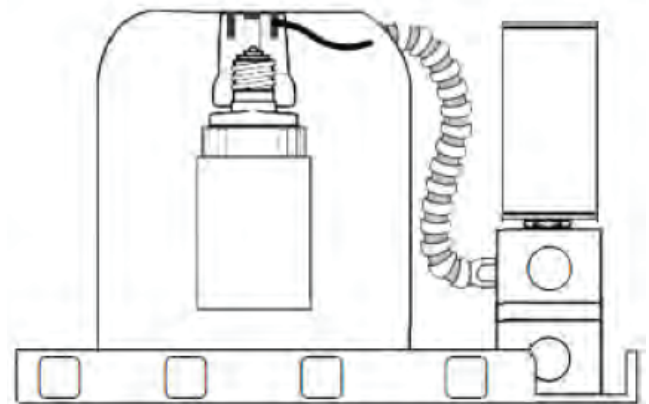
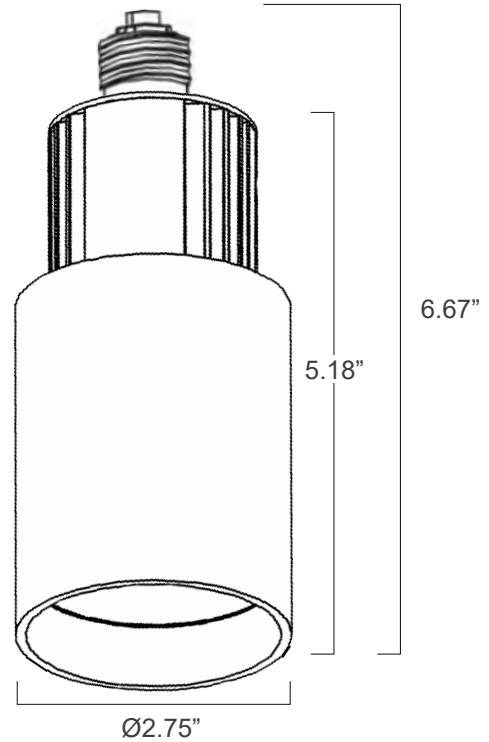


RET-413-PAR20-FIX

Fixed Recessed Hardwire Remote Transformer

Project Name:		Type:	
Catalog Number:		Date:	

**Key Features**

- Easily upgrade existing fixtures
- No disruption to ceiling
- Replace existing CMH or Halogen optics
- Replace 1, 2, 3, or 4 lamp multiple optics
- Replace continuous slot optics
- Universal 5/8" threaded nipple mount
- New optic mounts into same mounting hole
- Remote LED Driver
- Double jointed adjustable bracket
- 2"+ vertical optical adjustment
- **See Page 3 for additional mounting options**

LED Source Details

CREE XPL LED maximum rating = 3,000mA

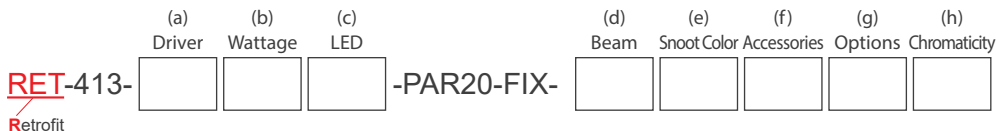
- Fixture operating milliamp range = 450mA to 1150mA.
- Operating 15% to 38% of rated value
- Fixture wattage range = 8W to 20W
- Fixture delivered lumens = 700 to 1,300 lumens

Last revised: 04/04/2023

RET-413-PAR20-FIX

Fixed Recessed Hardwire Remote Transformer

Project Name:		Type:	
Catalog Number:		Date:	



(a) Driver Options

E	= ON/OFF (Electronic)
D*	= MLV 1% Dimming (2 wire)
ED	= Electronic Reverse Phase Dimming 1% (2 wire)
0-10V1	= 0-10V 1% Dimming (3 wire)
DALI2	= .01% Digital Addressable Lighting Interface V2
DALI2-4	= .01% Digital Addressable Lighting Interface V2 (4 fixtures)
RDM DMX	= .001% 16 Bit, 4-Channel Dimming (2 wire with CAT5)
ABS	= .001% Absolute Light Dimming (use with RGBW)
ABSX	= DMX Absolute Light .001% RGBW dimming

*MLV power supply is intended for use with forward phase SCR or Triac dimmers. Do not use with relays or toggle switches, do not use with reverse phase dimmers.

(b) Wattage Options

9W (520 Lumens)	= MLV <1% Dimming	Can be used with Remote or In-Line 12V Transformer
14W (800 Lumens)	= MLV <1% Dimming	
17W (1100 Lumens)	= MLV <1% Dimming	
12W (800 Lumens)	= ON/OFF, 0-10V 1%, ED	To be used ONLY with Remote Transformer
16W (1100 Lumens)	= ON/OFF, 0-10V 1%, ED	
18W (900 Lumens)	= Absolute Light RGBW	
19W (1300 Lumens)	= DMX Dimming	
20W (1300 Lumens)	= ON/OFF, 0-10V 1%, ED	

(c) LED Type Options

XLED = Cree XPL2 LED @ All Wattages

(d) Beam Options

NSP = Narrow Spot	NFL = Narrow Flood
SP = Spot	FL = Flood

(e) Snoot Color Options

BLKS = Black Snoot
WHTS = White Snoot
PWTS = Pewter Snoot

(f) Optical and Accessory Options

LS	= Lens Softener - +20% increase in beam width. Shields optical face visually. Softens edges of beam.	
LSL	= Linear Spread Lens - Horizontal or vertical beam elongation.	
WFL	= Wide Flood Lens - Wall washing increases the beam by 50% width with elimination of center beam.	
LV	= Louver - Small black hexcel louver eliminates all surface brightness. Creates stronger vertical cut off with -20% beam width.	
CHL	= Cross Hair Louver	
H	= Halogen - 100K warmer. 2700k to 2500K	
DH	= Dimmed Halogen - 400K warmer. 2700k to 2300K	

(g) Options

120V	= 120VAC 60Hz (Standard)
230V	= 230VAC 50Hz (Used in conjunction with 230V track)
277V	= 277VAC 60Hz (Used in conjunction with 277V track)
347V	= 347VAC 60Hz
RM2	= Operate 2 Optics with Single 0-10V, ON/OFF LED Driver
RM3	= Operate 3 Optics with Single 0-10V, ON/OFF LED Driver
SCR	= Screw-in Driver and Transformer
IPS	= 1" IPS Nipple
IPC	= 1" IPS Nipple + Canopy Plate
EMG	= 90 minute emergency battery backup
80+	= CRI over 80
90+	= CRI over 90

(h) Color Temperature Options

White LED	Colored/Themed LED
22K* = 2200 Kelvin (candlelight color)	UV275** = 275 NM UV virus sterilizer
27K = 2700 Kelvin (incandescent color)	UV365*** = 365 NM UV black light
30K = 3000 Kelvin (halogen color)	UV390*** = 390 NM UV black light
35K = 3500 Kelvin (warm incandescent)	Blue*** = 465 - 485 NM wavelength
40K = 4000 Kelvin (cool incandescent)	Green*** = 520 - 535 NM wavelength
50K = 5000 Kelvin (day white)	Amber*** = 585 - 595NM wavelength
65K = 6500 Kelvin (12 noon sunlight)	Red*** = 620 - 630 NM wavelength
	RGBW3K**** = Red, Green, Blue, White
	RGBW4K**** = Red, Green, Blue, White

*1050 mA or less

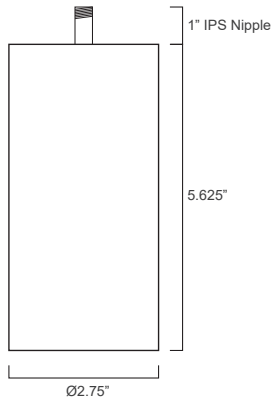
**500 mA
***700 mA
****Must utilize DMX @ 700 mA

RET-413-PAR20-FIX

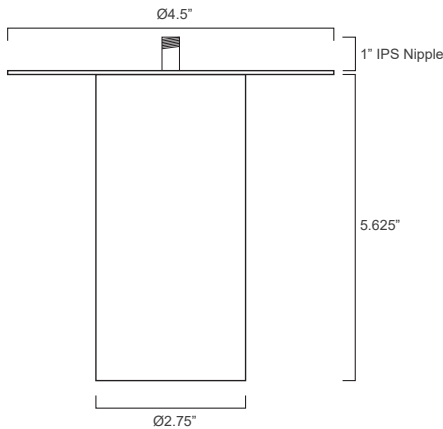
Fixed Recessed Hardwire Remote Transformer

Project Name:		Type:	
Catalog Number:		Date:	

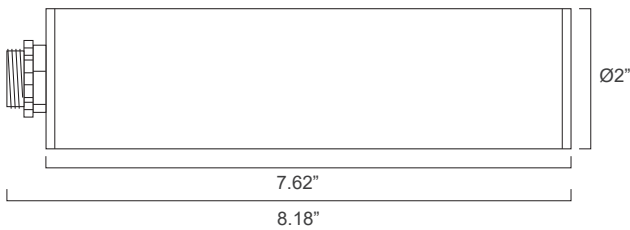
1.00" IPS Nipple



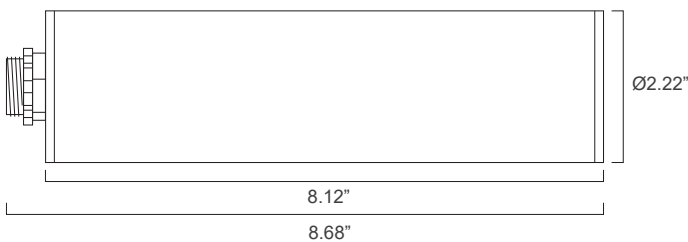
1.00" IPS Nipple with 4.5" Canopy Plate



On/Off Driver Used for: 8.4W, 12W, 16W



On/Off Driver Used for: 9.4W, 14W, 19W



Electrical

- Optional - 12V AC remote class 2
- 100V, 120V, 230V, 277V or 347V

LED

- 3,000mA maximum rated CREE XPL2 LED
- Operates between 450 to 1200mA
- 15% to 40% of rated mA

LED Driver

- D – 2 wire forward phase .01% LED driver fade to off glow to on
- ED – 2 wire reverse phase 1% LED driver
- DC – 12V or 24V

Optics

- TIR discrete injection molded polycarbonate precision LED optic
- 45-degree vertical cut off

Installation

- IPS Nipple - Unistrut (Not provided)

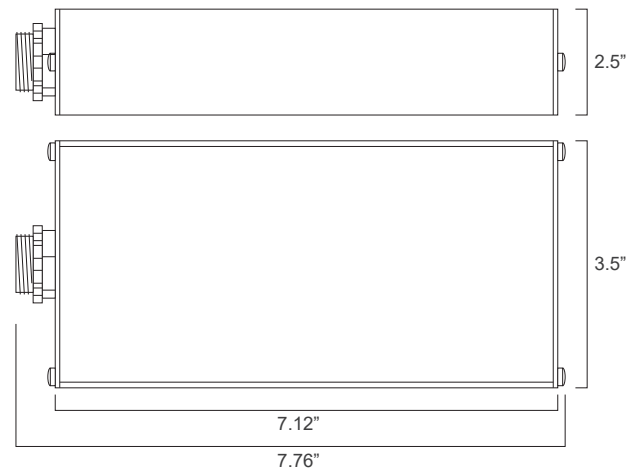
Certification

- UL Damp Listed – IP 52

Warranty

- 5 Year – ED, 0-10V, DMX and colored LED fixtures
- 7 Year – D and White LED fixtures

RMT2 and RMT3 LED Remote Driver



RET-413-PAR20-FIX

Fixed Recessed Hardwire Remote Transformer

Project Name:		Type:	
Catalog Number:		Date:	

Wattage & Lumen Output

700/750 Milliamps - 1200 Lumens
 16W ON/OFF
 18W MLV <1% Dimming

1000/1050 Milliamps - 1800 Lumens
 24W ON/OFF
 28W MLV <1% Dimming

1200 Milliamps - 2000 Lumens
 28W MLV <1% Dimming
 ON/OFF
 0-10V 1%
 Lutron
 DMX

3 Step CREE XPL2 LED

Kelvin-CRI	Multiplier
27K-80+ CRI	1
27K-90+ CRI	0.80
30K-80+ CRI	1
30K-90+ CRI	0.85
35K-80+ CRI	105
35K-90+ CRI	0.9
40K-80+ CRI	109
50K-80+ CRI	109
65K-80+ CRI	105

80+ = 84 CRI
 90+ = 94 CRI

Narrow Spot 14°

2'	5,051 fc	0.5'
4'	1,263 fc	1.0'
6'	561 fc	1.4'
8'	316 fc	1.9'
10'	202 fc	2.4'
12'	140 fc	2.9'

28W PAR20 - 1,638 lm

Spot 19°

2'	2,793 fc	0.7'
4'	698 fc	1.4'
6'	310 fc	2.0'
8'	175 fc	2.7'
10'	112 fc	3.4'
12'	78 fc	4.1'

28W PAR20 - 1,865 lm

Narrow Flood 22°

2'	2,014 fc	0.8'
4'	504 fc	1.5'
6'	224 fc	2.3'
8'	126 fc	3.1'
10'	81 fc	3.9'
12'	56 fc	4.6'

28W PAR20 - 1,785 lm

Flood

2'	fc	'
4'	fc	'
6'	fc	'
8'	fc	'
10'	fc	'
12'	fc	'

28W PAR20 - 1,721 lm

Intensity Summary (cd)

Gamma	All Planes	Flux (lm)
0	20206	
5	13883	1000
10	4389	
15	921	334
20	336	
25	210	99
30	149	
35	117	75
40	102	
45	81	65
50	73	
55	49	47
60	41	
65	15	17
70	1	
75	0	0
80	0	
85	0	
90	0	

Intensity Summary (cd)

Gamma	All Planes	Flux (lm)
0	11174	
5	9332	519
10	5281	
15	2307	475
20	977	
25	422	166
30	220	
35	144	71
40	112	
45	92	50
50	72	
55	48	26
60	41	
65	14	5
70	2	
75	1	1
80	0	
85	0	0
90	0	

Intensity Summary (cd)

Gamma	All Planes	Flux (lm)
0	8057	
5	6932	579
10	4463	
15	2316	650
20	1093	
25	535	261
30	300	
35	194	126
40	146	
45	118	91
50	88	
55	58	56
60	50	
65	14	20
70	3	
75	1	1
80	1	
85	0	0
90	0	

Intensity Summary (cd)

Gamma	All Planes	Flux (lm)
0	3157	
5	3048	281
10	2720	
15	2189	597
20	1558	
25	989	454
30	564	
35	320	207
40	181	
45	105	85
50	67	
55	49	45
60	39	
65	28	28
70	20	
75	17	18
80	13	
85	6	7
90	0	

Zonal Flux and Percentages

Zone	Flux (lm)	%Luminaire
0-30	1433	87.5
0-40	1508	92.1
0-60	1620	98.9
0-90	1638	100.0
40-90	130	7.9
60-90	18	1.1
90-180	0	0.0
0-180	1638	100.0

Zonal Flux and Percentages

Zone	Flux (lm)	%Luminaire
0-30	1635	90.6
0-40	1729	94.6
0-60	1846	99.6
0-90	1865	100.0
40-90	136	5.4
60-90	19	0.4
90-180	0	0.0
0-180	1865	100.0

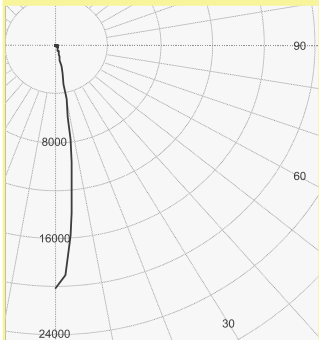
Zonal Flux and Percentages

Zone	Flux (lm)	%Luminaire
0-30	1490	83.5
0-40	1616	90.5
0-60	1763	98.8
0-90	1785	100.0
40-90	169	9.5
60-90	22	1.2
90-180	0	0.0
0-180	1785	100.0

Zonal Flux and Percentages

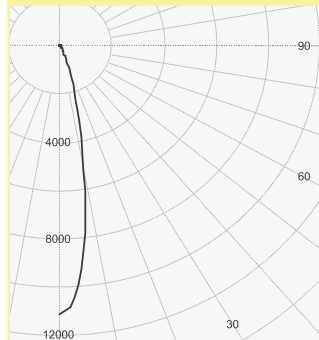
Zone	Flux (lm)	%Luminaire
0-30	1332	77.4
0-40	1539	89.4
0-60	1668	96.9
0-90	1721	100.0
40-90	182	10.6
60-90	53	3.1
90-180	0	0.0
0-180	1721	100.0

All planes - Solid (cd)



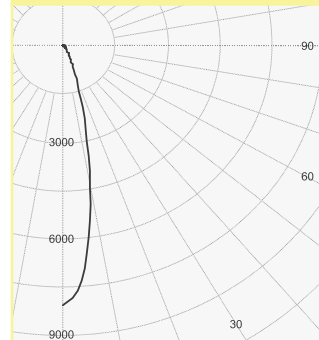
(Rotational Symmetry)

All planes - Solid (cd)



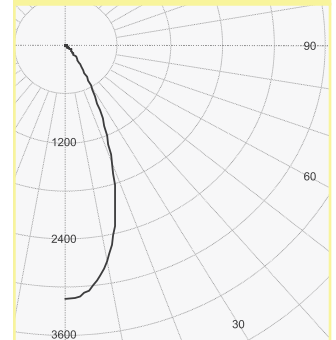
(Rotational Symmetry)

All planes - Solid (cd)



(Rotational Symmetry)

All planes - Solid (cd)



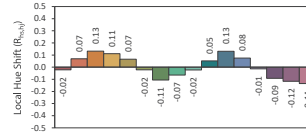
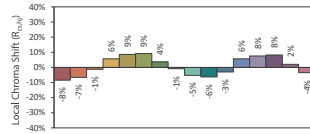
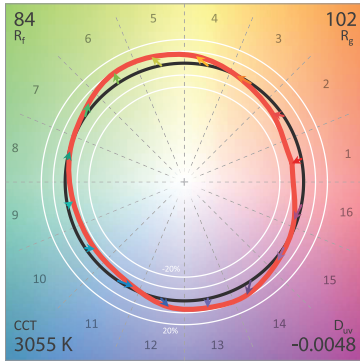
(Rotational Symmetry)

RET-413-PAR20-FIX

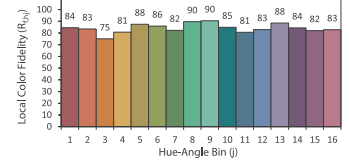
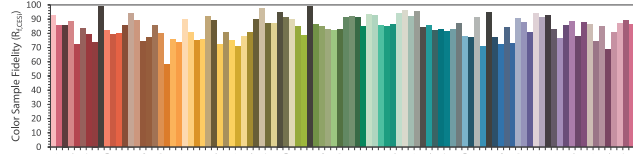
Fixed Recessed Hardwire Remote Transformer

Project Name:		Type:	
Catalog Number:		Date:	

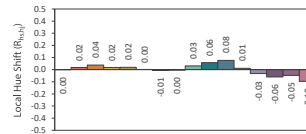
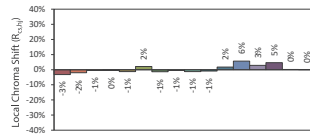
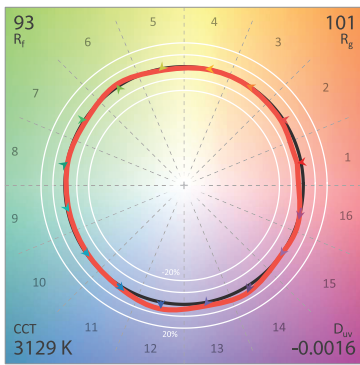
Clarté Lighting 3000K 80+ CRI Color Metrics



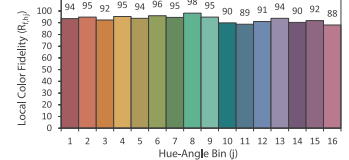
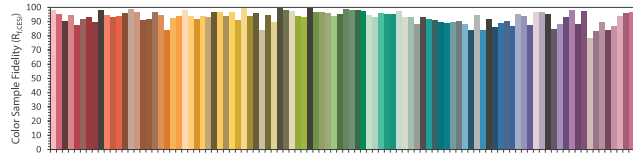
CIE 13.3-1995 (CRI)
 R_a 86
 R_9 29



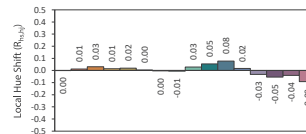
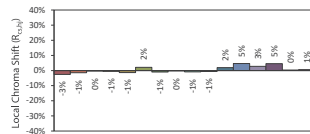
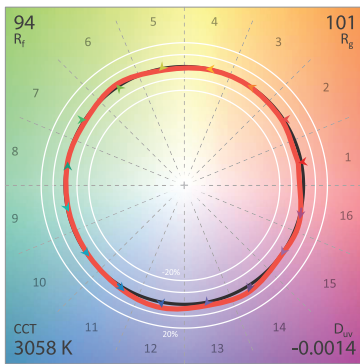
Clarté Lighting 3000K 90+ CRI Color Metrics



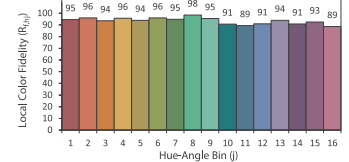
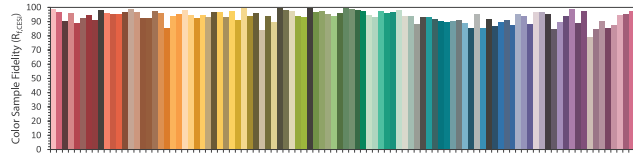
CIE 13.3-1995 (CRI)
 R_a 95
 R_9 74



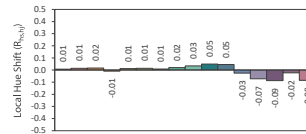
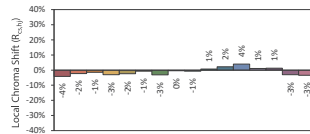
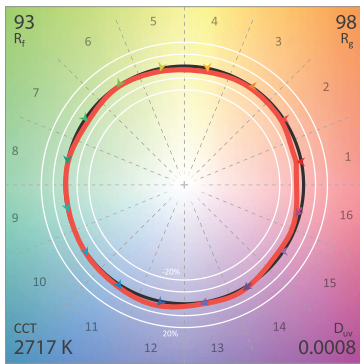
Clarté Lighting 3000K 90+ CRI Halogen Lens (H) Color Metrics



CIE 13.3-1995 (CRI)
 R_a 96
 R_9 79



Clarté Lighting 3000K 90+ CRI Dimmed Halogen Lens (DH) Color Metrics



CIE 13.3-1995 (CRI)
 R_a 95
 R_9 64

