

MS2-624-PAR16

Multiple Square 2-Light Slot

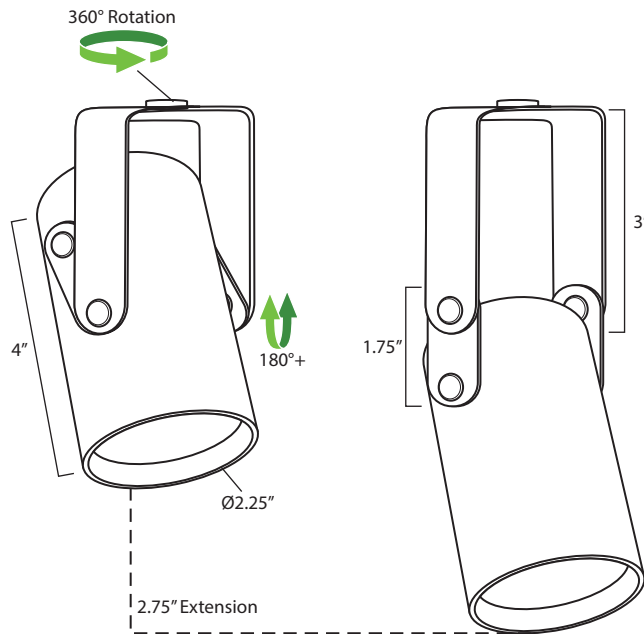
Project Name:		Type:	
Catalog Number:		Date:	

Trim



16.75" x 7.5" Trim with 14.25" x 4" Inner Opening

Trimless



55° Fully recessed or semi-recessed, 30° on-axis or straight

Key Features

- Fully recessed or semi recessed PAR16 optic orientation
- 2 circuits - circuit for each optical array
- Up to 4 architectural accessories per optic
- Over 3300+ Custom color finish options
- 100,000+ L70 life
- 7 Year Warranty – White LED

LED Source Details

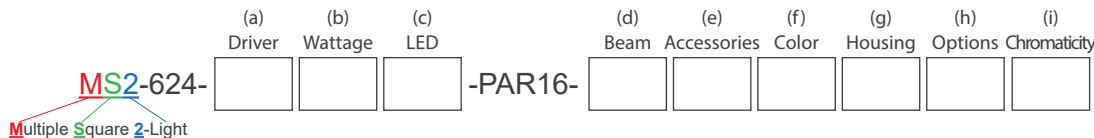
- CREE XPL LED maximum rating = 3,000mA
- Fixture operating milliamp range = 450mA to 1150mA.
 - Operating 15% to 38% of rated value
 - Fixture wattage range = 8W to 20W
 - Fixture delivered lumens = 700 to 1,300 lumens

Last revised: 02/07/2024

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(a) Driver Options

- E = ON/OFF (Electronic)
- D = MLV 1% Dimming (2 wire)
- DC12V = .01% PWM DC dimming (2 wire)
- DC24V = .01% PWM DC dimming (2 wire)
- ED = Electronic Reverse Phase Dimming 1% (2 wire)
- 0-10V1 = 0-10V 1% Dimming (4 wire)
- DALI2 = .01% Digital Addressable Lighting Interface V2
- DALI2-4 = .01% Digital Addressable Lighting Interface V2 (4 fixtures)
- RDM DMX = 16 Bit, 4 Channel (2 wire with CAT5)
- ABS = Absolute Light .001% Dimming (use with RGBW)
- ABSX = DMX Absolute Light .001% RGBW dimming

(b) Wattage Options

Adjustable Optic

- 8W (520 Lumens) = ON/OFF, 0-10V 1%
- 9W (520 Lumens) = MLV <1% Dimming
- 12W (800 Lumens) = ON/OFF, 0-10V 1%, ED
- 14W (800 Lumens) = MLV <1% Dimming
- 16W (1100 Lumens) = ON/OFF, 0-10V 1%, ED
- 17W (1100 Lumens) = MLV <1% Dimming
- 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) 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 - Hexcel louver eliminates all surface brightness. Creates stronger vertical cut off with -20% beam width. 
- CHL = Cross Hiar Louver 
- H = Halogen - 150K warmer. 2700k to 2550K 
- DH = Dimmed Halogen - 300K warmer. 2700k to 2400K 

(f) Trim Type

- T = Trimmed (for suspended ceiling, T-bar, or plaster ceiling installation)
- TL = Trimless (for wood frame plaster ceiling installation)

(g) Fixture Color Options

- BLK = Black
- WHT = White
- PWT = Pewter
- Select Custom Color (Review Website for Over 3,300 Color Options)

(h) Options

- BTS = Black Tapered Snoot
- WTS = White Tapered Snoot
- WBTS = White Exterior / Black Interior
- WWSN = Wall Wash Snoot
- 80+ = CRI over 80
- 90+ = CRI over 90
- RMT60 = 60 watt 12V AC MLV Step Down Transformer
- RMT150 = 150 watt 12V AC MLV Step Down Transformer
- RMT300 = 300 watt 12V AC MLV Step Down Transformer
- 12V = Up to 6 Fixtures - Add 12V AC Magnetic Step Down Transformer to Operate Track
- 24V = Up to 10 Fixtures - Add 24V AC Magnetic Step Down Transformer to Operate Track
- 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
- PM = Praying Mantis)
- DMX* = .39% to 100% milliamp constant voltage LED driver, dip switch addressable, 3 channel for 27K & 30K, 4 channel for RGBW, CAT5 in & out*

*DMX is required in RGBW or in any 2 circuits or more.
Custom colors available - Consult factory for more details

(i) Color Temperature Options

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

*1050 mA or less

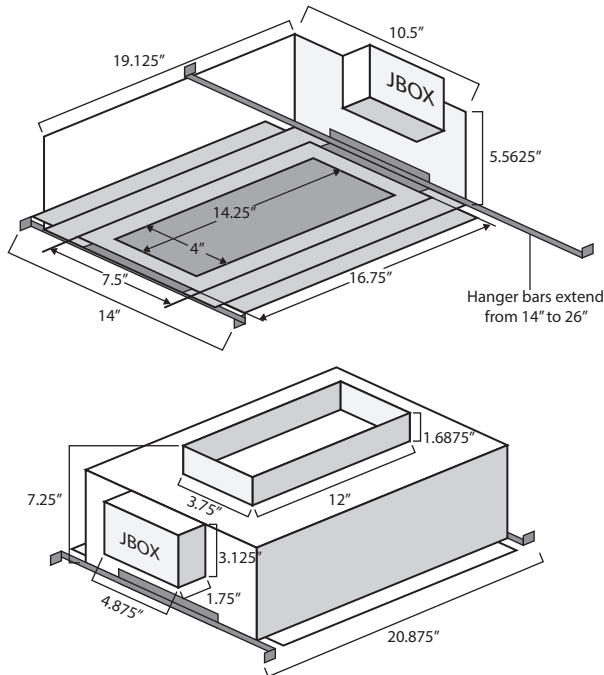
**500 mA
***700 mA
****Must utilize DMX @ 700 mA

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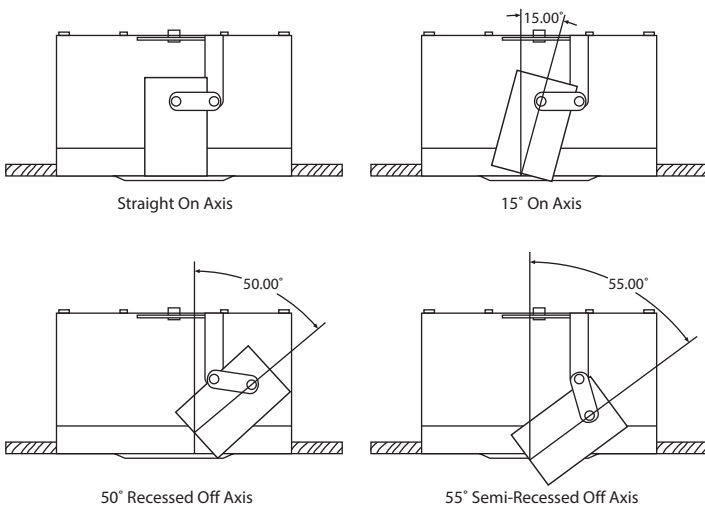
Multiple Square 2-Light Slot

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Housing Dimensions:



Adjustability: Single bracket praying mantis shown below. Double bracket praying mantis increases adjustability by ~ 20%.



Housing

- 100% aluminum construction
- Single screw removal of 3.375" x 17" top LED driver compartment
- Tool less driver compartment cover for easy access

Electrical

- NON-IC fixture housing
- Optional - 12V AC remote class 2
- Optional - 12V or 24 DC remote class 2
- 100V, 120V, 230V, 277V or 347V

Emergency Battery Back Up

- 190mA of light output per 2 optics = 2 x 3 watts (3 x 3 watts for 3 lamp multiple)
- LifePO4 battery = up to 10 times life of lead acid batteries
- 90 minute battery back up

LED

- CREE XPL2 LED
- Operates at 1150
- L70 life = 100,000 hr.+

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
- 0-10V – 4 wire 1% LED driver
- Absolute Light – Remote mount class 2 48V din rail .001% LED system
- 16-bit RMD DMX – 65,536 dimming steps fade to off glow to on

Optics

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

Trim

- Spring loaded compression installation
- Steal .02" thin trim

Trim Finish

- Textured white, textured black or standard pewter
- 3300+ Custom powder coat finishes optional

Trimless Installation

- Available in trimless

Installation

- Accommodates ceiling thickness up to 2.5"
- Universal adjustable 24" adjustable hangar bars

Certification

- UL Damp Listed – IP 52

Warranty

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

2 Trim Installation Options



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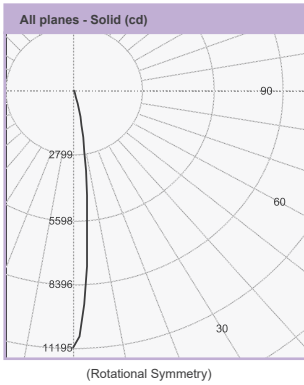
Narrow Narrow Spot 8.5°

3.3'	1,028 fc	0.5'
6.7'	249 fc	1.0'
10'	112 fc	1.5'
13.3'	63.3 fc	2.0'
16.7'	40.1 fc	2.5'
20'	28 fc	3.0'
26.7'	15.7 fc	4.0'
33.3'	10.1 fc	5.0'
40'	7 fc	6.0'

20W PAR16 - 472 lm
11,195 CBCP

Zonal Flux and Percentages

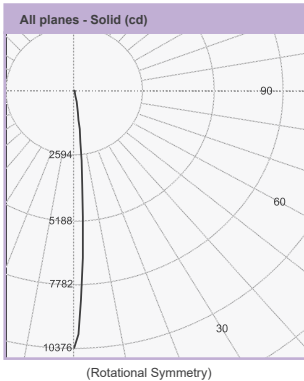
Zone	Flux (lm)	%Luminaire
0-30	460	97.5
0-40	467	99.0
0-60	472	100.0
0-90	472	100.0
40-70	5	1.0
60-80	0	0.0
90-180	0	0.0
0-180	472	100.0



Narrow Narrow Spot 7.9° (with Louver)

3.3'	953 fc	0.5'
6.7'	231 fc	0.9'
10'	104 fc	1.4'
13.3'	58.7 fc	1.8'
16.7'	37.2 fc	2.3'
20'	25.9 fc	2.8'
26.7'	14.6 fc	3.7'
33.3'	9.36 fc	4.6'
40'	6.48 fc	5.5'

20W PAR16 - 382 lm
10,376 CBCP



Wattage & Lumen Output

450 Milliamps - 520 Lumens	700 Milliamps - 800 Lumens
8W ON/OFF	12W ON/OFF
0-10V 1% Dimming	0-10V 1% Dimming
MLV <1% Dimming	ELV 10% Dimming
9W	14W MLV <1% Dimming
1000 Milliamps - 1100 Lumens	1150 Milliamps - 1300 Lumens
16W ON/OFF	20W ON/OFF
0-10V 1% Dimming	0-10V 1% Dimming
ELV 10% Dimming	ELV 10% Dimming
MLV <1% Dimming	
17W Lutron 1% Dimming	
19W DMX .33% Dimming	

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	

RGBW V2 Light Output Luminous Flux

Clarté Lighting offers 100% of fixtures in optional RGBW3K or RGBW4K

	700 mA RGBW3K	700 mA White 3K
Red	480	
Green	930	
Blue	138	
White	780	
Total	2328	844

*RGBW Fixtures are designed to not operate with all 4 colors at 100% of light for more than 24hrs continuously and suggest operating 55% or less of all 4 colors ON to ensure optimum thermal life of the RGBW LED.

Narrow Spot 12°

2'	3,824 fc	0.4'
4'	956 fc	0.9'
6'	425 fc	1.3'
8'	239 fc	1.8'
10'	153 fc	2.2'
12'	106 fc	2.7'
20'	28 fc	5.2'
26'	16 fc	7.0'
33'	10 fc	8.7'
40'	7 fc	10.5'

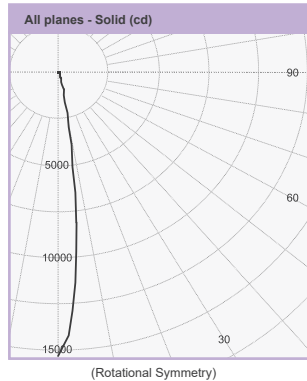
20W PAR16 - 1,100 lm
15,296 CBCP

Intensity Summary (cd)

Gamma	All Planes	Flux (lm)
0	15296	
5	9739	696
10	2978	
15	676	236
20	229	
25	135	64
30	90	
35	67	43
40	53	
45	46	35
50	34	
55	23	21
60	15	
65	2	4
70	1	
75	0	0
80	0	
85	0	0
90	0	

Zonal Flux and Percentages

Zone	Flux (lm)	%Luminaire
0-30	997	90.6
0-40	1040	94.6
0-60	1096	99.6
0-90	1100	100.0
40-90	60	5.4
60-90	4	0.4
90-180	0	0.0
0-180	1100	100.0



Spot 19°

2'	1,939 fc	0.7'
4'	485 fc	1.4'
6'	215 fc	2.0'
8'	121 fc	2.7'
10'	78 fc	3.4'
12'	54 fc	4.1'
20'	28 fc	6.1'
26'	16 fc	8.1'
33'	10 fc	10.1'
40'	7 fc	12.1'

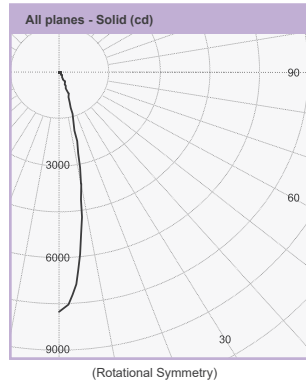
20W PAR16 - 1,313 lm
7,757 CBCP

Intensity Summary (cd)

Gamma	All Planes	Flux (lm)
0	7757	
5	6432	519
10	3640	
15	1648	475
20	731	
25	336	166
30	176	
35	110	71
40	77	
45	67	50
50	47	
55	29	26
60	15	
65	3	5
70	1	
75	0	1
80	0	
85	0	0
90	0	

Zonal Flux and Percentages

Zone	Flux (lm)	%Luminaire
0-30	1160	88.3
0-40	1231	93.8
0-60	1308	99.6
0-90	1313	100.0
40-90	82	6.2
60-90	5	0.4
90-180	0	0.0
0-180	1313	100.0



Narrow Flood 24°

2'	1,705 fc	0.7'
4'	426 fc	1.4'
6'	189 fc	2.1'
8'	107 fc	2.8'
10'	68 fc	3.5'
12'	47 fc	4.3'
20'	17 fc	7.5'
26'	10 fc	10.0'
33'	6 fc	12.4'
40'	5 fc	14.9'

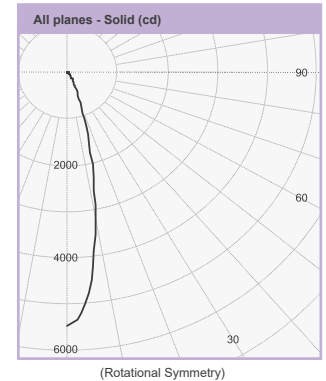
20W PAR16 - 1,306 lm
5,478 CBCP

Intensity Summary (cd)

Gamma	All Planes	Flux (lm)
0	5478	
5	4774	404
10	3229	
15	1800	500
20	905	
25	452	219
30	244	
35	146	95
40	98	
45	75	57
50	47	
55	25	25
60	15	
65	3	5
70	1	
75	1	1
80	0	
85	0	0
90	0	

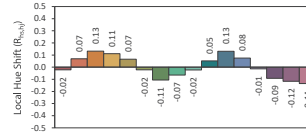
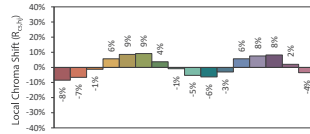
Zonal Flux and Percentages

Zone	Flux (lm)	%Luminaire
0-30	1123	86.0
0-40	1219	93.3
0-60	1301	99.6
0-90	1306	100.0
40-90	88	6.7
60-90	6	0.4
90-180	0	0.0
0-180	1306	100.0

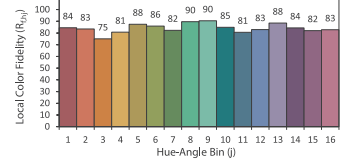


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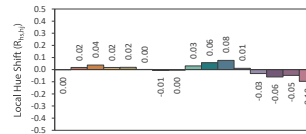
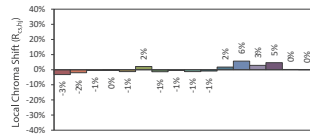
Clarté Lighting 3000K 80+ CRI Color Metrics



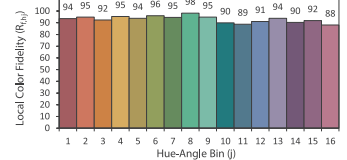
CIE 13.3-1995
 (CRI)
 R_a 86
 R_g 29



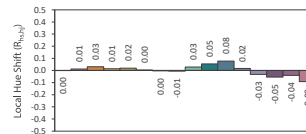
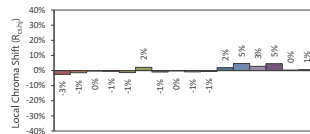
Clarté Lighting 3000K 90+ CRI Color Metrics



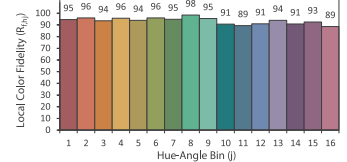
CIE 13.3-1995
 (CRI)
 R_a 95
 R_g 74



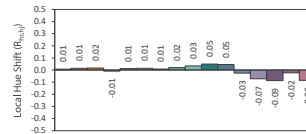
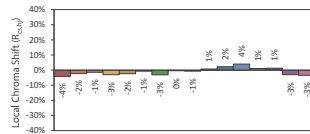
Clarté Lighting 3000K 90+ CRI Halogen Lens (H) Color Metrics



CIE 13.3-1995
 (CRI)
 R_a 96
 R_g 79



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



CIE 13.3-1995
 (CRI)
 R_a 95
 R_g 64

