

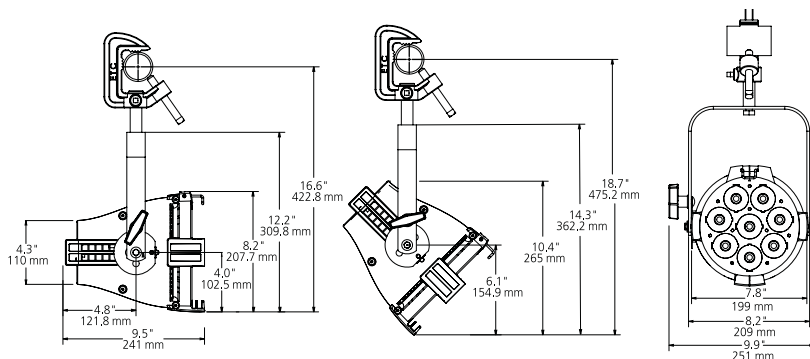
ETC Installation Guide

ColorSource® PAR Pearl v1.7

Overview

The ColorSource PAR Pearl is an affordable LED fixture that provides a bright, variable white light.

The ColorSource PAR Pearl is UL924 listed as a Directly Controlled Luminaire for use in emergency lighting systems when used with the ETC DMX Emergency Bypass Controller (DEBC).



Note: *Features described in this document require the latest version of software. For information on updating fixture software, see [Updating the fixture software](#) on page 12.*



Corporate Headquarters ■ Middleton, Wisconsin, USA ■ Tel +608 831 4116
Service (Americas) ■ service@etcconnect.com
London, UK ■ Tel +44 (0)20 8896 1000 ■ Service: (UK) service@etc europe.com
Rome, IT ■ Tel +39 (06) 32 111 683 ■ Service: (UK) service@etc europe.com
Holzkirchen, DE ■ Tel +49 (80 24) 47 00-0 ■ Service: (DE) techserv-hoki@etcconnect.com
Hong Kong ■ Tel +852 2799 1220 ■ Service: (Asia) service@etcasia.com
Web: etcconnect.com ■ © 2018 Electronic Theatre Controls, Inc. ■ Product information and specifications subject to change. ■ ETC intends this document to be provided in its entirety.
■ US Patents 8,384,294 . 8,403,523 . 8,593,074 . 8,633,649 . 8,723,450 . 8,878,455 . 9,041,308
■ EU Patents 2638781 . 6020110157302 ■ All other patents pending.
7412M2120-1.7 ■ Rev A ■ Released 2018-04

ETC Installation Guide

ColorSource PAR Pearl v1.7

Safety

Read the entire manual before using this equipment.



CAUTION: • *Risk of eye injury. Do not stare directly into the light.*
• *Do not operate in proximity to flammable materials.*



WARNING: **Disconnect the fixture from power and DMX and allow it to cool before performing any cleaning and maintenance.**



WARNING: **The ColorSource PAR Pearl is a Directly Controlled Luminaire suitable for use in emergency lighting applications in accordance with 2017 National Electrical Code section 700.24 when used with an ETC DMX Emergency Bypass Controller. Equipment intended for this purpose must be properly selected, installed, and maintained so that facility conformance can be obtained. Installation and servicing shall be performed by qualified service personnel.**

IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed including the following:

- READ AND FOLLOW ALL SAFETY INSTRUCTIONS.
- Do not use outdoors.
- Do not let power supply cords touch hot surfaces.
- Do not mount near gas or electric heaters.
- Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
- The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
- Do not use this equipment for other than intended use.
- SAVE THESE INSTRUCTIONS

ETC Installation Guide

ColorSource PAR Pearl v1.7

Environment

The ColorSource PAR Pearl operates in ambient temperatures of 0°C–40°C and comes with a variable-speed fan.



Note: *The ColorSource PAR Pearl is for indoor use only.*



- Note:**
- *Maximum recommended ambient operating temperature: $T_a = 40^{\circ}\text{C}$ (104°F)*
 - *Maximum anticipated external surface temperature at 40°C ambient: $T_{max} = 80^{\circ}\text{C}$ (176°F)*
 - *External temperatures after 5 minutes of full-brightness operation at 25°C (77°F) ambient: 33°C (91°F)*
 - *External Temperature (steady state achieved) at 25°C (77°F): 44°C (111°F)*
-

Electrical

- Operates between 100V and 240VAC at a frequency of 50/60Hz.
- Maximum power consumption is 135W.
- Up to 9 luminaires (15A max) may be linked via power thru connector (10 luminaires total per circuit) when used with an R20 Relay Module or Unison Echo® Relay Panel. Consult breaker trip curves when used with other equipment. Requires power from a non-dimmable source.
- Inrush:
 - 120V: 35A (first half-cycle)
 - 240V: 49A (first half-cycle)

Typical power consumption

	100V	120V	230V
Idle Power/Current	1.7W/0.03A	1.6W/0.03A	1.47W/0.03A
Direct at Full/Current	116.6W/1.17A	114.4W/0.96A	112.3W/0.50A

ETC Installation Guide

ColorSource PAR Pearl v1.7

Installation

Emergency lighting considerations

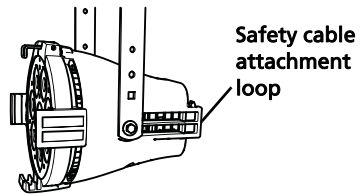
Luminaires that are used in emergency lighting applications must provide a minimum illumination level over the identified means of egress path in accordance with the Life Safety Code®, NFPA 101. A luminaire that is intended to serve this purpose must be mounted at a height where it will not readily be subjected to tampering by unauthorized personnel and where the minimum required illumination level over the egress path can be achieved. The ETC DMX Emergency Bypass Controller that is driving the luminaire upon loss of utility power must be programmed to drive the ColorSource PAR Pearl to full illumination.

Mounting

The ColorSource PAR Pearl ships with a standard yoke for mounting with a C-clamp. An expandable floor stand yoke is available as an optional accessory. Contact your local dealer for more information.

Safety cable

The safety cable (or other approved safety device) must be attached to the fixture. Attachment loops are provided on the rear of the fixture housing. Take care to leave as little slack as possible in the safety cable to avoid catching the yoke of the fixture.



Connectors

- **Power:** Two powerCON® connectors for power in and thru
- **Data (DMX512/RDM):** Two five-pin XLR connectors *OR* two RJ45 connectors for data in and thru

Conversion cables are available from ETC. Please contact your ETC customer service representative and request part number W6538 for RJ45 to female XLR or part number W6539 for RJ45 to male XLR.



Note: *This fixture is not Ethernet/data network compatible.*



Note: *The ColorSource PAR Pearl is not self terminating. You must terminate the last fixture in line with a 120 Ohm resistor. XLR terminators are not available from ETC. To purchase an RJ45 terminator, please contact ETC customer service and request part number N4086.*

ETC Installation Guide

ColorSource PAR Pearl v1.7

Setting up the fixture

- 1: Plug power cord into the powerCON In connector on the rear of the fixture.
- 2: Make any power-thru cable connections prior to applying a power source.
- 3: Make any DMX connections, and if the fixture is the last in a DMX line, terminate the fixture. See [Connectors](#) on [page 4](#).
- 4: Plug power cord into power source.

Powering up

- 1: Press any button to wake the display. The display shows the DMX address. See [Setting the DMX address](#) on [page 6](#).
- 2: Press the Mode button to access the Presets menu. See [Setting presets](#) on [page 10](#).

Adjusting the tilt

The fixture can be tilted up and down and rotated (panned) as needed.

- 1: Loosen, but **do not remove** the yoke locking knob.
- 2: Tilt the fixture to the desired angle.
- 3: Tighten the yoke locking knob.

User interface

The user interface allows you to set the start address of the fixture, access the stand-alone presets, and set the DMX control mode.

- After 5 seconds of inactivity when DMX is present, the display goes dark.
- The DMX address will blink when no DMX is present and a preset or sequence is not active. The inactivity time-out is disabled while in a data loss state.

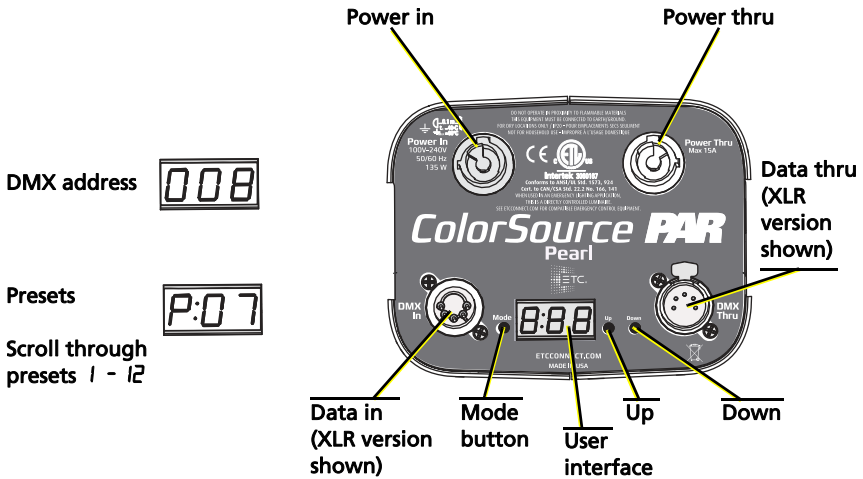
ETC Installation Guide

ColorSource PAR Pearl v1.7

Mode button

Pressing the Mode button activates the Presets menu; the last active preset plays automatically. Pressing the Mode button a second time deactivates the selected preset. The display will revert to show the DMX start address.

- If DMX data is present, the current preset plays in the background and DMX data continues to take priority.
- If DMX data is lost and a preset is active in the background, the last selected preset automatically plays.



Setting the DMX address

- 1: Press any button to wake the display. The display shows the DMX address.
- 2: Use the Up and Down buttons to select the DMX address for the fixture.

You can also use RDM for DMX addressing. See [RDM values](#) on [page 13](#).

ETC Installation Guide

ColorSource PAR Pearl v1.7

Changing the DMX control mode

You can set the DMX control mode for the fixture to one of three available mode options.

- 1: Press any button to wake the display. The display shows the DMX address.
- 2: Press and hold the Mode button for 3 seconds. The display shows the current DMX control mode.
- 3: Press the Up and Down buttons to change the DMX control mode.
 - **ct**: Variable color temperature (intensity or color temperature). This is the default mode.
 - **dir**: Direct emitter control (intensity, warm white, cool white, strobe).
 - **lch**: 1-channel mode controls the intensity of preset 1 (defaults to 3000K White).
- 4: Press the Mode button to confirm your selection.

The display will automatically return to the DMX address after 10 seconds of inactivity, and edits to the DMX control mode will not be saved. This cancels unsaved changes.

DMX control channels

DMX Channel	ct (Variable Color Temperature)	dir (Direct)	lch (1 Channel)
1	Intensity	Intensity	Intensity
2	Color temperature	Warm white	
3		Cool white	
4		Strobe*	

*Use DMX values of 0 or 255 for no strobe. Use values of 1–254 to increase the strobe rate from 1 per second up to 33 per second.

ETC Installation Guide

ColorSource PAR Pearl v1.7

Color temperature DMX values

The table below shows the color temperature value for each DMX value when using the **ct** DMX control mode. Note that although DMX address 0 = 3200 and DMX address 255 = 5600, the fixture supports a range of color temperatures from 2725 to 6450.

Color Temp	DMX Value
3200	0–1
2725	2–3
2750	4–5
2775	6
2800	7–8
2825	9–10
2850	11
2875	12–13
2900	14–15
2925	16
2950	17–18
2975	19–20
3000	21
3025	22–23
3050	24–25
3075	26
3100	27–28
3125	29–30
3150	31
3175	32–33
3200	34–35
3225	36–37
3250	38
3275	39–40
3300	41–42
3325	43
3350	44–45
3375	46–47
3400	48

Color Temp	DMX Value
3425	49–50
3450	51–52
3475	53
3500	54–55
3525	56–57
3550	58
3575	59–60
3600	61–62
3625	63
3650	64–65
3675	66–67
3700	68–69
3725	70
3750	71–72
3775	73–74
3800	75
3825	76–77
3850	78–79
3875	80
3900	81–82
3925	83–84
3950	85
3975	86–87
4000	88–89
4025	90
4050	91–92
4075	93–94
4100	95
4125	96–97

Color Temp	DMX Value
4150	98–99
4175	100–101
4200	102
4225	103–104
4250	105–106
4275	107
4300	108–109
4325	110–111
4350	112
4375	113–114
4400	115–116
4425	117
4450	118–119
4475	120–121
4500	122
4525	123–124
4550	125–126
4575	127
4600	128–129
4625	130–131
4650	132–133
4675	134
4700	135–136
4725	137–138
4750	139
4775	140–141
4800	142–143
4825	144
4850	145–146

ETC Installation Guide

ColorSource PAR Pearl v1.7

Color Temp	DMX Value
4875	147–148
4900	149
4925	150–151
4950	152–153
4975	154
5000	155–156
5025	157–158
5050	159
5075	160–161
5100	162–163
5125	164–165
5150	166
5175	167–168
5200	169–170
5225	171
5250	172–173
5275	174–175
5300	176
5325	177–178
5350	179–180
5375	181
5400	182–183

Color Temp	DMX Value
5425	184–185
5450	186
5475	187–188
5500	189–190
5525	191
5550	192–193
5575	194–195
5600	196–197
5625	198
5650	199–200
5675	201–202
5700	203
5725	204–205
5750	206–207
5775	208
5800	209–210
5825	211–212
5850	213
5875	214–215
5900	216–217
5925	218
5950	219–220

Color Temp	DMX Value
5975	221–222
6000	223
6025	224–225
6050	226–227
6075	228–229
6100	230
6125	231–232
6150	233–234
6175	235
6200	236–237
6225	238–239
6250	240
6275	241–242
6300	243–244
6325	245
6350	246–247
6375	248–249
6400	250
6425	251–252
6450	253
5600	254–255

ETC Installation Guide

ColorSource PAR Pearl v1.7

Setting presets

There are twelve factory-configured presets built into the fixture. From the Presets menu, press the Up and Down buttons to scroll through the list. The preset plays immediately upon selection. All presets can be re-recorded through an RDM device.

Re-recording a preset

- 1: Using DMX, set the desired levels.
- 2: Press the Mode button to access the Presets menu.
- 3: Using the Up and Down buttons, navigate to the preset number that you want to re-record.
- 4: Press and hold the Mode button for 3 seconds to confirm the preset selection. The user interface will show a 3-second countdown. The preset number blinks once to confirm that the preset has been recorded.



Note: *When the fixture is in Direct mode (DIR) or 1-channel mode (1ch), you cannot re-record presets.*

See [Changing the DMX control mode on page 7](#).

It is possible to activate a known preset from a connected fixture when DMX is not present. If a connected fixture activates a preset that is not recognized by the fixture, the fixture will hold its last look. When DMX is restored, the DMX takes priority.

Pre-configured presets

Preset	Name	Preset	Name
1	3000K White	7	4700K White
2	3200K White	8	5000K White
3	3500K White	9	5200K White
4	4000K White	10	5600K White
5	4200K White	11	6000K White
6	4500K White	12	6450K White

ETC Installation Guide

ColorSource PAR Pearl v1.7

Adjusting the intensity of presets

- 1: Ensure that DMX data is not present.
- 2: Press the Mode button to access the Presets menu, and then press the Up and Down buttons to select the preset that you want to edit.
- 3: Press and hold the Mode button for 3 seconds. The display shows **L : ##** where the number is an intensity level from **0-99**, or **FL**.
- 4: Press the Up and Down buttons to change the intensity level of the preset in real time.
- 5: Press the Mode button to confirm your selection and return to the Presets menu.

The display will automatically return to the Presets menu after 10 seconds of inactivity, and edits to the preset intensity will not be saved.

Locking the user interface

After you have set up the fixture, you can lock the user interface to prevent additional changes.

- 1: Press and hold the Up and Down buttons simultaneously for 3 seconds. The display will show **Loc** to indicate that the user interface is locked.
- 2: To unlock the user interface, press and hold the Up and Down buttons simultaneously for 3 seconds.

ETC Installation Guide

ColorSource PAR Pearl v1.7

Updating the fixture software

ETC recommends using UpdaterAtor software to manage software updates. For more information on UpdaterAtor, see the *UpdaterAtor Software Quick Guide*, which you can download for free from etcconnect.com.

When you add a ColorSource fixture running a newer software version or update a ColorSource fixture to a newer software version using UpdaterAtor, you can use that fixture to push the newer software version to all connected ColorSource fixtures.

You can push newer software versions from a connected fixture only on ColorSource fixtures running software v1.3.0 or newer. Use UpdaterAtor to update individual fixtures running versions older than v1.3.0.

- 1: Remove power and DMX from the master fixture that is running the software version that you want to push to other fixtures.
- 2: Press and hold the Up and Down buttons simultaneously while restoring power.
- 3: The display will show **Udt rdy** to indicate the update mode is selected.
- 4: Press the Mode button to start the update process.
 - The display will alternate between **Udt** and the percentage complete while updating.
 - The master fixture will reboot once the update is complete.

Restoring factory defaults

Press and hold the Mode, Up, and Down buttons simultaneously for 5 seconds. The DMX start address will blink once to confirm that defaults have been restored.

Error codes

There are three error codes that may be shown on the user interface.

- **CAL**: Screen toggles between **CAL** and **Err** to indicate a problem with the color calibration. The fixture will need to be returned to the ETC factory; contact your local dealer to set up a repair.
- **OtP**: Screen toggles between **OtP** and **Err** to indicate that the fixture has gone into over-temperature protection mode to avoid damaging the fixture. Once the fixture has self-cooled, the error will automatically clear.
- **no APP**: Screen toggles between **no** and **APP** to indicate that the upgraded fixtures have a software issue. Reload software to clear the error. If the error persists, contact ETC.

ETC Installation Guide

ColorSource PAR Pearl v1.7

RDM values

Manufacturer ID: 0x6574 (Electronic Theatre Controls)

Model ID: 0x0203 (ETC ColorSource PAR Pearl)

Parameter	RDM PID	Value
DMX Start Address	0x00F0	Range = 1–512
Personality ID	0x00E0	1 = Variable Color Temp 2 = Direct 3 = 1 Channel
Output Frequency	0x8123	0 = Standard (1.2 kHz) 1 = High (25 kHz)

ETC Installation Guide

ColorSource PAR Pearl v1.7

ETC Installation Guide

ColorSource PAR Pearl v1.7

ETC Installation Guide

ColorSource PAR Pearl v1.7

Quick reference

DMX control channels

DMX Channel	<i>ct</i> (Variable Color Temperature)	<i>dir</i> (Direct)	<i>lch</i> (1 Channel)
1	Intensity	Intensity	Intensity
2	Color temperature	Warm white	
3		Cool white	
4		Strobe*	

*Use DMX values of 0 or 255 for no strobe. Use values of 1–254 to increase the strobe rate from 1 per second up to 33 per second.

Error codes

There are three error codes that may be shown on the user interface.

- **CAL**: Screen toggles between **CAL** and **Err** to indicate a problem with the color calibration. The fixture will need to be returned to the ETC factory; contact your local dealer to set up a repair.
- **OTP**: Screen toggles between **OTP** and **Err** to indicate that the fixture has gone into over-temperature protection mode to avoid damaging the fixture. Once the fixture has self-cooled, the error will automatically clear.
- **no APP**: Screen toggles between **no** and **APP** to indicate that the upgraded fixtures have a software issue. Reload software to clear the error. If the error persists, contact ETC.