

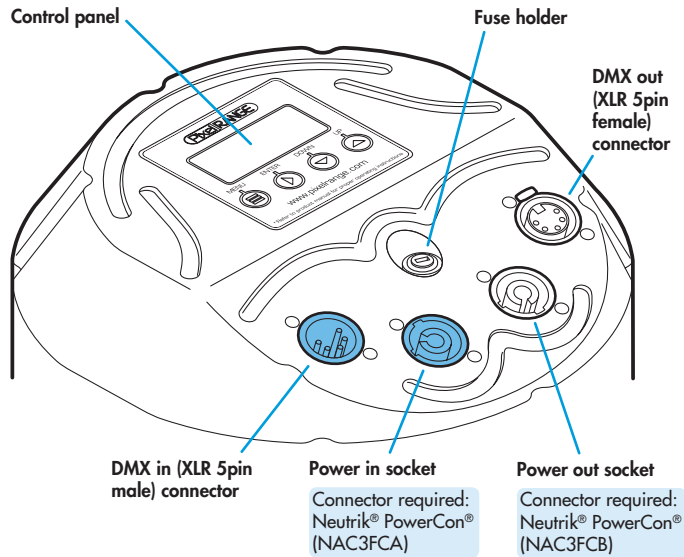
General set up

- 1 Mount the fixture in the required position. The integral yoke can act as a floor stand or hanger.

Important

- When suspended off ground, always use a safety wire rated to a minimum of 40kg (88lbs) through one of the corner holes in the yoke.

- 2 Where external control is to be used, connect a DMX lead (XLR 5-pin female) to the input socket at the rear of the fixture.



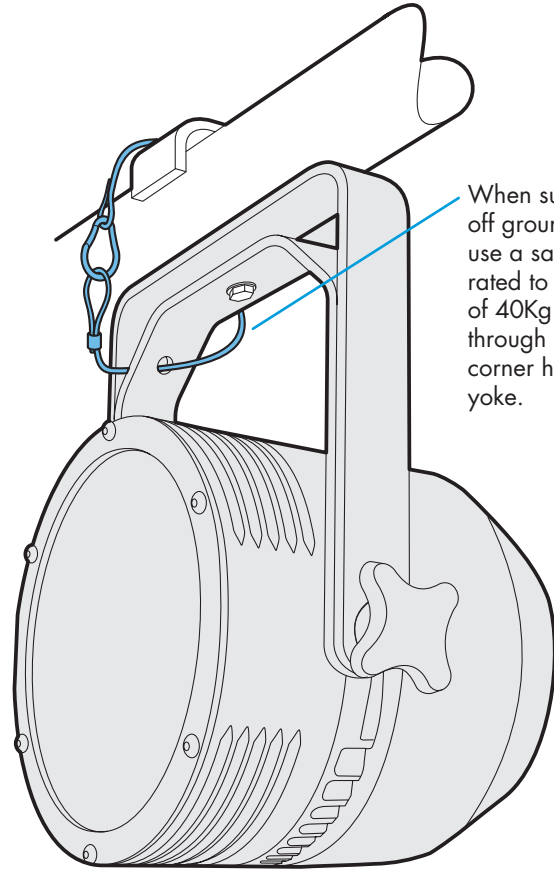
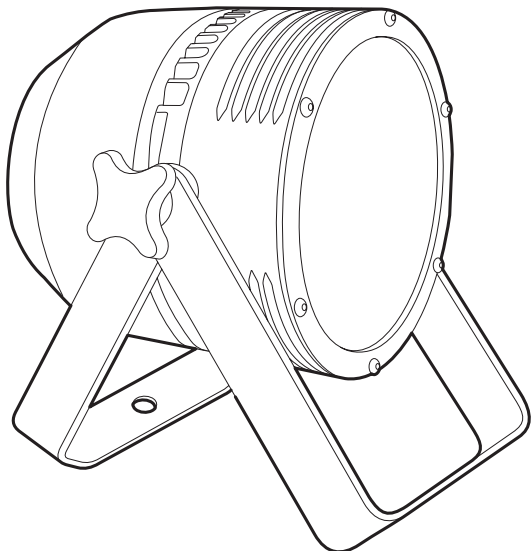
- 3 Where other fixtures are to be used in a control daisy-chain, connect a DMX lead (XLR 5-pin male) to the output socket at the rear of the fixture.

- 4 Connect power to the fixture using a Neutrik® PowerCon® connector. Insert the connector and twist it clockwise until it clicks into place.

Important

- If power daisy-chaining fixtures, do not exceed a total load of 3kW in a single daisy chain (subject to supply and cabling restrictions). Maximum power requirement per fixture: 112 Watts.

- 5 Use the control panel to access the internal menu and choose the appropriate operation mode and related settings (see over).



When suspended off ground, always use a safety wire rated to a minimum of 40Kg (88lbs) through one of the corner holes in the yoke.

Factory reset (perform this prior to new use)

To clear previous settings: At the rear panel, press the middle two buttons (▶ and ◀) for two seconds while the current address and mode are being displayed. The four digit display will show **FRE T** then **SET** to indicate that the fixture has been returned to its default condition. This is useful to remove any settings that might cause confusion in a new configuration (e.g. master intensity settings).

Operation modes

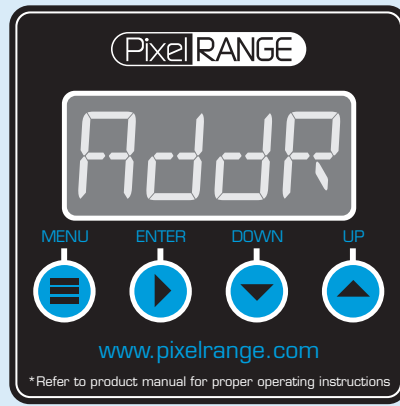
The QPar provides a range of operation modes. These are selected using the **Mode** section of the control menu:

- DMX** Allows RGBW control via DMX input. Internal chase effects are not available within this mode.
- MANU** Provides RGBW colour mixing independently of any external control. Use the internal control menu (**MAN** section) to select the required colour values.
- EF d** Allows you to select chase effects via DMX input (no RGBW mixing is possible). Requires 7 DMX channels.
- EF M** Allows the display of the dual internal chase effects, independently of any external control. Use the internal control menu (**PRG** section) to select the required chase effects, speeds and cross fades.
- 4+E** Provides control of RGBW mixing and selection of the dual internal chase effects via DMX input. Requires 11 DMX channels.
- 16bT** Allows RGBW control via DMX input, using two 8bit channels per colour. Internal chase effects are not available within this mode.

QPar personalities are available for a variety of controllers. Please see www.pixelrange.com for details.

General notes

- Ensure that only one DMX device in the chain is set as master (e.g. the lighting desk). This fixture is usually set to slave mode.
- This fixture is shipped with the DMX address set to 001.
- The four digit display can be set to switch off when not in use. To restore, press **⏏**. To alter this mode use: **PERF > DISP**.



Using the menu

- When not in the menu, the four digit display scrolls the current DMX address and mode. The display's right hand decimal point (data dot) is used to indicate status (see below).
- Press **⏏** to enter the menu. The four digit display will show **Addr**.
- Use **⏏** and **⏏** to move between menu options (or to change a value within an option).
- Press **⏏** to enter an option (or to fix a changed value within an option and return to the previous option level). *Note: If you do not press **⏏** to fix a value, operation will revert to the previously set mode at the next power on.*
- Press **⏏** to exit from a menu option (and eventually exit the menu completely).

Master/slave/data indication

The right hand decimal point (data dot) of the display is used to indicate the master/slave settings and also the presence of a DMX input signal, as shown below:



Data dot ON	Master mode
Data dot FLASHING	Slave mode (DMX data input present)
Data dot OFF	Slave mode (no DMX data present)

Notes:

- Ensure that only one DMX device in the chain is set as master (e.g. the desk).
- Use **PERF > DATA** to change between master and slave modes.
- When set to master mode, the fixture will scroll **MASTER** in place of a DMX address (when not within the menu).
- If the display has been set to auto off (**DISP > OFF**), the data dot will remain active but at a lower brightness.

DMX links and termination

This section provides useful advice for gaining reliable operation from your DMX installation:

- Use good quality flexible twisted pair cable that has a nominal characteristic impedance of 120 ohms. Microphone cables have a lower impedance and a higher capacitance, which can lead to data errors.
- Use a daisychain arrangement to link fixtures together, so that the output of one fixture is connected to the input of the next.
- Connect no more than 32 devices to a single DMX run. If further fixtures are needed, then use a DMX booster to allow up to 32 more fixtures to be attached.
- Never split a DMX cable to form two branches (a Y-split). If separate branches are required, use a powered DMX splitter.
- Ensure that the devices at each end of the daisychain are both terminated using a 120 ohm resistor (usually contained within a separate XLR connector that has no cable - the resistor forms a link between pins 2 and 3). Control desks are often internally terminated.

It is possible to get away with breaking some of the above rules, particularly on smaller installations that have short cable runs and few fixtures. However, results can be unpredictable and problems will inevitably hit you at the very worst time: During your show.

Channel layouts within modes 4+E and EF d

The table right shows how colour mixing, chase effects and master intensity controls are mapped to DMX channels for the 4+E and EF d modes. In all modes, the first channel of the fixture occurs at the DMX address selected using **Addr** and successive channels for the fixture follow from there.

Channel	4+E	EF d
1	Red	[1 Effect
2	Green	[1 Speed
3	Blue	[1 Xfade
4	White	[2 Effect
5	[1 Effect	[2 Speed
6	[1 Speed	[2 Xfade
7	[1 Xfade	Master int.
8	[2 Effect	-
9	[2 Speed	-
10	[2 Xfade	-
11	Master int.	-

Channel layouts within modes DMX and 16BT

When using the **DMX** and **16BT** modes, the manner in which LED emitters are assigned to DMX channels is determined by the **PERF > RES** option. The **DMX** and **16BT** modes do not use chase effects. The first channel of the fixture occurs at the DMX address selected using **Addr** and successive channels for the fixture follow from there.

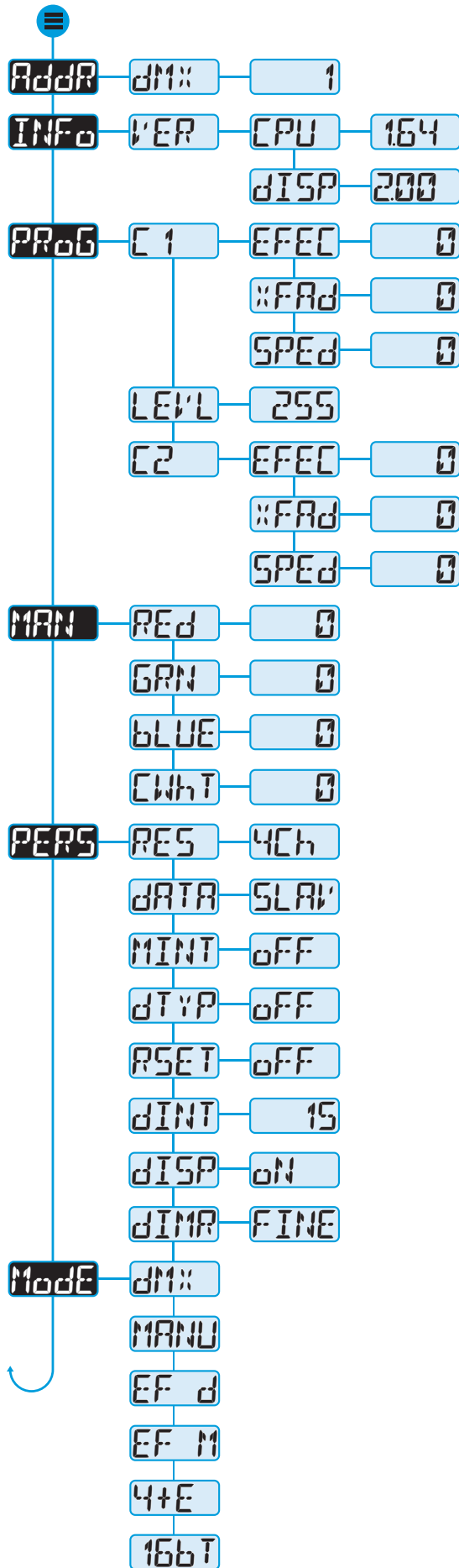
coarse (c) = High channel for 16-bit,
fine (f) = Low channel for 16-bit

Channel	DMX (RES=1)	DMX (RES=3)	DMX (RES=4)
1	All	Red	Red
2	Mast. int.*	Green	Green
3		Blue	Blue
4		Mast. int.*	White
5			Mast. int.*

Chan.	16bT (RES=1)	16bT (RES=3)	16bT (RES=4)
1	All (coarse)	Red (c)	Red (c)
2	All (fine)	Red (f)	Red (f)
3	Mast. int.*	Green (c)	Green (c)
4		Green (f)	Green (f)
5		Blue (c)	Blue (c)
6		Blue (f)	Blue (f)
7		Mast. int.*	White (c)
8			White (f)
9			Mast. int.*

* Master intensity is only enabled for **DMX** and **16BT** modes when the **PERF > MINT** option is set to **off**. Master intensity always uses a single 8-bit channel and appears the final control channel.

Control menu contents



Sets the base DMX address from which the control channels will begin.

Shows the main processor software revision. No changes are possible within this option. Press while viewing this option to see the software sub-revision.

Shows the display controller software revision. No changes are possible within this option.

Selects the primary internal chase effect. See Chase effects for descriptions. Select *ModE* > *EF M* to show the selected chase.

Selects the cross fade speed between the steps of the selected *C 1* chase effect.

Selects the speed of the selected *C 1* chase effect.

Selects the master intensity level of chase effects *C 1* and *C 2*.

Selects the secondary internal chase effect. See Chase effects for descriptions. Select *ModE* > *EF M* to show the selected chase.

Selects the cross fade speed between the steps of the selected *C 2* chase effect.

Selects the speed of the selected *C 2* chase effect.

Sets the red intensity. Select *ModE* > *MANU* (manual) to show the result.

Sets the green intensity. Select *ModE* > *MANU* (manual) to show the result.

Sets the blue intensity. Select *ModE* > *MANU* (manual) to show the result.

Sets the cool white intensity. Select *ModE* > *MANU* (manual) to show the result.

Selects number of channels required to control all emitters. Options are 1, 3 and 4. Emitters are grouped together accordingly.

Determines whether this fixture will act as a master controlling others. When controlled via DMX this fixture must be set to *SLAV*.

DMX and *16bT* modes only. When set *ON* this enables the master intensity channel.

DMX mode only. When set *ON*, allows you to determine the dimmer type via DMX. This channel is always the final DMX channel. See 'Changing dimmer curve via DMX'.

When set *ON*, this option scrolls through the primary colours at power on to demonstrate correct operation of the emitters.

Determines the intensity of the four digit control panel display. Values range from 0 (dimmiest) to 15 (brightest).

When set to *FlOFF*, the control panel display will blank out 60 seconds after the menu is exited. The data dot indicator will remain active.

Provides a selection of dimmer curves (*FINE*, *T1* or *TUNG*) to suit particular circumstances. See next page for descriptions of each option.

RGBW control using an external DMX control input. *PERS* > *MINT* set to *ON* provides a master intensity in *DMX* and *16bT* modes. No chase effects are selectable.

Displays the resulting RGBW levels that are set via the *MAN* section of the internal menu. External DMX control is not possible in this mode.

Ch1 to 3: *C 1* Effect, Speed & Xfade, Ch4 to 6: *C 2* Effect, Speed & Xfade, Ch7: Master intensity.

Displays the chase effect(s) determined within the *PRoG* section. External DMX control is not possible in this mode.

DMX Ch1 to 4: RGBW colour mixing, Ch5 to 7: *C 1* Effect, Speed & Xfade, Ch8 to 10: *C 2* Effect, Speed & Xfade, Ch11: Master intensity.

16bit RGBW control using 2x the number of DMX channels determined by *PERS* > *RES*. *PERS* > *MINT* set to *ON* provides a master intensity. No chase effects are selectable.

Chase effects

This section describes each of the internal chase effects that are selectable either via the control menu ($PR06 > [1/[2 > EFEC]$) or using DMX values sent from an external source. To use the internal effects, set the $ModE$ option either to $EF M$ (for internal menu control), or $EF d$ or $4+E$ (for external DMX control).

DMX value	DMX %	EFEC value	Chase effect description	On/off ratio per cell	Cell sequence
0-7	0-2	00	Off	-	-
8-15	3-5	01	Rainbow chase forward	All on	A → B → C → D → E → F
16-23	6-9	02	Rainbow chase reverse	All on	F → E → D → C → B → A
24-31	10-11	03	White chase forward	1/5	A → B → C → D → E → F
32-39	12-15	04	White chase reverse	1/5	F → E → D → C → B → A
40-47	16-18	05	White group chase	1/2	AF → BE → CD
48-55	19-21	06	White strobe	1/1	All together
56-63	22-24	07	Red strobe	1/1	All together
64-71	25-27	08	Light purple strobe	1/1	All together
72-79	28-30	09	Yellow strobe	1/1	All together
80-87	31-34	10	Green strobe	1/1	All together
88-95	35-37	11	White strobe	1/10	All together
96-103	38-40	12	Light blue strobe	1/10	All together
104-111	41-43	13	Rainbow strobe	1/2	All together
112-119	44-46	14	Red/green/blue strobe	1/2	All together
120-127	47-50	15	Rainbow strobe	All on	All together
128-135	51-53	16	Red/green/blue strobe	All on	All together
136-143	54-56	17	Yellow/blue strobe	All on	All together
144-151	57-59	18	Rainbow chase	All on	ABC → DEF
152-159	60-62	19	Orange/blue chase	All on	ACE → BDF
160-167	63-65	20	Red/blue chase	All on	ACE → BDF
168-175	66-68	21	Red/yellow chase	All on	ABEF → CD
176-183	69-72	22	Red/green/blue chase reverse	All on	CF → BE → AD
184-191	73-75	23	Rainbow chase forward	All on	AB → CD → EF
192-199	76-77	24	Red/green/blue chase reverse	All on	EF → CD → AB
200-207	78-81	25	Static orange	All on	All together
208-215	82-84	26	Static yellow	All on	All together
216-223	85-87	27	Static light blue	All on	All together
224-231	88-90	28	Static purple	All on	All together
232-239	91-93	29	Static red	All on	All together
240-247	94-97	30	Static green	All on	All together
248-255	98-100	31	Static white	All on	All together

The 'On/Off ratio per cell' column indicates the proportion of time that a fixture will be showing output or be dark for a given effect. For example, 1/5 indicates that the fixture will be on for one part and off for 5 parts of the time.

Some effects are spread between six cells so that as well as colour changes, there are position changes (viewable if you are using the QPar as a master to control chases on other PixelRange fixtures - see 'Using master mode to drive other units'). The 'Cell sequence' column above indicates whether effect changes move between fixtures that are set at different cell addresses. The cell address boundaries are as follows:

Cell	DMX addresses
A	1 to 4
B	5 to 8
C	9 to 12
D	13 to 16
E	17 to 20
F	21 to 24

Note: When you use a single QPar and you choose a chase effect that spreads across different cells, you will see only the cell A parts of the effect, as listed in the table above.

Using master mode to drive other units

This unit can control any number of other PixelRange fixtures via DMX links, without the need for a control desk.

- 1 Set this unit as **master** (**PER5 > DATA > MAST**) and ensure all others are set to **slave** (**PER5 > DATA > SLAVE**). Connect all fixtures via DMX daisy-chain.

Note: Don't forget to terminate the devices at either end of the chain - see the section 'DMX links and termination'.

- 2 Set each slave to **Mode > DM**.
- 3 Set the master to either create chases or static colours:

Chases: Select **Mode > EF M** and then use **PRG > C 1** and **C 2** to create the required effects (see the 'Chase effects' table).

Static colours: Select **Mode > MANU** and then use **MAN > RED, GRN, BLUE** and **WHT** to mix the colour.

Note: The setting of **PER5 > RES** determines how the DMX channels are output when mixing static colours: **PER5 > RES=4** sends out separate red, green, blue and amber levels in repeated 4 channel blocks: i.e. 1 to 4, 5 to 8, etc. The **RES=3** setting retains the 4 channel blocks, but links the first and last channel of each block to the **MAN > RED** setting so that other RGBW units attached respond in the same way as the master when it combines red and amber in 3 channel mode. The **RES=1** setting links all DMX output channels so that all emitters can be controlled by a single setting (**MAN > RED**).

- 4 Set each slave DMX address (using **Addr > DM**) as appropriate:
 - For static colour mixing you can either set all fixtures to DMX channel 1 or position them at the beginning of any four channel cell: **ADD 1, ADD5, ADD9, AD 13, AD 17** or **AD2 1**. No channels are used above channel 24. The outputs within each cell will be the same.
 - For chases, six separate cells are output in groups of 4 DMX channels to give RGBW values per cell (24 channels in total). Set the address of each slave fixture according to which of the 6 cells you want them to appear within, or to begin with (for multi-cell fixtures): (**ADD 1** for cell A, **ADD5** for cell B, **ADD9** for cell C, **AD 13** for cell D, **AD 17** for cell E or **AD2 1** for cell F).

Dimmer curve options (PER5 > DIMP)

QPar provides three separate dimmer curve options which determine exactly how the digital values received via the DMX link are converted into emitter intensities. To alter the dimmer curve, go to the **PER5** menu option, choose the **DIMP** option, select the required setting and then press the **▶** button to save.

The three dimmer curve options are as follows:

- **FINE** Closely resembles the original PixelPar 90 dimmer curve with improved responses to low end values.
- **TV** Uses dimming frequencies that will eradicate any visible flicker when viewed by video cameras and broadcast systems.
- **TUNG** Alters the dimming response to closely emulate the smooth thermal lag action of standard tungsten bulbs. The **TUNG** setting can be used with all operation modes.

Changing the dimmer curve via DMX (PER5 > DTYP)

QPar allows you to change the dimming response curve remotely via DMX control. When enabled, the 'dimmer type' channel will be added as the last channel for the fixture, after the Master Intensity channels, if enabled. The dimmer curve via DMX setting affects the following modes: **DM**, **EBT** and **Y+E**.

To enable remote 'dimmer type' control: Go to the **PER5** menu, choose the **DTYP** option and change its setting to **ON**.

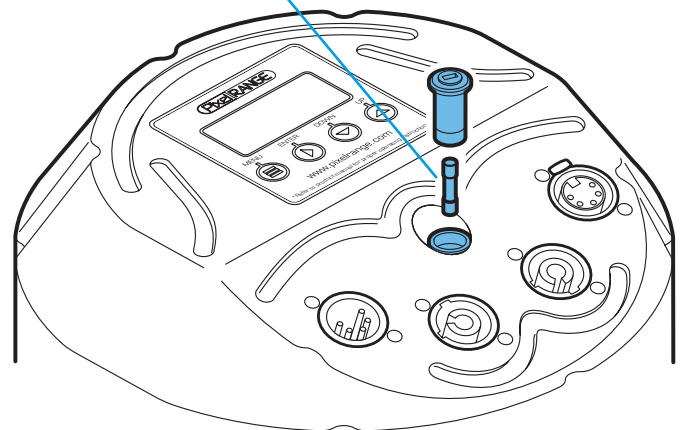
Once enabled, the value sent to the 'dimmer type' channel will dynamically affect which dimmer curves are used:

- Values 0 to 85 select the FINE dimmer response,
- Values 86 to 170 select the TUNGSTEN dimmer response,
- Values 171 to 255 select the TV dimmer response.

Fuse access

The single fuse is located at the rear of the fixture near to the DMX input connector. Use a small flat blade screw driver to twist the fuse holder anti-clockwise until the carrier can be extracted to reveal the fuse.

Fuse type: 20mm 4A (T4AH250VP) time delay, ceramic body



Troubleshooting

- **Display panel is blank:** Press a control panel button, if the display still does not show, check the input power and fuse.
- **No response during DMX control:** Check whether a master intensity input is required. **4+E** and **EF d** modes always require a master intensity input (channels 10 and 7 respectively). **dM::** and **EBT** have an optional master intensity, depending on the setting of **PEPS > MINT** (channels 4 and 7 respectively). If the **MINT** setting is **off** then no output will occur until a level greater than zero is applied to the master intensity channel. See pages 2 and 3 for details.

*Note: It is good practice to perform a factory reset before these fixtures are used on any new installation. This will ensure that settings like the **MINT** option are set to off and do not create the potential for confusion. See page 1 for details of how to perform a factory reset.*

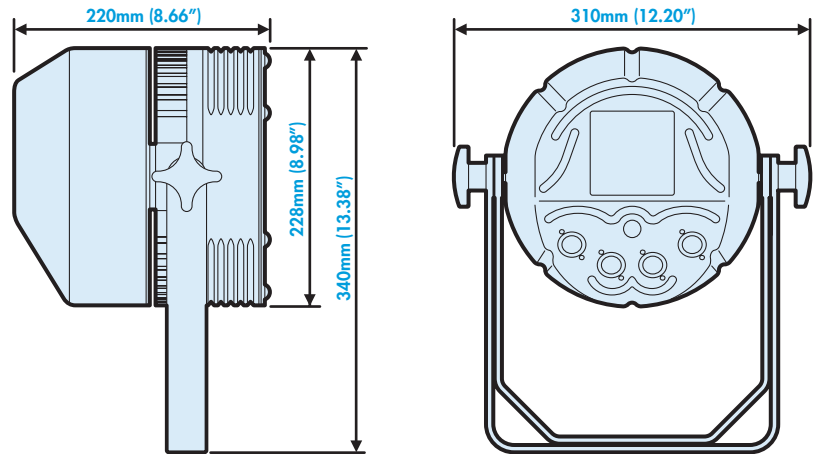
- **No response during DMX control:** If live DMX is connected, the right hand decimal point on the display should flash - if not, check the DMX cable(s) and the desk output.
- **Erratic operation during DMX control:** Check that the final fixture within the DMX daisy chain is correctly terminated with a 120 ohm terminator plug.
- **Erratic operation during DMX control:** Check that the selected **ModE** matches the personality being used on the control desk.
- **Erratic operation during DMX control:** Ensure that only one DMX device in the daisy chain is set as master.
- **Rapid colour/intensity changes not occurring:** Check whether the tungsten dimmer mode is selected (**PEPS > dIMP > TUNG**). This would slow the reaction times of the emitters and could mean that rapid changes are blended into each other. Choose a faster reacting dimmer mode.
- **Standalone chase effects not working:** Check that a chase has been programmed using **PRPG > C 1** and/or **PRPG > C 2** and also that **ModE > EF M** is selected. Check also that **PRPG > LEVEL** is not set at zero.
- **Standalone RGBW mixing not working:** Check that one or more colour values have been set within **MAN** section and also that the **ModE > MANU** is selected.

Firmware upgrades

Firmware upgrades are released from time to time in order to provide new operational features. The QPar has been designed to allow straightforward firmware upgrading via its DMX interface, a PixelU2D USB device and a computer. Please contact PixelRange technical support for details.

Specifications

Dimensions



Weight

Fixture and yoke: 7.5kg (16.5 lbs)

Power

Input voltage: 100 to 240V AC, 47 to 63Hz autosensing

Connectors: Supplied with cable only: live, neutral & earth

Power requirements: @ 230V/50Hz @ 115V/60Hz

Standby 8 Watts 8 Watts

Maximum (const.) 112 Watts 112 Watts

Approvals



Miscellaneous

Enclosure rating: IP20 (not protected against moisture ingress)

Control input: USITT DMX512 (input connector pin out below)

