE=4	MODE=5
Output 1,2,3,4	1-3	1-4	1-5
Output 5,6,7,8	4-6	5-8	6-10
Total chans	6	8	10

CHAN=4, BITS=8 or 8-FA

Output no	MODE=3	MODE=4	MODE=5
Output 1,2,3,4, 5,6,7,8	1-3	1-4	1-5
Total chans	12	16	20

CHAN=32, BITS=16

Output no	MODE=3	MODE=4	MODE=5
Output 1	1-6	1-8	1-9
Output 2	7-12	9-16	10-18
Output 3	13-18	17-24	19-27
Output 4	19-24	25-32	28-36
Output 5	25-30	33-40	37-45
Output 6	31-36	41-48	46-54
Output 7	37-42	49-56	55-63
Output 8	43-48	57-64	64-72
Total chans	48	64	72

CHAN=16, BITS=16

Output no	MODE=3	MODE=4	MODE=5
Output 1,3	1-6	1-8	1-9
Output 3,4	7-12	9-16	10-18
Output 5,6	13-18	17-24	19-27
Output 7,8	19-24	25-32	28-36
Total chans	24	32	36

CHAN=8, BITS=16

Output no	MODE=3	MODE=4	MODE=5
Output 1,2,3,4	1-6	1-8	1-9
Output 5,6,7,8	7-12	9-16	10-18
Total chans	12	16	18

CHAN=4, BITS=16

Output no	MODE=3	MODE=4	MODE=5
Output 1,2,3,4, 5,6,7,8	1-6	1-8	1-9
Total chans	6	8	9

DMX channel allocations- QDS-320

CHAN=16, BITS=8 or 8-FA

Output no	MODE=3	MODE=4	MODE=5
Output 1	1-3	1-4	1-5
Output 2	4-6	5-8	6-10
Output 3	7-9	9-12	11-15
Output 4	10-12	13-16	16-20
Total chans	12	16	20

CHAN=8, BITS=8 or 8-FA

Output no	MODE=3	MODE=4	MODE=5
Output 1,2	1-3	1-4	1-5
Output 3,4	4-6	5-8	6-10
Total chans	6	8	10

CHAN=4, BITS=8 or 8-FA

Output no	MODE=3	MODE=4	MODE=5

Output 1,2,3,4	1-3	1-4	1-5
Total chans	12	16	20

CHAN=16, BITS=16

Output no	MODE=3	MODE=4	MODE=5
Output 1	1-6	1-8	1-9
Output 2	7-12	9-16	10-18
Output 3	13-18	17-24	19-27
Output 4	19-24	25-32	28-36
Total chans	24	32	36

CHAN=8, BITS=16

Output no	MODE=3	MODE=4	MODE=5
Output 1,2	1-6	1-8	1-9
Output 3,4	7-12	9-16	10-18
Total chans	12	16	18

CHAN=4, BITS=16

Output no	MODE=3	MODE=4	MODE=5
Output 1,2,3,4	1-6	1-8	1-9
Total chans	6	8	9

DMX channel allocations- QDS-75 and QDS-150

CHAN=8, BITS=8 or 8-FA

Output no	MODE=3	MODE=4	MODE=5
Output 1	1-3	1-4	1-5
Output 2	4-6	5-8	6-10
Total chans	6	8	10

CHAN=4, BITS=8 or 8-FA

Output no	MODE=3	MODE=4	MODE=5

Output 1,2	1-3	1-4	1-5
Total chans	12	16	20

CHAN=8, BITS=16

Output no	MODE=3	MODE=4	MODE=5
Output 1	1-6	1-8	1-9
Output 2	7-12	9-16	10-18
Total chans	12	16	18

CHAN=4, BITS=16

Output no	MODE=3	MODE=4	MODE=5
Output 1,2	1-6	1-8	1-9
Total chans	6	8	9

Error displays

If an output channel detects an overload condition, all 4 channels of the output will turn off. The unit will turn the output back on after about 1 second. If the overload is still present the output will blink repeatedly.

The display shows an error message

E-R1

E indicates an error

R shows the channel and may be R G B W (W is shown as W)
1 shows the output number 1-8

If there is an overload on more than one channel, the messages will sequence through the error channels.

ABSTRACT®

QDS-75
QDS-150
QDS-320
QDS-640