

## Rania D2 Fixture

### PRODUCT DESCRIPTION

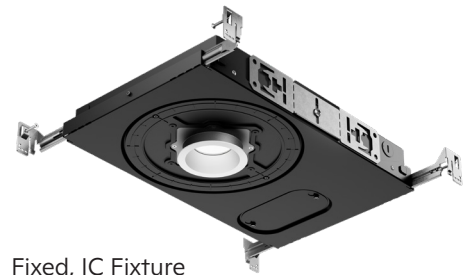
Rania D2 recessed LED downlights are available in fixed, adjustable, and wall-wash options to complete any lighting design project.

### FEATURES

**Exceptional White Light**—Rania leverages a breakthrough three-channel solution, paired with proprietary optics and state of the art color mixing technology to deliver a wide CCT range and replicates natural white light more faithfully than any light source other than Ketra.

**Natural Show**—The Rania fixtures' wide color temperature range and native control enables it to participate in Lutron's Natural Show. Natural show automatically adjusts the intensity and color temperature of the light over the course of the day. It can be used to bring the outside in by matching outdoor light - from the cool bright light at noon to the warm lower light in the evening.

### OPTIONS



Fixed, IC Fixture



Adjustable, IC Fixture

	Round Bevel	Square Bevel	Round Pinhole	Square Pinhole	Round Wall Wash	Square Wall Wash
Flanged						
Flangeless Mud-In						
Flangeless Millwork						

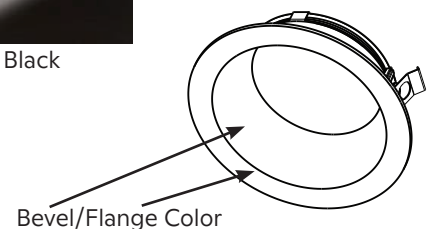
### Flanged Trim Finish Options

White	Black	Silver	Bronze	Silver / White	Black / White	Gloss Black / White

### Flangeless Trim Finish Options

White	Black	Silver	Bronze	Gloss Black

Two-Tone Paint



Bevel/Flange Color

## SPECIFICATIONS<sup>1</sup>

### Optical Performance

Delivered Lumens <sup>2</sup>	
Beam Angle	18 W
15° beam, high output	1161 lm
25° beam, high output	1151 lm
40° beam, high output	1078 lm
60° beam, high output	1018 lm
15° beam, low glare	1018 lm
25° beam, low glare	1040 lm
40° beam, low glare	884 lm
60° beam, low glare	856 lm
CRI (Ra)	>90 from 2,700K to 5,000K
R9	>80
Lumen Maintenance <sup>3</sup>	50,000 hours to L70 @ 25 °C T <sub>A</sub>
CCT Range	1800K - 5500K,
Dimming Protocol	Wireless RF/CCX (Lutron Clear Connect-Type X)
Dimming Range	0.1-100%
Delivered Efficacy	
Beam Angle	18 W
15° beam, high output	65 lm/W
25° beam, high output	64 lm/W
40° beam, high output	60 lm/W
60° beam, high output	57 lm/W
15° beam, low glare	57 lm/W
25° beam, low glare	58 lm/W
40° beam, low glare	49 lm/W
60° beam, low glare	48 lm/W

### Environmental

Ambient Temperature	32 – 104 °F (0 – 40 °C)
Extended Ambient Temperature	-32 – 32 °F (-35 – 0 °C) <sup>4</sup>
Humidity	0 – 95%, Non-condensing
Certification	UL, cUL, 120 V~: FCC Class B, IC Rated; Title 24 [JA8] <sup>5</sup>
Location	UL Damp Location, UL Wet Location (shower) available with Trim Lens Installation not compatible with Metal Ceilings UL2043 and CAN/ULC-S142 rated for use in air handling spaces (plenums)
Outdoor/Indoor	Outdoor use available for residential enclosed/covered patio applications. Trim lens required
Warranty	5 year fixture, LED and dimming warranty

### Mechanical

Mounting Options	Hanger Bars/Butterfly Brackets
Field Replaceable Optics	Yes
Field Replaceable Light Engine	Yes
Field Replaceable Power Supply	Yes
Fixture Weight	Fixed: 5.7 lb (2.59 kg) Adjustable: 6.2 lb (2.81 kg)
Housing Material	Pre-painted Steel, Polymer
Lens Material	Plastic
Field Fixture Type Convertibility	Adjustable Fixture can be used to achieve same features of an Adjustable and Fixed Fixture only. Fixed Fixture can only be used as a Fixed Fixture. Wall Wash Fixture can only be used as a Wall Wash Fixture.

<sup>1</sup> All measurements are considered typical performance and were taken with 1 in (25.4 mm) white trim, with light engine at nadir, at 3000 K, 25 °C ambient, 100% power input, no accessory, unless otherwise stated.

<sup>2</sup> Lumen measurement complies with IES LM-79-08 testing procedures.

<sup>3</sup> Lumen maintenance values calculated in accordance to TM-21 procedures based on LM-80 compliant measurement data.

<sup>4</sup> Color accuracy not guaranteed in Extended Ambient Temperature range.

<sup>5</sup> All products in the D2 family are Title 24 JA8 compliant when installed with a Trim Accessory lens on the trim. For more information, please contact Lighting Technical Support at [lightingsupport@lutron.com](mailto:lightingsupport@lutron.com) or 1.844.LUTRON1 (1.844.588.7661).

## SPECIFICATIONS<sup>1</sup> (continued)

### Dimensions

Ceiling Hole Diameter/Width	3.25 in (82.55 mm) flanged; 3.75 in (95.25 mm) flangeless mud-in; 2.79 in (70.87 mm) flangeless millwork
Ceiling Thickness (min-max)	0.625 – 2 in (15.8 – 50.8 mm)
Modular Emitter/LED Module Diameter	2.15 in (54.61 mm)
Housing Vertical Adjustment via Butterfly Bracket	1.75 in (44.5 mm)
Trim Thickness	0.050 in (12.7 mm)
Adjustability	Adjustable: Emitter tilt to 40 degree Emitter full 365 degree rotation Collar 95 degree rotation Wall Wash: Emitter full 365 degree rotation Collar 95 degree rotation Fixed: Collar 95 degree rotation
Housing Height	Adjustable: 3.48 in (88.39 mm) Fixed & Wall Wash: 2.14 in (54.31 mm)
Housing Length	16.36 in (415.54 mm)
Housing Width	10.07 in (255.78 mm)

### Electrical

Power Consumption	18 W
Power Factor	>0.9
Inrush Current	800 mA, 0.2 mS duration
Surge Protection	2.5 KV
Voltage	120 V~ 60 Hz
Emergency Lighting	Evaluated by UL <sup>®</sup> for use in emergency lighting systems in accordance with standard UL <sup>®</sup> 924 and CSA C22.2 No. 141 when paired with the LVS <sup>™</sup> model LUT-SHUNT-A-TD (UL <sup>®</sup> file E206507) <sup>2</sup> .

<sup>1</sup> All measurements are considered typical performance and were taken with 1 in (25.4 mm) white trim, with light engine at nadir, at 3000 K, 25 °C ambient, 100% power input, no accessory, unless otherwise stated.

<sup>2</sup> See Lutron Application Note 106 (P/N 048106) at [www.lutron.com](http://www.lutron.com) for wiring details of emergency lighting in commercial systems.

## HOUSING ORDERING GUIDE

Please download this PDF to use the interactive drop down features of the ordering guide.

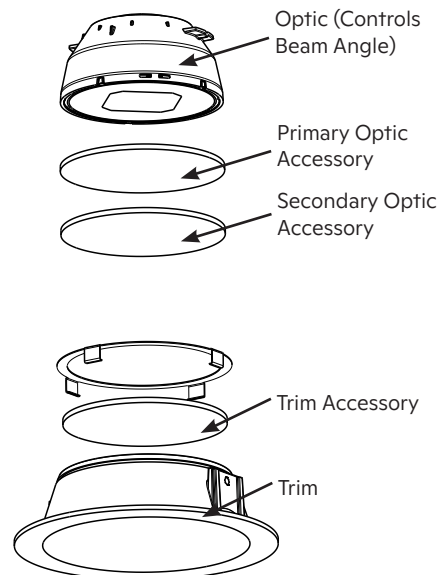
### Housing

	D2-	TW					18
Product Line	Series	LED Type	Fixture Type	Shape	Ceiling Interface	Ceiling Thickness	Power Consumption
GT			11				
Control System	Beam Angle	Optic Style	Region/Voltage	Location	Primary Optic Accessory	Secondary Optic Accessory	

Order code: \_\_\_\_\_

Product Line	Code	Control System	Code
Commercial (Athena compatible)	CM-	CCX (Clear Connect-Type X)	GT
Residential (HomeWorks compatible)	HW-		
<b>Series</b>		<b>Beam Angle</b>	
D2 Fixture	D2-	Spot (15°)	15
		Narrow Flood (25°)	25
		Flood (40°)	40
		Wide Flood (60°)	60
		Wall Wash <sup>1</sup>	WW
<b>LED Type</b>		<b>Optic Style</b>	
Rania	TW	Low Glare	L
		High Output	H
		Wall Wash <sup>1</sup>	W
<b>Fixture Type</b>		<b>Region/Voltage</b>	
Adjustable	AD	120 V~ 60 Hz, North America	11
Fixed	FX		
Wall Wash <sup>1</sup>	WW	<b>Location</b>	
		Indoor	I
		Outdoor (HomeWorks Resi Products only) <sup>2</sup>	O
<b>Shape</b>		<b>Primary Optic Accessory</b> <sup>3,5</sup>	
Square	SQ	Soft Focus Lens <sup>3,5</sup>	S1
Round	RD	Frosted Lens <sup>3,5</sup>	F1
No Collar (to be specified later)	XX	Linear Lens <sup>3,5</sup>	L1
		Hex Louver <sup>4,5</sup>	H1
		None	XX
<b>Ceiling Interface</b>		<b>Secondary Optic Accessory</b> <sup>3,5</sup>	
Flanged	F	Soft Focus Lens <sup>3,5</sup>	S1
Flangeless Mud-In	X	Frosted Lens <sup>3,5</sup>	F1
Flangeless Millwork	M	Linear Lens <sup>3,5</sup>	L1
		Hex Louver <sup>4,5</sup>	H1
		None	XX
<b>Ceiling Thickness</b>			
Standard Ceiling 0.625 - 1.25 in (15.9 - 21.75 mm)	S		
Thick Ceiling 1.3 - 2.0 in (33.0 - 50.8 mm)	T		
<b>Power Consumption</b>			
18 W	18		

Optic & Trim Exploded View <sup>3</sup>



<sup>1</sup> Wall Wash fixture is unique and cannot be converted to other fixture types and vice versa.  
<sup>2</sup> D2s are available for residential exterior applications only and must have a trim installed with a lens.  
<sup>3</sup> Maximum of 2 accessories available at once across the optic and trim accessories.  
<sup>4</sup> When specifying a Hex Louver no additional optic or trim accessory is allowed.  
<sup>5</sup> The addition of accessory lens will reduce lumen output. Additional information coming soon.



## D2 FIXTURE

P/N 3662962 Rev C

Specifications are subject to change without notice

### TRIM ORDERING GUIDE

#### Trim

##### UN-

Product  
Line

##### D2

Series

Ceiling  
Interface

Aperture  
Profile

Trim Finish

Trim  
Accessory

Order code: \_\_\_\_\_

Product Line	Code
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Universal	UN-
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##### Series

D2 Fixture	D2
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##### Ceiling Interface

Flanged	F
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Flangeless Mud-In	X
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Flangeless Millwork	M
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##### Aperture Profile

Bevel	B
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Pinhole	P
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Wall Wash <sup>2</sup>	W
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##### Trim Finish

White <sup>1</sup>	WH
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Black	BK
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Gloss Black	GB
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Bronze	RB
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Silver	SR
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Silver/White	SW
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Black/White	BW
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Gloss Black/White	GW
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##### Trim Accessory <sup>2,4</sup>

Soft Focus Lens <sup>2,4</sup>	S1
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Frosted Lens <sup>2,4</sup>	F1
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Linear Lens <sup>2,4</sup>	L1
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Clear Lens <sup>2,4</sup>	C1
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Wall Wash Lens <sup>3,4</sup>	WW
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None	XX
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<sup>1</sup> White finish can be used as a primer for customer selected and applied paint.

<sup>2</sup> Maximum of 2 accessories available at once across the optic and trim accessories.

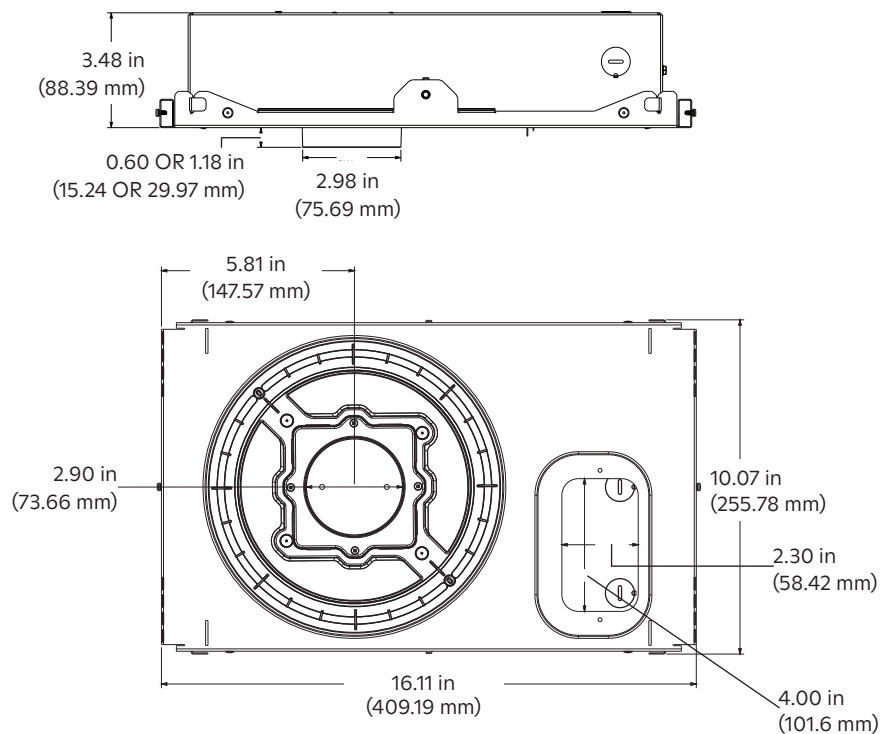
<sup>3</sup> Wall Wash fixture is unique and cannot be converted to other fixture types and vice versa.

<sup>4</sup> The addition of accessory lens will reduce lumen output. Additional information will be coming soon

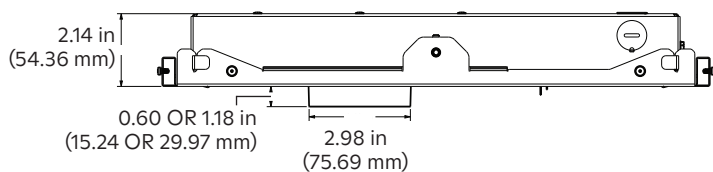
## PRODUCT DIMENSIONS

### Flanged Housing, Round

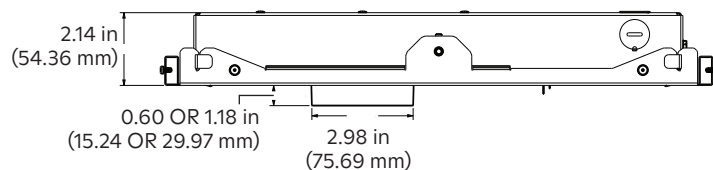
#### Adjustable



#### Fixed

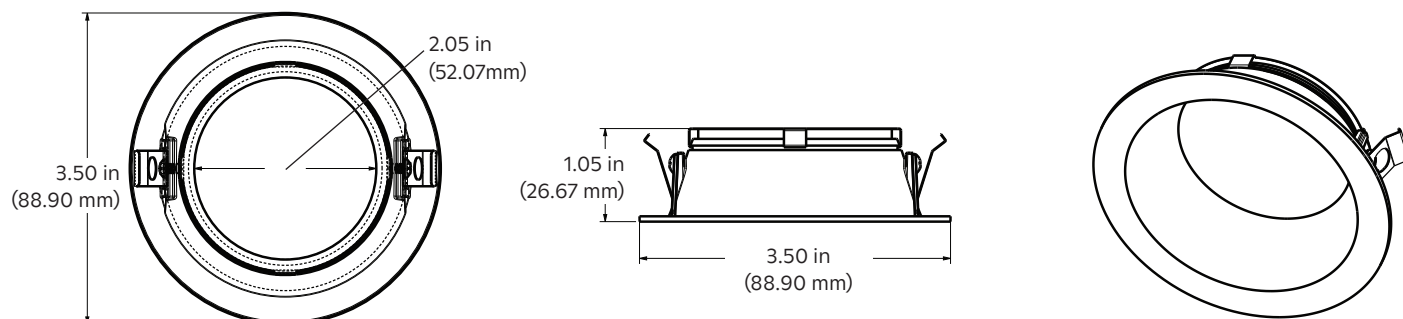


#### Wall Wash

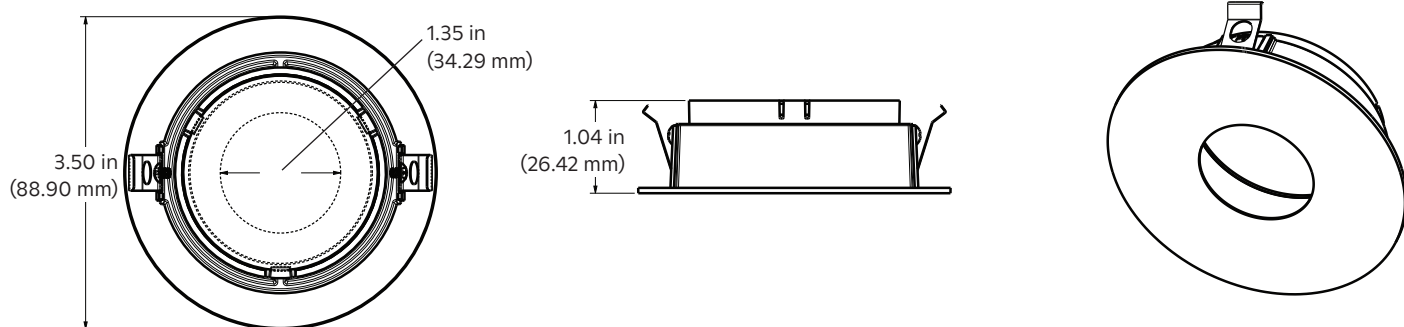


## PRODUCT DIMENSIONS (cont.)

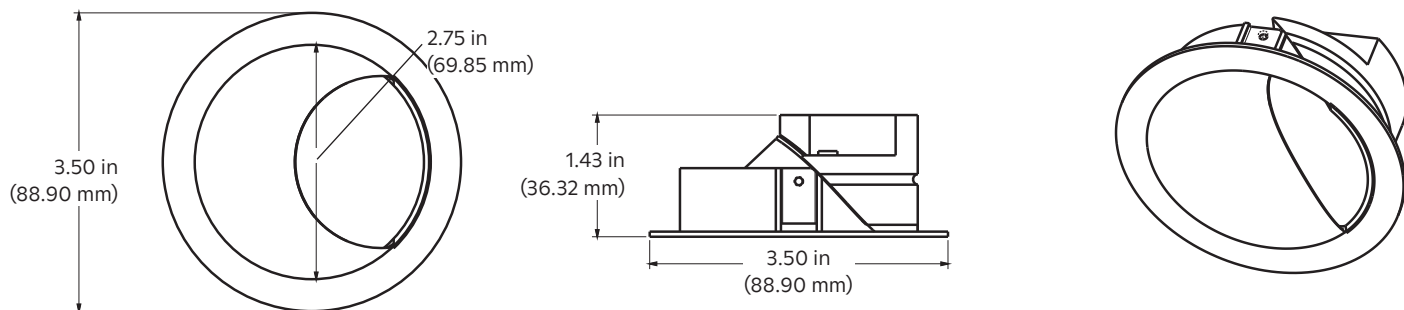
### Flanged Bevel Trim, Round



### Flanged Pinhole Trim, Round



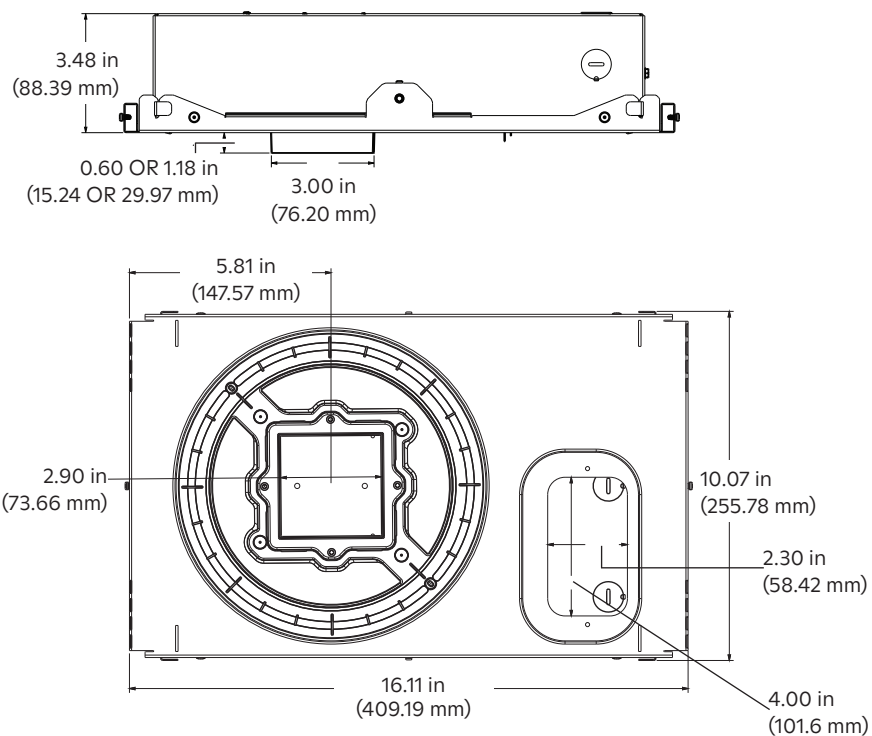
### Flanged Wall Wash Trim, Round



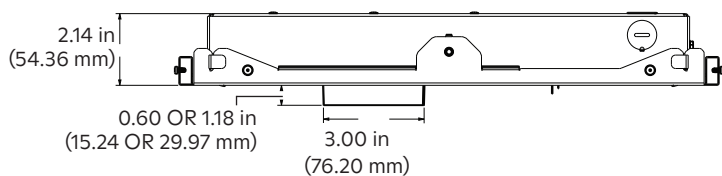
## PRODUCT DIMENSIONS (cont.)

### Flanged Housing, Square

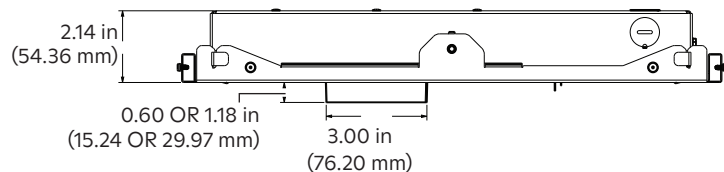
#### Adjustable



#### Fixed



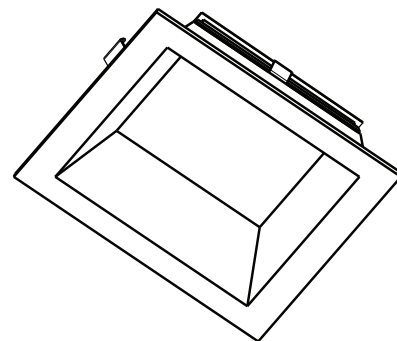
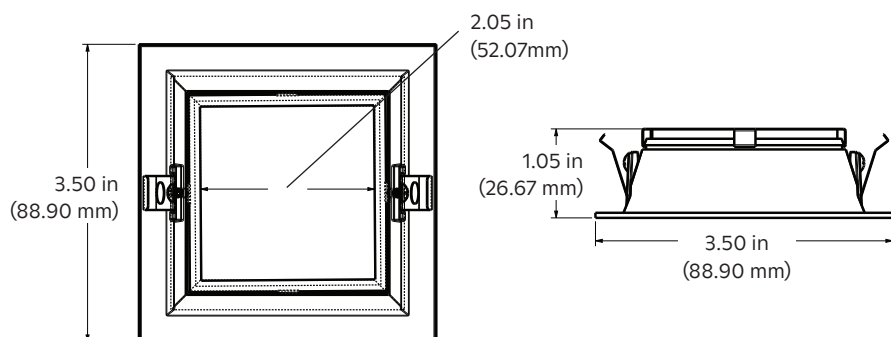
#### Wall Wash



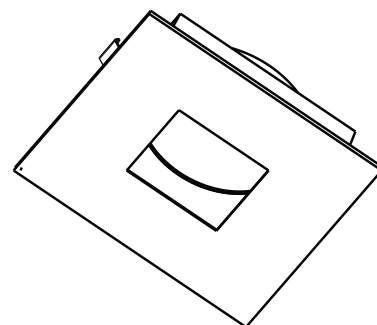
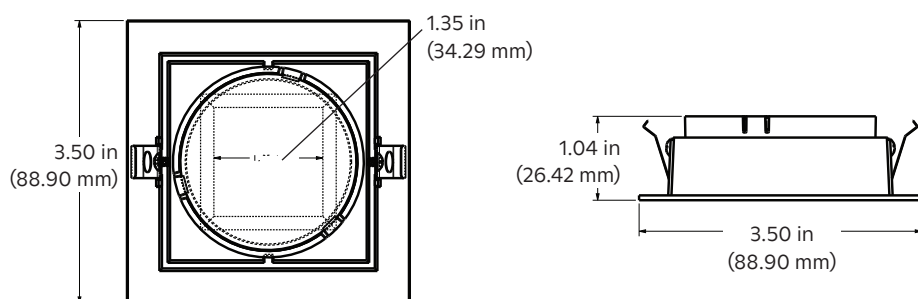


## PRODUCT DIMENSIONS (cont.)

### Flanged Bevel Trim, Square



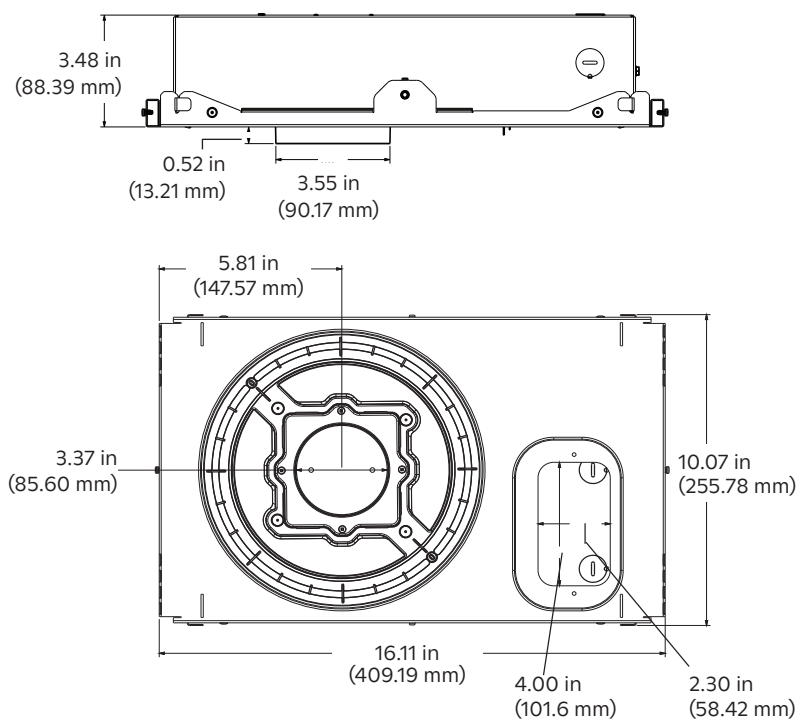
### Flanged Pinhole Trim, Square



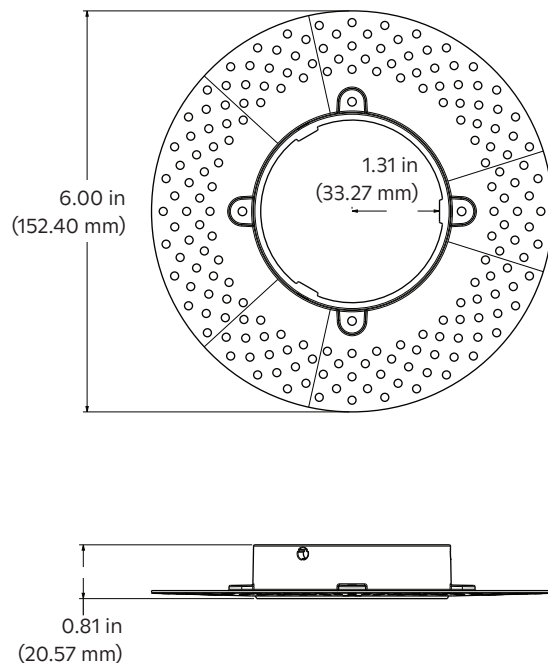
## PRODUCT DIMENSIONS (cont.)

### Flangeless Mud-In Housing, Round

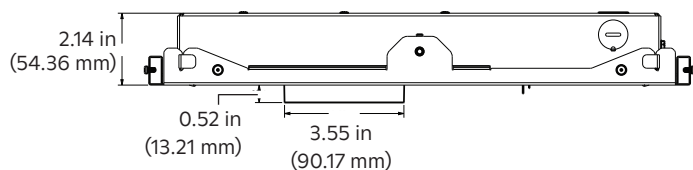
#### Adjustable



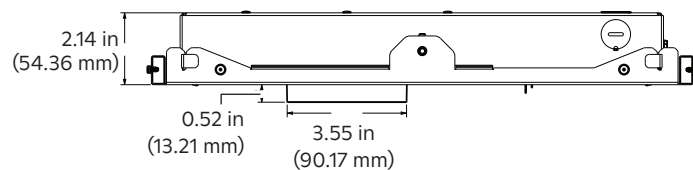
### Flangeless Mud-In Trim Retainer, Round



#### Fixed



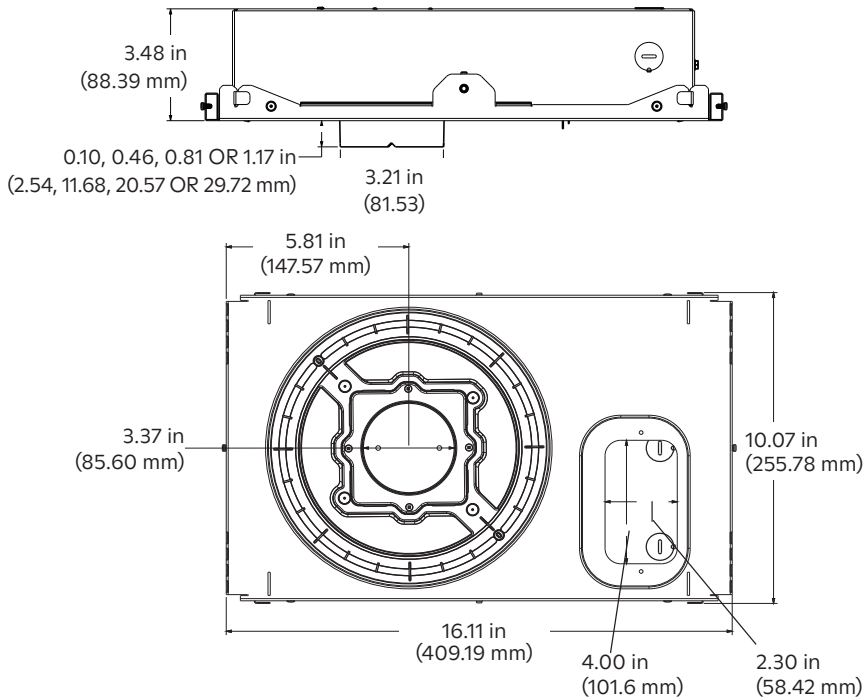
#### Wall Wash



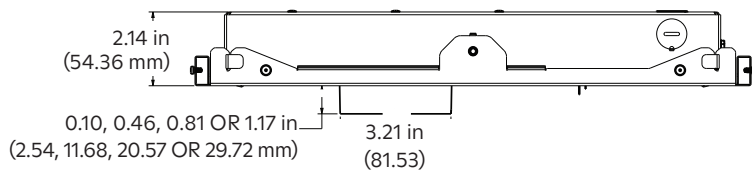
## PRODUCT DIMENSIONS (cont.)

### Flangeless Millwork Housing, Round

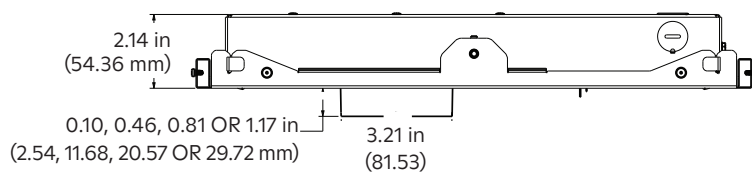
#### Adjustable



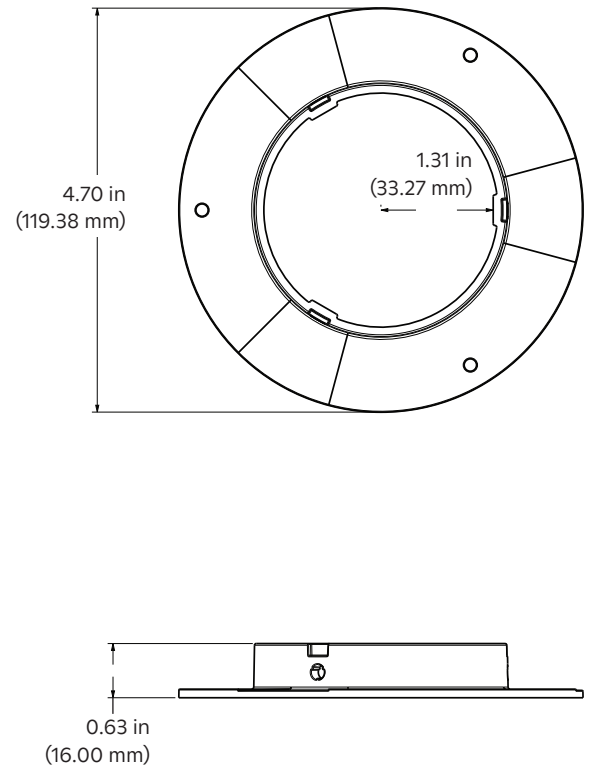
#### Fixed



### Wall Wash

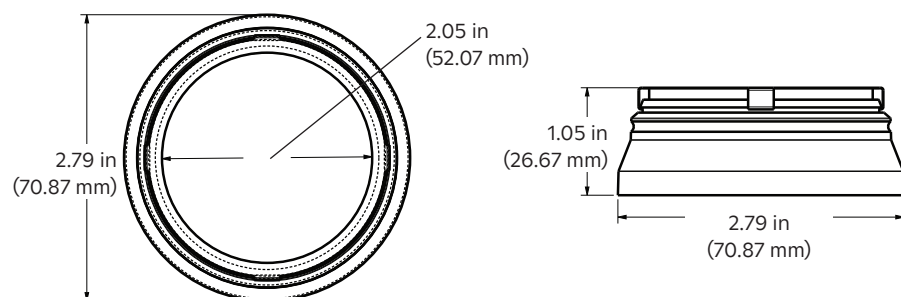


### Flangeless Millwork Trim Retainer, Round

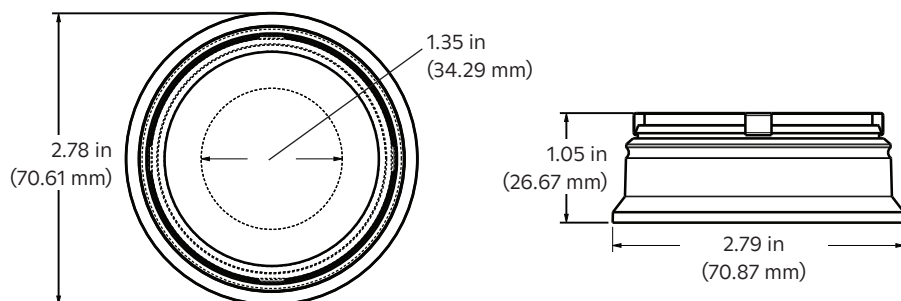


## PRODUCT DIMENSIONS (cont.)

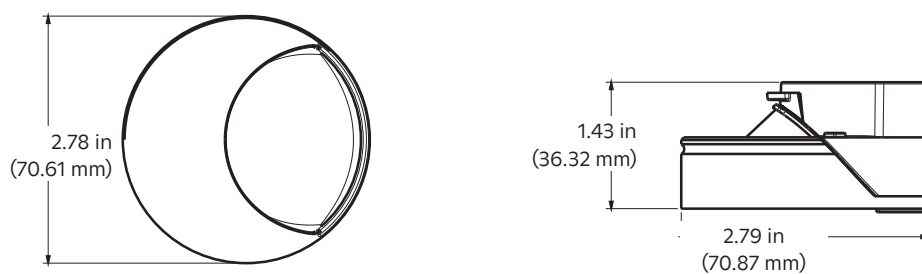
### Flangeless Bevel Trim, Round



### Flangeless Pinhole Trim, Round



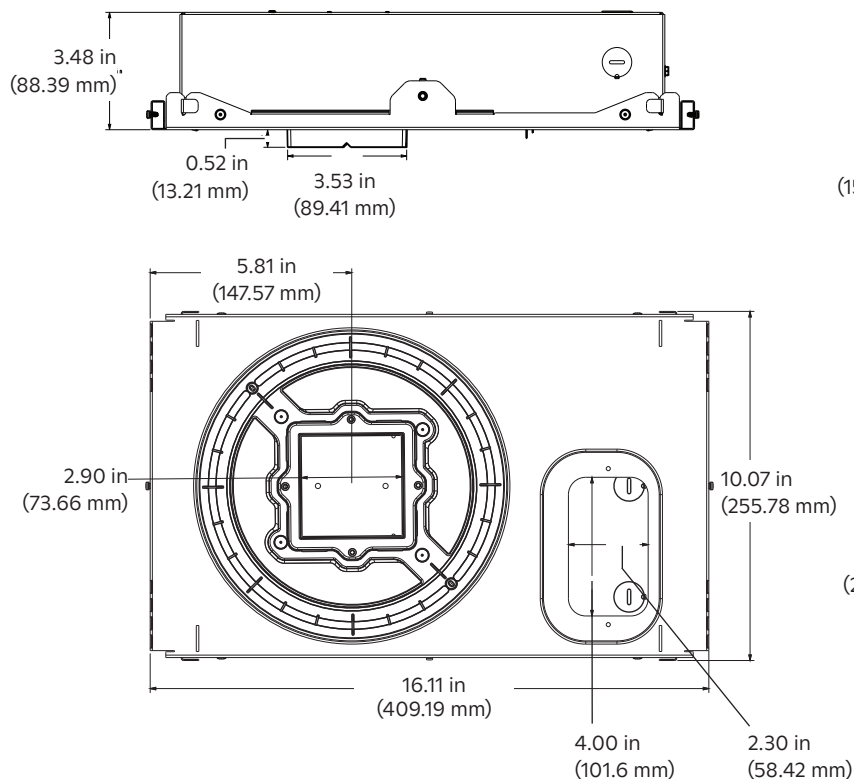
### Flangeless Wall Wash Trim, Round



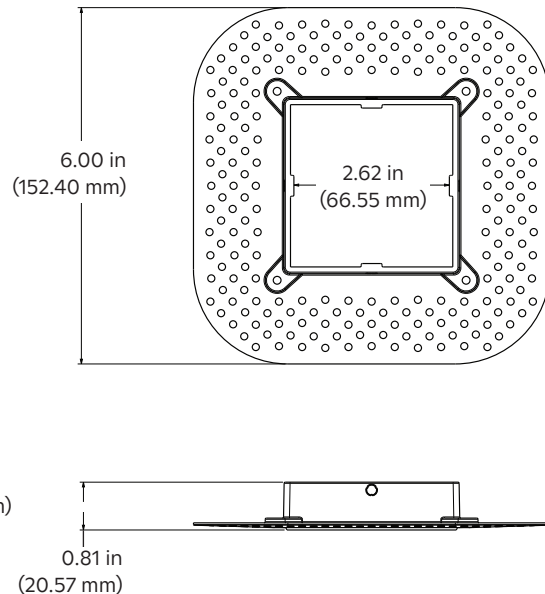
## PRODUCT DIMENSIONS (cont.)

### Flangeless Mud-In Housing, Square

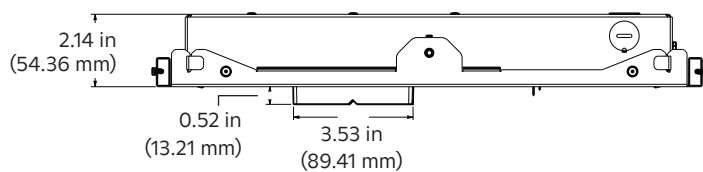
#### Adjustable



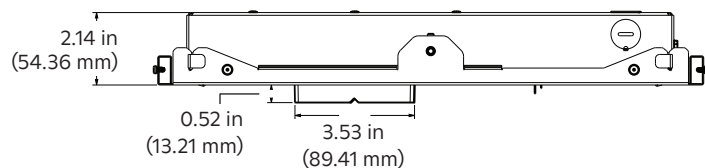
### Flangeless Mud-In Trim Retainer, Square



#### Fixed



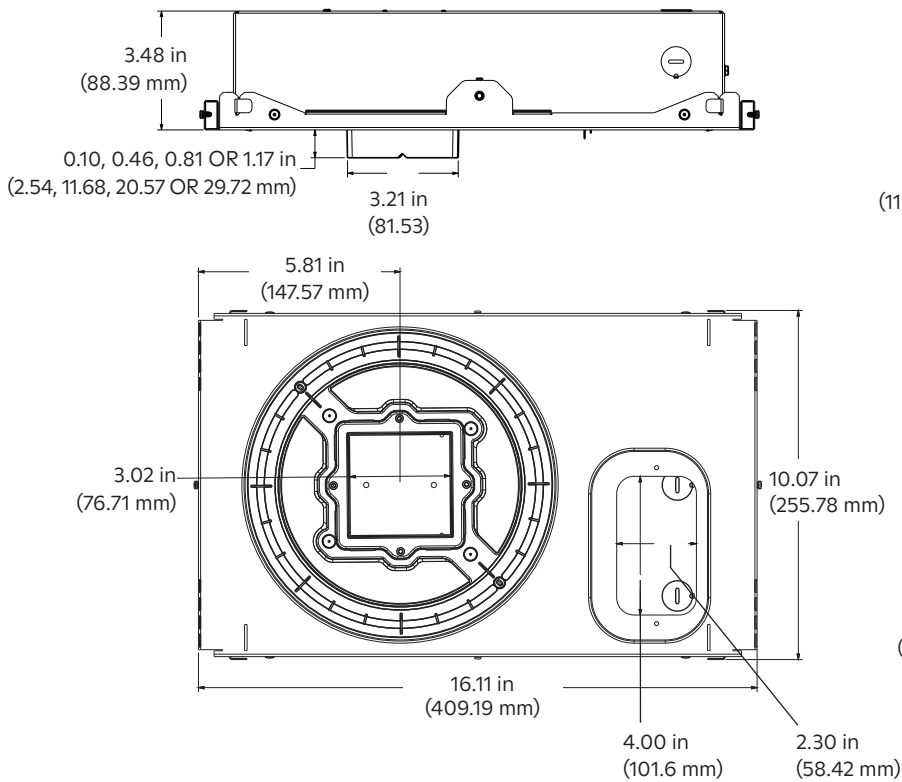
### Wall Wash



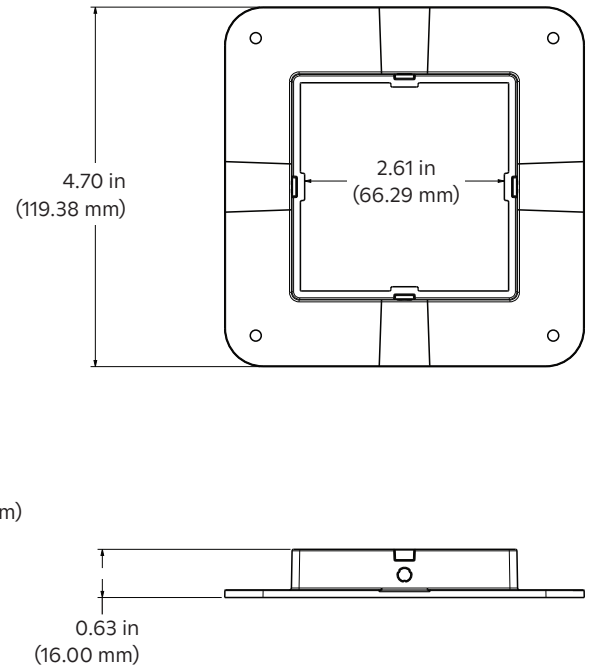
## PRODUCT DIMENSIONS (cont.)

### Flangeless Millwork Housing, Square

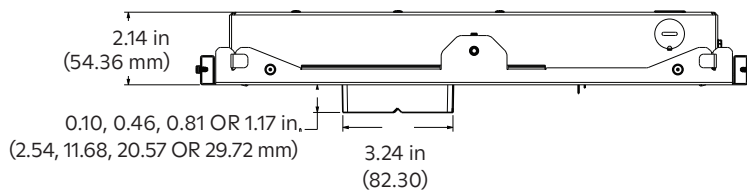
#### Adjustable



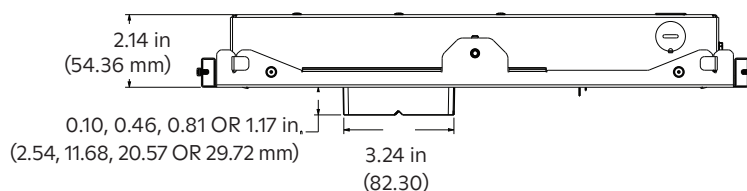
### Flangeless Millwork Trim Retainer, Square



#### Fixed

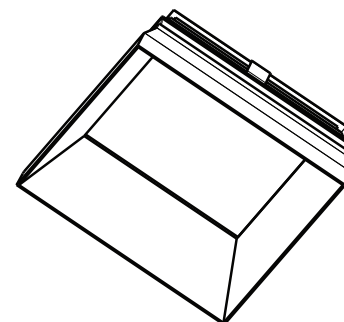
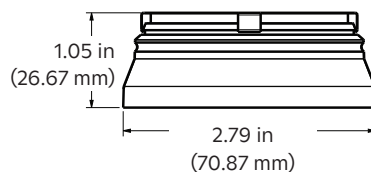
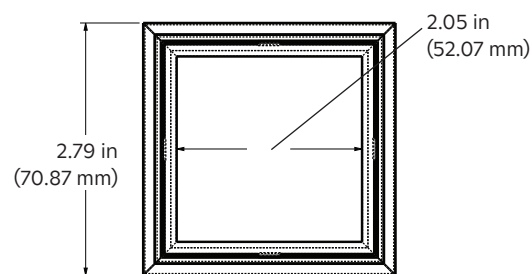


### Wall Wash

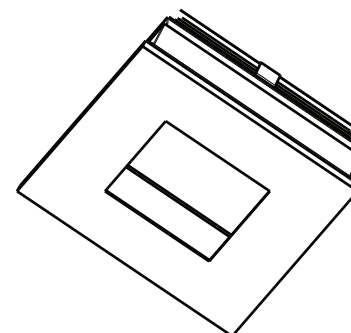
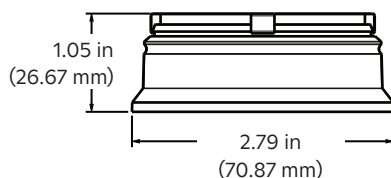
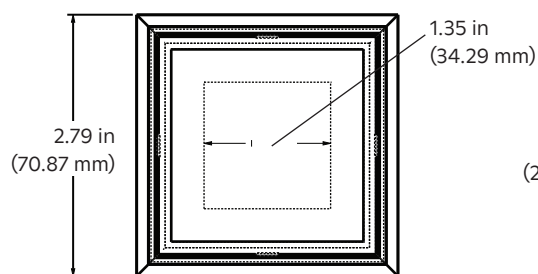


## PRODUCT DIMENSIONS (cont.)

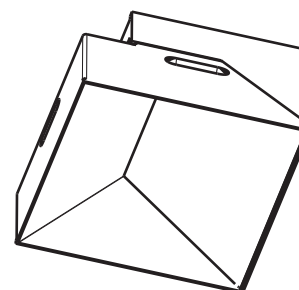
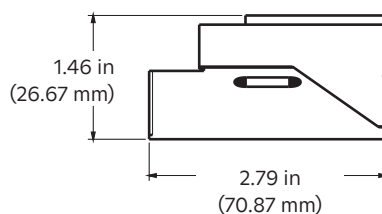
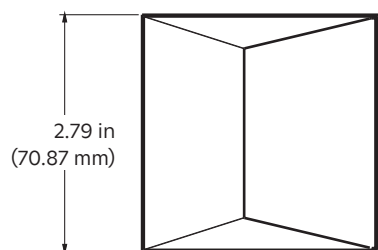
### Flangeless Bevel Trim, Square



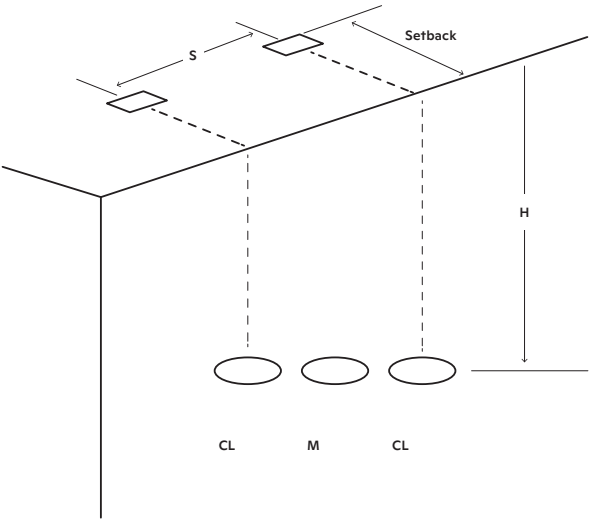
### Flangeless Pinhole Trim, Square



### Flangeless Wall Wash Trim, Square



PLACEMENT GUIDE FOR MULTIPLE WALL WASH UNITS



Typical Footcandles Measured on the Wall

2 ft (0.6 m) from wall ("Setback")	2 ft (0.6 m) on Center (S)			3 ft (0.9 m) on Center (S)			4 ft (1.2 m) on Center (S)		
Distance from Ceiling (H)	CL	M	CL	CL	M	CL	CL	M	CL
1 ft (0.305 m)	34	32	34	26	18	26	24	10	24
2 ft (0.609 m)	36	37	36	27	23	27	23	13	23
3 ft (0.914 m)	30	30	30	21	19	21	18	13	18
4 ft (1.219 m)	23	23	23	16	15	16	14	11	14
5 ft (1.524 m)	17	18	17	12	12	12	10	8	10
6 ft (1.828 m)	14	14	14	10	10	10	8	7	8
7 ft (2.133 m)	11	11	11	7	7	7	6	6	6
8 ft (2.438 m)	8	8	8	6	6	6	5	5	5
9 ft (2.743 m)	6	6	6	5	5	5	4	4	4
10 ft (3.048 m)	6	6	6	4	4	4	3	3	3

3 ft (0.9 m) from wall ("Setback")	2 ft (0.6 m) on Center (S)			3 ft (0.9 m) on Center (S)			4 ft (1.2 m) on Center (S)		
Distance from Ceiling (H)	CL	M	CL	CL	M	CL	CL	M	CL
1 ft (0.305 m)	15	15	15	10	10	10	8	6	8
2 ft (0.609 m)	23	23	23	16	15	16	13	11	13
3 ft (0.914 m)	23	23	23	16	16	16	13	11	13
4 ft (1.219 m)	20	20	20	15	15	15	11	11	11
5 ft (1.524 m)	17	17	17	12	12	12	10	9	10
6 ft (1.828 m)	15	15	15	11	11	11	8	8	8
7 ft (2.133 m)	12	11	12	9	9	9	6	6	6
8 ft (2.438 m)	10	10	10	7	7	7	6	6	6
9 ft (2.743 m)	8	8	8	6	6	6	5	5	5
10 ft (3.048 m)	7	6	7	6	6	6	4	4	4



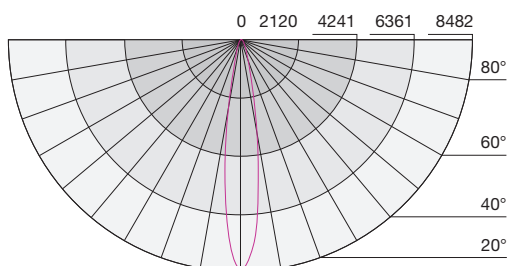
## PHOTOMETRIC DATA<sup>1</sup>

### Beam Angle: 15° Spot, Low Glare

Model Number	Wattage	Delivered Lumens	CBCP
XX_D2-TWFXRDFS18GT15L-XXXX	18 W	1018	8482

Foot-candles	Beam Dia.
236	6 ft (1.8 m)
133	8 ft (2.4 m)
85	10 ft (3 m)
59	12 ft (3.7 m)
43	14 ft (4.3 m)

Distance From Light

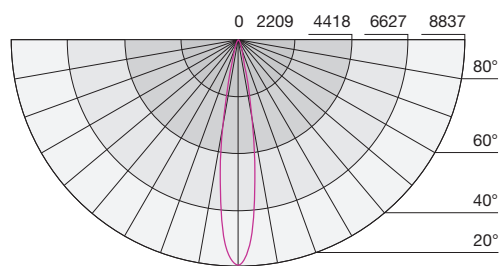


### Beam Angle: 15° Spot, High Output

Model Number	Wattage	Delivered Lumens	CBCP
XX-D2-TWFXRDFS18GT15H-XXXX	18 W	1161	8837

Foot-candles	Beam Dia.
245	6 ft (1.8 m)
138	8 ft (2.4 m)
88	10 ft (3 m)
61	12 ft (3.7 m)
45	14 ft (4.3 m)

Distance From Light

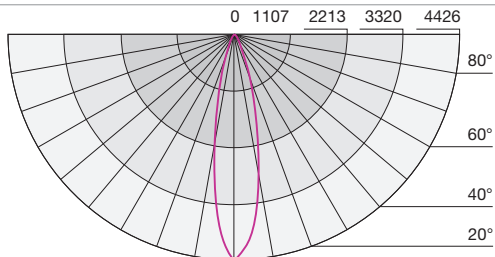


### Beam Angle: 25° Spot, Low Glare

Model Number	Wattage	Delivered Lumens	CBCP
XX-D2-TWFXRDFS18GT25L-XXXX	18 W	1040	4426

Foot-candles	Beam Dia.
123	6 ft (1.8 m)
69	8 ft (2.4 m)
44	10 ft (3 m)
31	12 ft (3.7 m)
23	14 ft (4.3 m)

Distance From Light

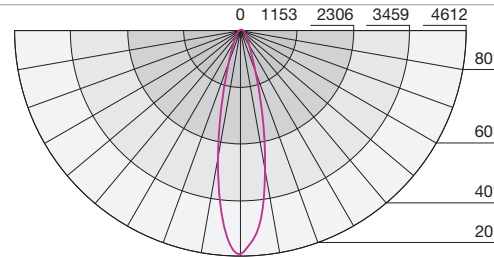


### Beam Angle: 25° Spot, High Output

Model Number	Wattage	Delivered Lumens	CBCP
XX-D2-TWFXRDFS18GT25H-XXXX	18 W	1151	4612

Foot-candles	Beam Dia.
128	6 ft (1.8 m)
72	8 ft (2.4 m)
46	10 ft (3 m)
32	12 ft (3.7 m)
24	14 ft (4.3 m)

Distance From Light



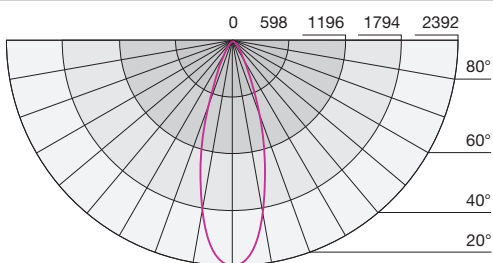
<sup>1</sup> All data is simulated to represent the typical performance expected with the following parameters: 1 in (25.4 mm) white trim, with light engine at nadir, at 3000 K, 25 °C ambient, 100% power input, default vibrancy, unless otherwise stated.

## PHOTOMETRIC DATA<sup>1</sup> (cont.)

### Beam Angle: 40° Wide Flood, Low Glare

Model Number	Wattage	Delivered Lumens	CBCP
XX-D2-TWFXRDFS18GT40L-XXXX	18 W	884	2392

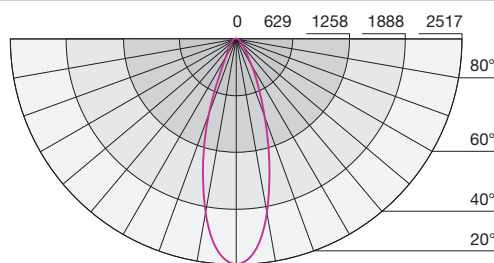
Foot-candles	Beam Dia.
66	6 ft (1.8 m)
37	8 ft (2.4 m)
24	10 ft (3 m)
17	12 ft (3.7 m)
12	14 ft (4.3 m)



### Beam Angle: 40° Wide Flood, High Output

Model Number	Wattage	Delivered Lumens	CBCP
XX-D2-TWFXRDFS18GT40H-XXXX	18 W	1078	2517

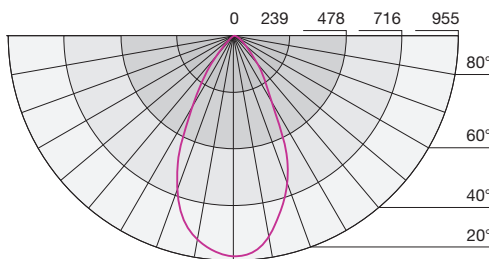
Foot-candles	Beam Dia.
70	6 ft (1.8 m)
39	8 ft (2.4 m)
25	10 ft (3 m)
17	12 ft (3.7 m)
13	14 ft (4.3 m)



### Beam Angle: 60° Very Wide Flood, Low Glare

Model Number	Wattage	Delivered Lumens	CBCP
XX-D2-TWFXRDFS18GT60L-XXXX	18 W	856	955

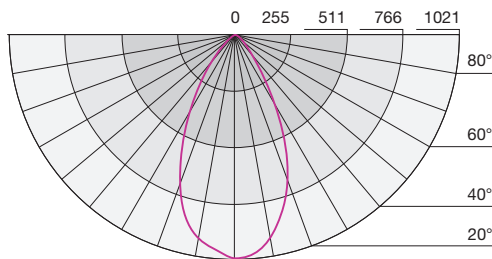
Foot-candles	Beam Dia.
27	6 ft (1.8 m)
15	8 ft (2.4 m)
10	10 ft (3 m)
7	12 ft (3.7 m)
5	14 ft (4.3 m)



### Beam Angle: 60° Very Wide Flood, High Output

Model Number	Wattage	Delivered Lumens	CBCP
XX-D2-TWFXRDFS18GT60H-XXXX	18 W	1018	1021

Foot-candles	Beam Dia.
28	6 ft (1.8 m)
16	8 ft (2.4 m)
10	10 ft (3 m)
7	12 ft (3.7 m)
5	14 ft (4.3 m)



<sup>1</sup> All data is simulated to represent the typical performance expected with the following parameters: 1 in (25.4 mm) white trim, with light engine at nadir, at 3000 K, 25 °C ambient, 100% power input, default vibrancy, unless otherwise stated.



## D2 General Specifications

Rania's D2 LED Downlight can easily be commissioned into Lutron HomeWorks or Athena systems.

**Wireless Capability:** LED light source shall have an integrated wireless control on board.

**Color Rendering Index (CRI):** Capable of CRI greater than 90 at any point along the Black Body Curve from 2,700K to 5,000K.

### **Single Source Multi-Die Modular Emitter/LED Module**

**Design:** Employ a single source multi-die modular emitter/LED module consisting of LEDs binned to 3-step MacAdam ellipses.

**LED Estimated Useful Life:** Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.

**Diagnostic reporting capability<sup>1</sup>:** Clear Connect-Type X (CCX) light sources provide diagnostics and built-in technology to check input voltage and wireless connectivity.

**Warranty:** Lutron's light source is warrantied to be free from defects in material and workmanship for five ( 5 ) years or 25,000 hours from date of shipment, whichever is less.

### **Lighting System Capable of the Following Dimming Functionality:**

1. Automatically mimicking natural daylight by shifting Correlated Color Temperature (CCT) and intensity based on time-of-day.
2. Shifting from high CCT at high intensity to low CCT at low intensity, mimicking dimming curve of an incandescent lamp.

**Dimming Range:** Dimmable from 100 to 0.1 percent measured luminous flux.

**Color Point Range:** Single light source capable of producing white light from 1,800K to 5,500K Correlated Color Temperature (CCT).

<sup>1</sup> For diagnostics support or more information, please contact Lighting Technical Support at [lightingsupport@lutron.com](mailto:lightingsupport@lutron.com) or 1.844.LUTRON1 (1.844.588.7661).