

## D3 Fixed, Square

### PRODUCT DESCRIPTION

Ketra full spectrum 3 in (76.2 mm) recessed LED downlights are available in fixed, adjustable, and wall-wash options to complete any lighting design project.

### FEATURES

**High Def Palette**—covers a wide range of 16.7 million colors, including pastels, saturated colors and high CRI whites spanning from 1,400K to 10,000K.

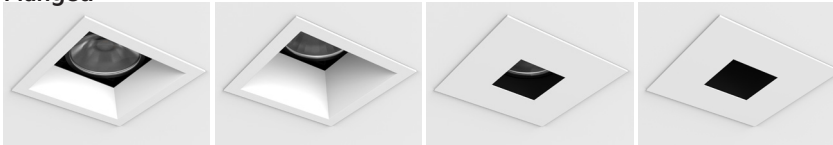
**Dynamic Spectrum**—precisely tunes the amount of energy across the visible spectrum to produce Natural Light, Natural Dimming and Vibrancy.

**TruBeam**—produces uniform color across any available beam angle.

**Color Lock**—maintains your desired color point at a one-step MacAdam Ellipse across all Ketra product families and over each product's lifetime.

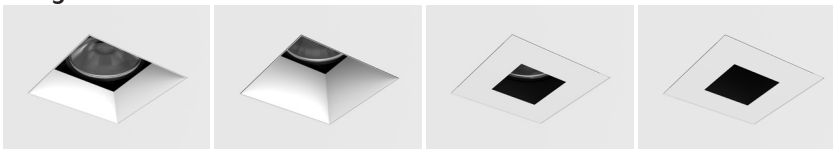
### OPTIONS

#### Flanged



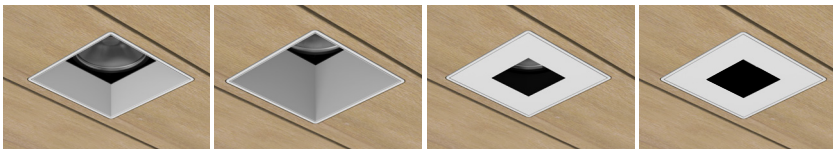
Shallow      Deep      Shallow Pinhole      Deep Pinhole

#### Flangeless Mud-in



Shallow      Deep      Shallow Pinhole      Deep Pinhole

#### Flangeless Millwork

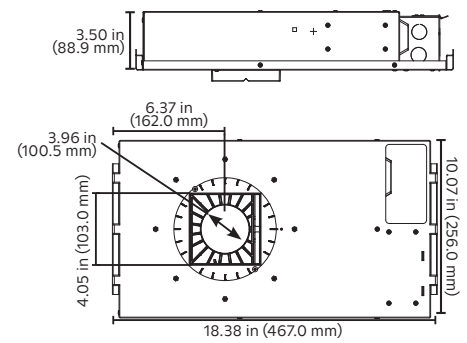


Shallow      Deep      Shallow Pinhole      Deep Pinhole

### Colors



White      Black      Silver      Bronze      Paintable White



## SPECIFICATIONS<sup>1</sup>

### Optical Performance

Delivered Lumen Output <sup>2</sup>				
Beam Angle (1 in [25.4 mm] recess)	9 W	13 W	18 W	Pinhole lm multiplier
15° beam, low glare	650 lm	882 lm	1092 lm	0.57
25° beam, low glare	623 lm	845 lm	1046 lm	0.48
40° beam, low glare	569 lm	772 lm	955 lm	0.61
60° beam, low glare	561 lm	760 lm	941 lm	0.60
15° beam, high output	682 lm	928 lm	1148 lm	0.62
25° beam, high output	678 lm	923 lm	1142 lm	0.48
40° beam, high output	646 lm	878 lm	1087 lm	0.54
60° beam, high output	630 lm	857 lm	1061 lm	0.55
CRI (Ra)	>90 (R9 >90)			
Lumen Maintenance <sup>3</sup>	50,000 hours to L70 @ 25°C T <sub>A</sub>			
Color Point Range <sup>4</sup>	1400 K–10,000 K, Fully Saturated, & Pastel			
Equivalent Traditional Lamp	75W halogen			
Dimming Range <sup>4</sup>	0.1-100%			
Delivered Efficacy				
Beam Angle (1 in [25.4 mm] recess)	9 W	13 W	18 W	
15° beam, low glare	72 lm/W	68 lm/W	61 m/W	
25° beam, low glare	69 lm/W	65 lm/W	58 lm/W	
40° beam, low glare	63 lm/W	59 lm/W	53 lm/W	
60° beam, low glare	62 lm/W	58 lm/W	52 lm/W	
15° beam, high output	76 lm/W	71 lm/W	63 lm/W	
25° beam, high output	75 lm/W	71 lm/W	62 lm/W	
40° beam, high output	72 lm/W	68 lm/W	59 lm/W	
60° beam, high output	70 lm/W	66 lm/W	58 lm/W	
Surge Protection	2.5 KV			

### Environmental

Ambient Temperature (T <sub>A</sub> )	0 - 40 °C <sup>6</sup>
Storage Temperature	-20 - 80 °C
Humidity	0 - 95%, Non-condensing
Certification	UL, cUL, 120 V~: FCC Class B, 277 V~: FCC Class A, Title 24 [JA8]*
Location	UL Damp Location, UL Wet Location (shower) available with Trim Lens
Exterior/Interior	Exterior use available for residential applications with Trim Lens
Extended Ambient Temperature	-35 - 0 °C <sup>6,7</sup>

### Mechanical

Mounting Options	Hanger Bars/ Butterfly Brackets
Field Replaceable Optics	Yes
Field Replaceable Light Engine	Yes
Field Replaceable Power Supply	Yes
Additional Optic Lens	2.5 in (63.5 mm) lens, ⅛ in (3.18 mm) thick
Additional Trim Lens	2.75 in (69.85 mm) lens, ⅛ in (3.18 mm) thick
Fixture Weight	7.75 lb (3.51 kg)
Housing Material	Powder Coated Steel, Polymer
Lens Material	Glass

### Dimensions

Ceiling Square Cut-out	4 in (101.6 mm) flanged; 5.5 in (139.70 mm) flangeless mud-in; 4 in (101.6 mm) flangeless millwork
Trim Outside Dimension	4.63 in (117.6 mm) flanged; 3.75 in (95.2 mm) flangeless mud-in; 4 in (101.6 mm) flangeless millwork
Trim Inside Dimension	Flanged: 2.84 in (72.14 mm) Bevel 1.97 in (50 mm) Pinhole Flangeless: 2.76 in (70.1 mm) Bevel 1.97 in (50 mm) Pinhole
Trim Thickness	⅛ in (1.6 mm) (Flanged trims only)
Optics Outside Dimension	2.5 in (63.5 mm)
Trim Depth	1 in (25.4 mm), 2 in (50.8 mm)
Ceiling Thickness (min-max)	Flangeless mud-in: 0.625 - 1.5 in (15.8 - 38.1 mm) Flangeless millwork collar: 0.625 - 2.5 in (15.8 - 63.5 mm)
Modular Emitter/LED Module (tool-free)	0.75 in (19 mm)
Housing Vertical Adjustment via Butterfly Bracket	1.75 in (44.5 mm)
Service Position	Tilt to 40° Full 364° Rotation
Housing Height	3.50 in (88.9 mm)
Housing Length	18.38 in (466.8 mm)
Housing Width	10 in (254 mm)

### Electrical

Power Consumption	D3.09 9 W D3.13 13 W D3.18 18 W
Power Factor	>0.9
Inrush Current <sup>5</sup>	800 mA, 0.2 mS duration
Voltage	120 V~ 60 Hz 277 V~ 60 Hz
Emergency Lighting	Evaluated by UL® for use in emergency lighting systems in accordance with standard UL® 924 and CSA C22.2 No. 141 when paired with the LVS™ model LUT-SHUNT-A-TD (UL® file E206507) <sup>8</sup> .

<sup>1</sup> All performance measurements taken with 1 in (25.4 mm) white trim, with light engine at nadir and 1 in (25.4 mm) regress, at 3000 K, 25 °C ambient, 100% power input, default vibrancy, 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> Intensity and color point control requires compatible system.  
<sup>5</sup> For more information on inrush current, refer to Ketra's Inrush App Note in the Support section of our website.  
<sup>6</sup> Rated for direct application of spray foam with less than R-21 insulative value or 3 in (76.2 mm) of closed cell spray foam. 95 °F (35 °C) maximum ambient temperature.  
<sup>7</sup> Color accuracy not guaranteed in Extended Ambient Temperature range.  
<sup>8</sup> See Lutron Application Note 106 (P/N 048106) at [www.lutron.com](http://www.lutron.com) for wiring details. This is only applicable to CCX fixtures used in an Athena system.  
\* All products in the D3 family are Title 24 JA8 compliant. For more information please contact customer service at [ketrasales@lutron.com](mailto:ketrasales@lutron.com) or 844.588.6445.

## ORDERING GUIDE

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

## Housing

Product Line	Fixture / Trim	Power Consumption	Control System	
Beam Angle	Region / Voltage	Housing Type	Optic Accessory	Shipping Option
Order code: _____				

Product Line	Code	Beam Angle (continued)	Code
Commercial (Athena compatible)	CM-	Spot (15°) High Output	15H
Residential (HomeWorks compatible)	HW-	Flood (25°) High Output	25H
		Wide Flood (40°) High Output	40H
		Very Wide Flood (60°) High Output	60H
Fixture / Trim		Region/Voltage	
D3 Fixed, Square Flanged <sup>1,2</sup>	D3FXSQ	120 V~ 60 Hz, North America	11
D3 Fixed, Square Flangeless <sup>3,4,9</sup>	D3FXSM	277 V~ 60 Hz, North America	12
D3 Fixed, Collar Adapter Not Specified <sup>8</sup>	D3FXXX		
Power Consumption		Housing Type	
9 W	09	New Construction, IC/Airtight	NCIC
13 W	13	New Construction, IC/Airtight, Flangeless Millwork Trim <sup>3</sup>	NCIM
18 W	18	New Construction, IC/Airtight, Exterior Enclosed/Covered Porch <sup>5,6</sup>	NCOC
Control System		New Construction, IC/Airtight, Exterior Enclosed/Covered Porch, Flangeless Millwork Trim <sup>5,6</sup>	NCOM
CCX (Clear Connect-Type X)	GT		
Beam Angle		Optic Accessory <sup>7</sup> (See diagram on p. 3)	
Spot (15°) Low Glare	15L	None	N
Flood (25°) Low Glare	25L	Solite Lens	S
Wide Flood (40°) Low Glare	40L	Frosted Lens	F
Very Wide Flood (60°) Low Glare	60L	Hex Louver	H
		Shipping Option	
		Single Pack (Default, ships with Butterfly Brackets & 24 in Hanger Bars to be installed in field)	SP

## Trim

Product Line		
Model	Trim Finish	Trim Lens
Order code: _____		

Product Line	Code
Universal	UN-
Model	Code
Flanged Trim <sup>1,2</sup>	
D3 Square Shallow Bevel	D3TFSQ1
D3 Square Deep Bevel	D3TFSQ2
D3 Square Shallow Pinhole	D3TFSP1
D3 Square Deep Pinhole	D3TFSP2
Flangeless Mud-In Trim <sup>4</sup>	
D3 Square Shallow Bevel	D3TXSQ1
D3 Square Deep Bevel	D3TXSQ2
D3 Square Shallow Pinhole	D3TXSP1
D3 Square Deep Pinhole	D3TXSP2
Flangeless Millwork Trim <sup>3,4</sup>	
D3 Square Shallow Bevel	D3TMSQ1
D3 Square Deep Bevel	D3TMSQ2
D3 Square Shallow Pinhole	D3TMSP1
D3 Square Deep Pinhole	D3TMSP2
Trim Finish	
White	PWH
Black	PBK
Silver	PSR
Bronze	PBZ
Paintable White	CWH
Trim Lens <sup>7</sup> (See diagram on p. 3)	
None	N
Solite Lens	S
Frosted Lens	F

<sup>1</sup> D3 Fixed, Square flanged fixture (D3FXSQ) can only be used with flanged trims (D3TFS--), and is compatible with NCIC/NCOC housing type, but is incompatible with NCIM/NCOM.  
<sup>2</sup> Use flanged trims (D3TFS) on wood and stone ceilings with thickness in the range of 0.625 in - 1.5 in (15.8 mm - 38.1 mm) with NCIC/NCOC housing type.  
<sup>3</sup> D3 Fixed, Square flangeless fixture (D3FXSM) can be used with a flangeless mud-in trim (D3TXS--), with NCIC/NCOC housing type, or with a flangeless millwork trim (D3TMS--), with NCIM/NCOM housing type.  
<sup>4</sup> Use the flangeless millwork trims (D3TMS--), on wood and stone ceilings with thickness in the range of 0.625 in - 2.5 in (15.8 mm - 63.5 mm) with NCIM/NCOM housing type.  
<sup>5</sup> D3s are available for residential exterior applications only and must have a trim installed with a lens.  
<sup>6</sup> D3s installed outdoors must use housing type NCOC or NCOM.  
<sup>7</sup> Downlight is wet location rated when trim is installed with lens.  
<sup>8</sup> Ceiling installation cannot begin until the collar adapter is installed (see the Component Ordering Guide for details).  
<sup>9</sup> Millwork Trim Retainer supplied with Millwork Trim to ensure color match.

## COMPONENT ORDERING GUIDE

### Replacement Optics

Product Line      Accessory Type      Beam Angle

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

Product Line	Code
Universal Part - Recessed Downlight	<b>UN-D3</b>
Accessory Type	
Optic	<b>OP</b>
Beam Angle	
Spot (15°) Low Glare	<b>15L</b>
Flood (25°) Low Glare	<b>25L</b>
Wide Flood (40°) Low Glare	<b>40L</b>
Very Wide Flood (60°) Low Glare	<b>60L</b>
Spot (15°) High Output	<b>15H</b>
Flood (25°) High Output	<b>25H</b>
Wide Flood (40°) High Output	<b>40H</b>
Very Wide Flood (60°) High Output	<b>60H</b>

### Optics Accessories

Product Line      Accessory

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

Product Line	Code
Universal Part - Recessed Downlight	<b>UN-D3</b>
Accessory <sup>1,2,3</sup>	
Trim Lens, Square Bevel, Solite Flanged Trims Only	<b>TLSQFS</b>
Trim Lens, Square Bevel, Frost Flanged Trims Only	<b>TLSQFF</b>
Trim Lens, Square Mud-in, Solite Mud-in Trims Only	<b>TLSQXS</b>
Trim Lens, Square Mud-in, Frost Mud-in Trims Only	<b>TLSQXF</b>
Trim Lens, Pinhole, Solite	<b>TLPINS</b>
Trim Lens, Pinhole, Frost	<b>TLPINF</b>
Optic Accessory Solite	<b>OAS</b>
Optic Accessory Frost	<b>OAF</b>
Optic Accessory Hex Louver	<b>OAH</b>

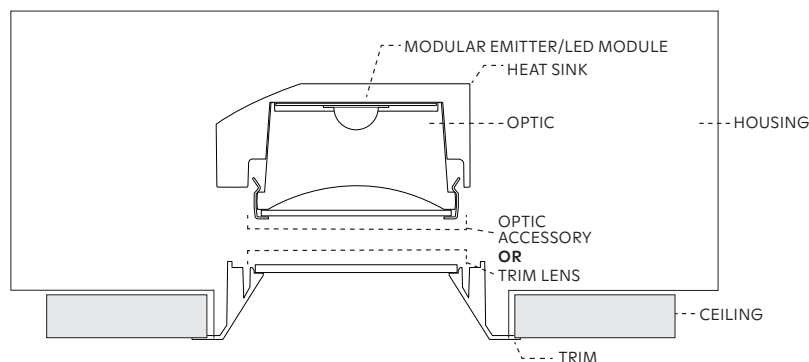
### Mounting & Installation Kits

Product Line      Accessory      Collar Adapters

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

Product Line	Code
Universal Part - Recessed Downlight	<b>UN-D3</b>
Accessory	
( 2 ) Butterfly brackets	<b>MA B</b>
( 2 ) 24 in (609 mm) Hanger bars	<b>MA N</b>
Collar Adapters <sup>4</sup>	
Collar Adapter, Square Flanged	<b>CTFS</b>
Collar Adapter, Square Flangeless Mud-in <sup>5</sup>	<b>CTXS</b>
Collar Adapter, Square Flangeless Millwork <sup>6</sup>	<b>CTMS</b>

## COMPONENT DIAGRAM



- <sup>1</sup> Downlight is wet location rated when trim is installed with lens.
- <sup>2</sup> Only one optional optical or trim accessory can be used at a time.
- <sup>3</sup> Downlights with outdoor housings require a trim installed with lens.
- <sup>4</sup> Ceiling installation cannot begin until collar adapter is installed.
- <sup>5</sup> Mud-In Trim Retainer supplied with Mud-In Collar Adapter.
- <sup>6</sup> Millwork Trim Retainer supplied with Millwork Trim to ensure color match.

## COMPONENT ORDERING GUIDE (cont.)

Rough-in  
Housing

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

Modular Emitter/  
LED Module

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

Power Supply

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

Rough-in Housing	Code
Housing, No Collar	<b>UN-D3ADXX</b>
Housing, Flanged Square Collar	<b>UN-D3ADFS</b>
Housing, Mud-In Square Collar	<b>UN-D3ADXS</b>
Housing, Millwork Square Collar	<b>UN-D3ADMS</b>

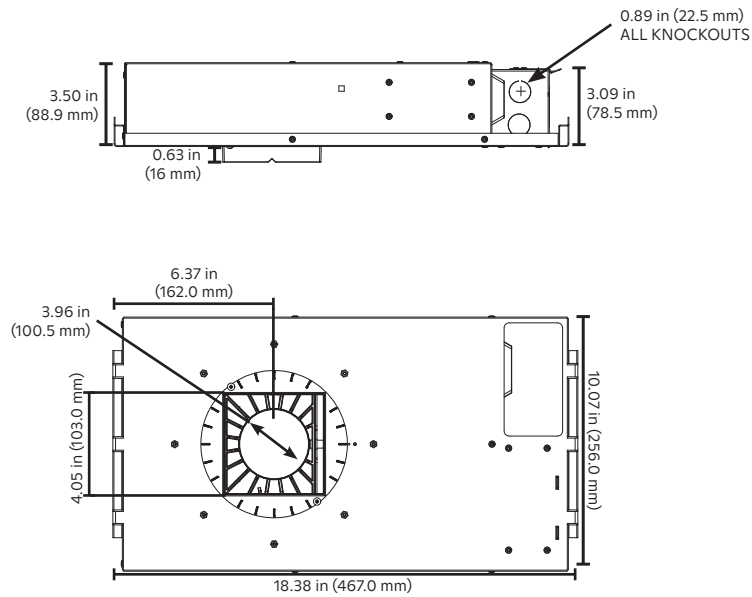
Modular Emitter/LED Module	Code
Standard (25°, 40°, 60°) Modular Emitter/LED Module	<b>UN-D3MEMTRST</b>
Spot (15°) Modular Emitter/ LED Module	<b>UN-D3MEMTRSP</b>

Power Supply	Code
Comm 9 W CCX 120 V~	<b>CM-D3PS09GT11</b>
Comm 9 W CCX 277 V~	<b>CM-D3PS09GT12</b>
Comm 13 W CCX 120 V~	<b>CM-D3PS13GT11</b>
Comm 13 W CCX 277 V~	<b>CM-D3PS13GT12</b>
Comm 18 W CCX 120 V~	<b>CM-D3PS18GT11</b>
Comm 13 W CCX 277 V~	<b>CM-D3PS18GT12</b>
Resi 9 W CCX 120 V~	<b>HW-D3PS09GT11</b>
Resi 9 W CCX 277 V~	<b>HW-D3PS09GT12</b>
Resi 13 W CCX 120 V~	<b>HW-D3PS13GT11</b>
Resi 13 W CCX 277 V~	<b>HW-D3PS13GT12</b>
Resi 18 W CCX 120 V~	<b>HW-D3PS18GT11</b>
Resi 13 W CCX 277 V~	<b>HW-D3PS18GT12</b>

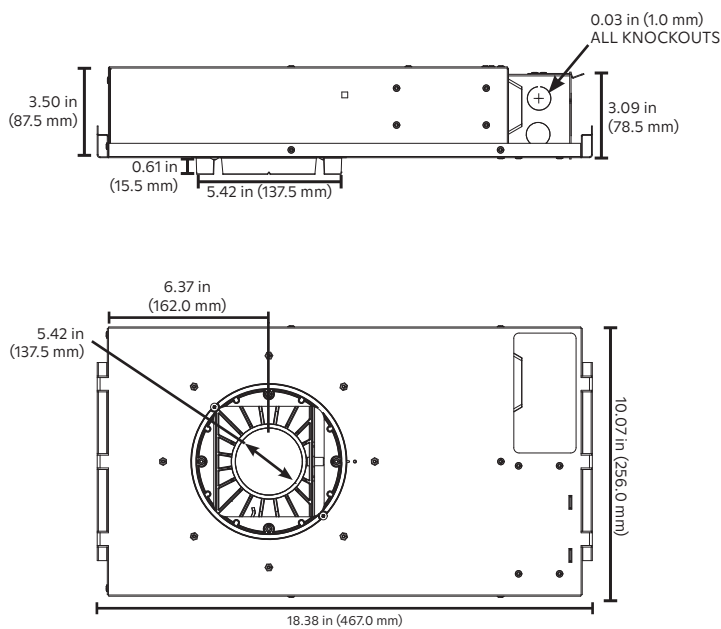
**NOTE:** See the Trim Ordering Guide for trim options and the Replacement Optic Section for optic options.

## PRODUCT DIMENSIONS

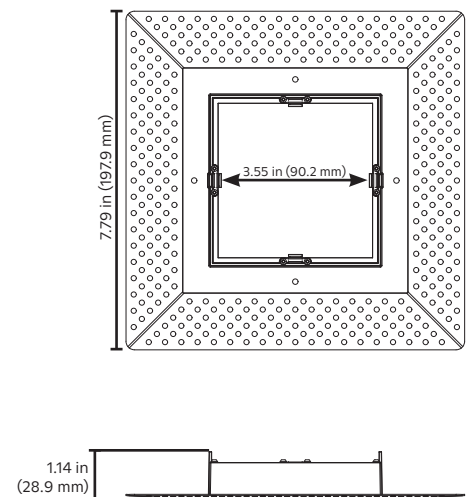
### Flanged Housing



### Flangeless Mud-in Housing

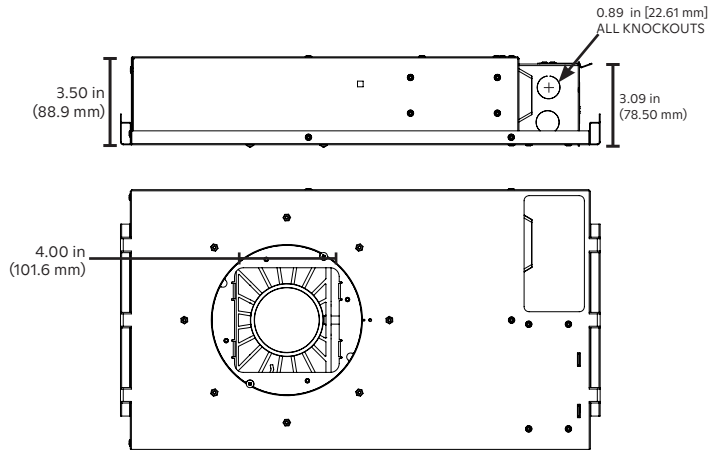


### Flangeless Mud-in Trim Retainer

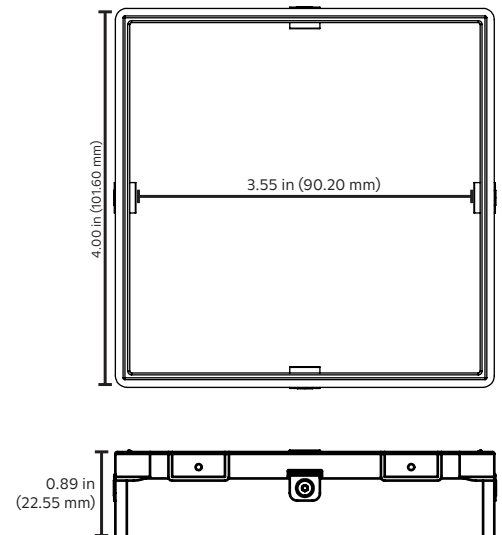


## PRODUCT DIMENSIONS

### Flangeless Millwork Housing

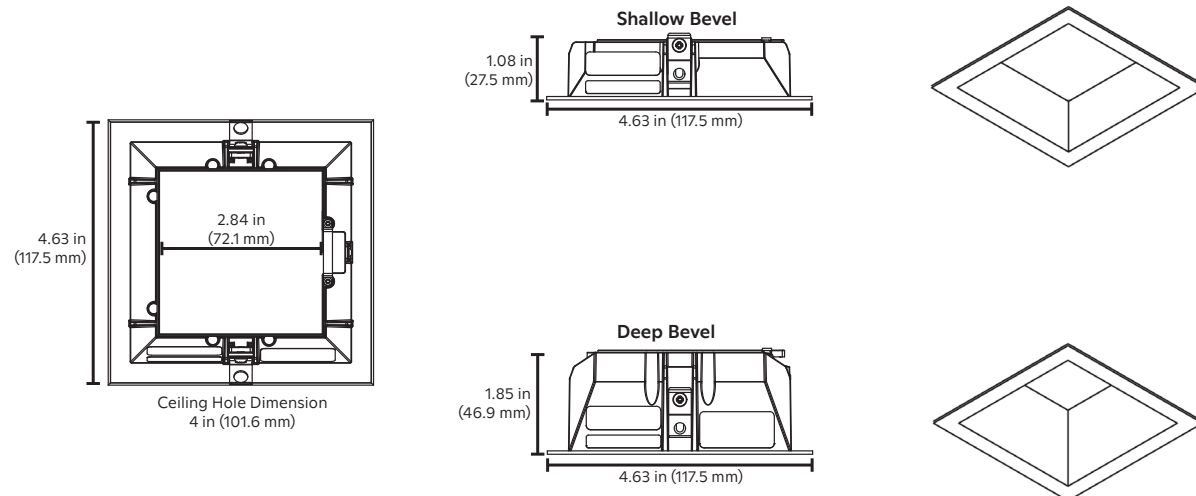


### Flangeless Millwork Trim Retainer

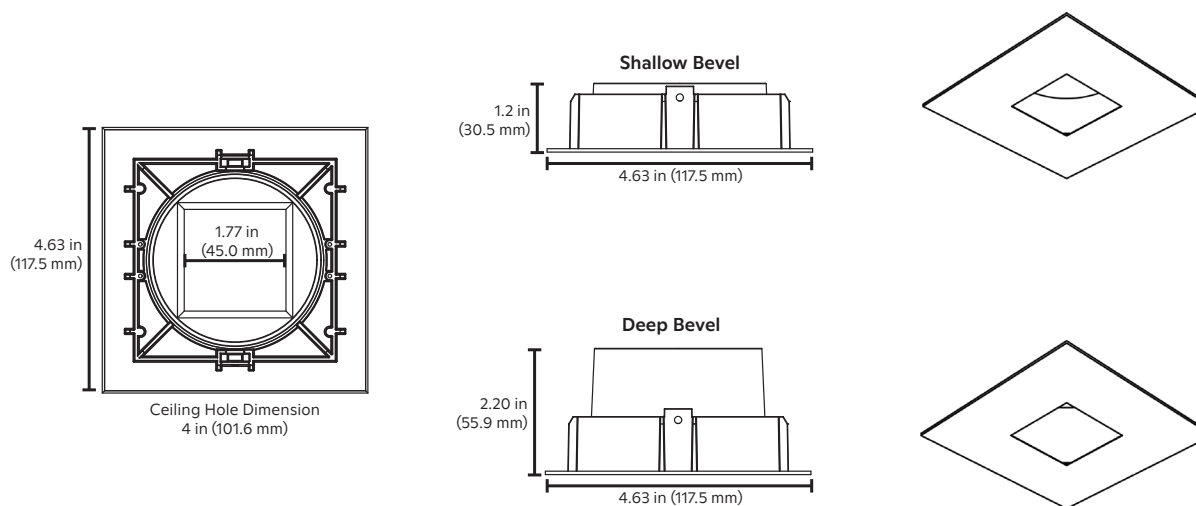


## PRODUCT DIMENSIONS

### Flanged Bevel Trim



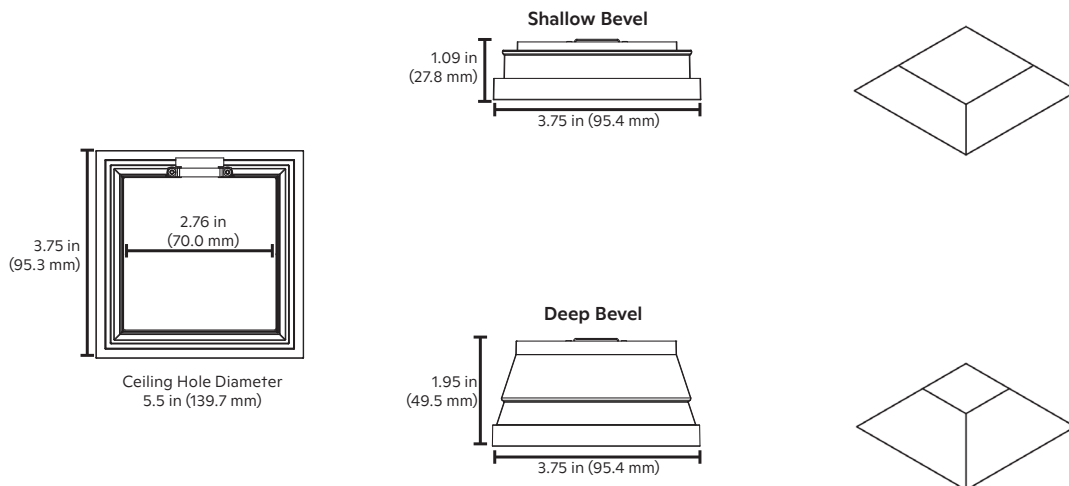
### Flanged Pinhole Trim



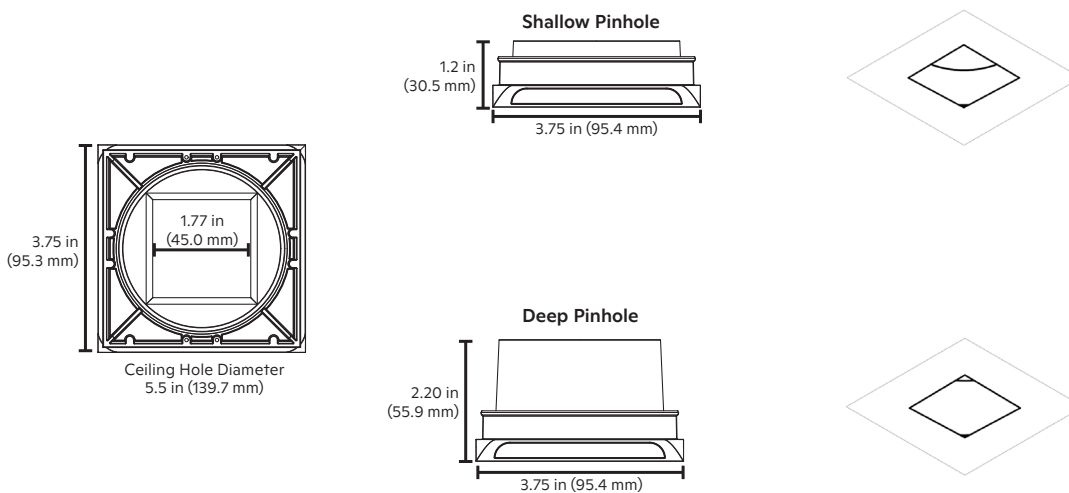


## PRODUCT DIMENSIONS

### Flangeless Bevel Trim



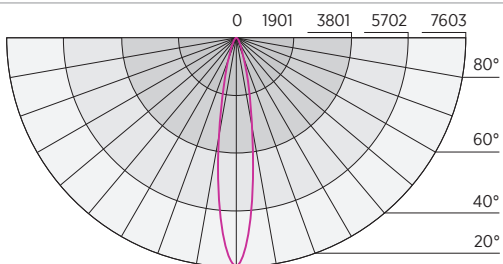
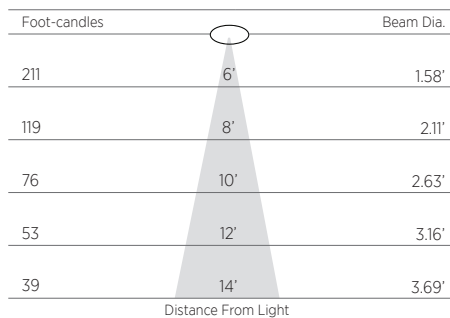
### Flangeless Pinhole Trim



## PHOTOMETRIC DATA<sup>1</sup>: 2700 - 5000K VALUES ONLY, DELIVERED LUMENS

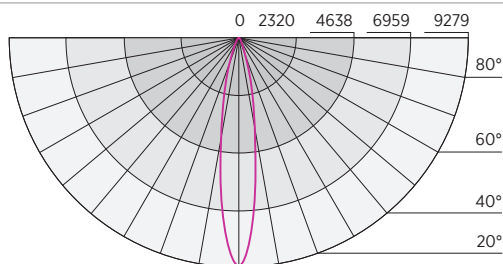
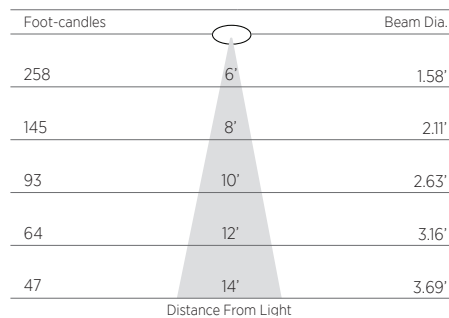
### Beam Angle: 15° Spot, Low Glare

Product Code	Wattage	Lumens	CBCP
D3FXSQ18BT15L	18 W	1092	7603



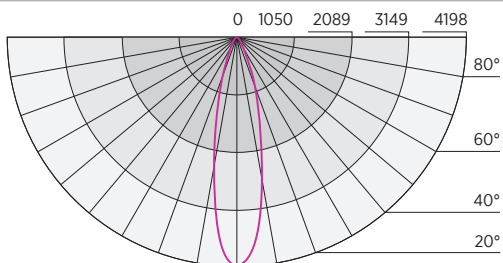
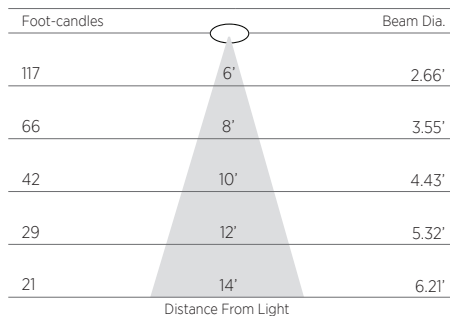
### Beam Angle: 15° Spot, High Output

Product Code	Wattage	Lumens	CBCP
D3FXSQ18BT15H	18 W	1148	9279



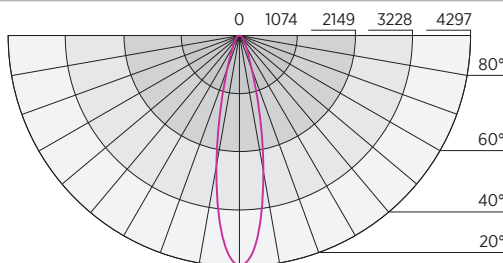
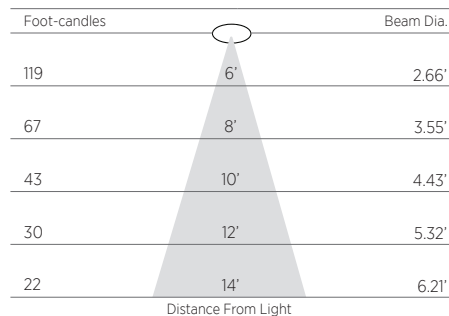
### Beam Angle: 25° Spot, Low Glare

Product Code	Wattage	Lumens	CBCP
D3FXSQ18BT25L	18 W	1046	4198



### Beam Angle: 25° Spot, High Output

Product Code	Wattage	Lumens	CBCP
D3FXSQ18BT25H	18 W	1142	4297

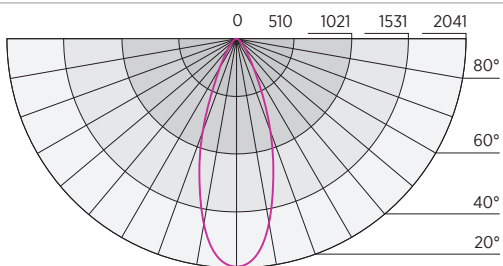
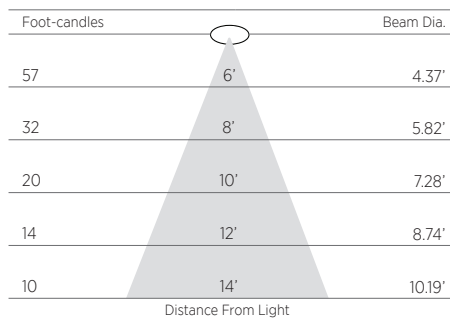


<sup>1</sup> All performance measurements taken with 1 in (25.4 mm) white trim, with light engine at nadir and 1 in (25.4 mm) regress, at 3000 K, 25 °C ambient, 100% power input, default vibrancy, unless otherwise stated.

## PHOTOMETRIC DATA<sup>1</sup>: 2700 - 5000K VALUES ONLY, DELIVERED LUMENS

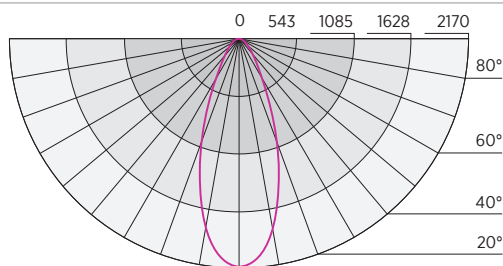
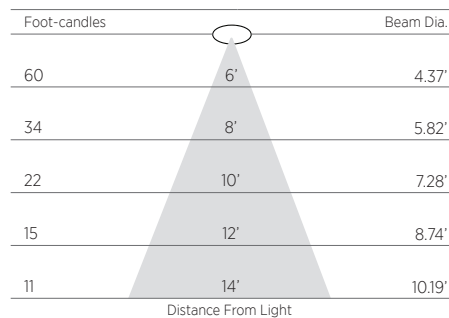
### Beam Angle: 40° Wide Flood, Low Glare

Product Code	Wattage	Lumens	CBCP
D3FXSQ18BT40L	18 W	955	2041



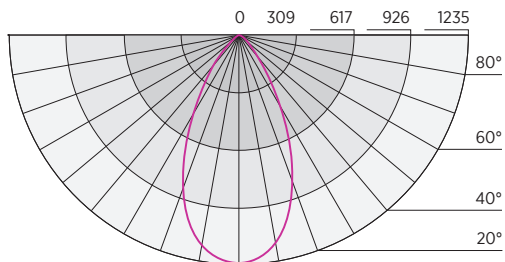
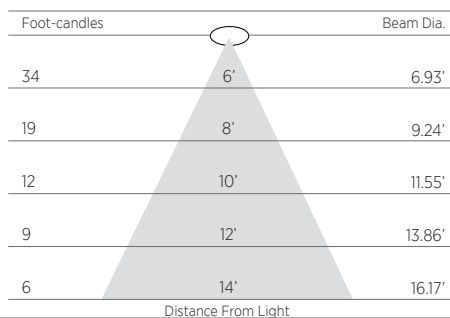
### Beam Angle: 40° Wide Flood, High Output

Product Code	Wattage	Lumens	CBCP
D3FXSQ18BT40H	18 W	1087	2170



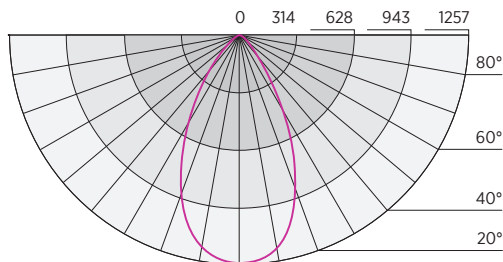
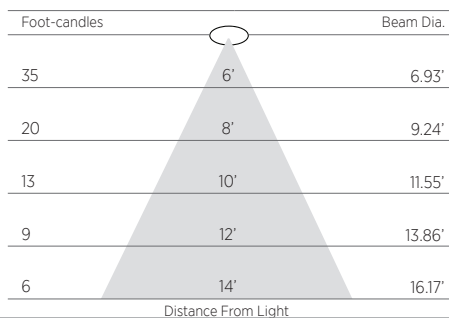
### Beam Angle: 60° Very Wide Flood, Low Glare

Product Code	Wattage	Lumens	CBCP
D3FXSQ18BT60L	18 W	941	1235



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

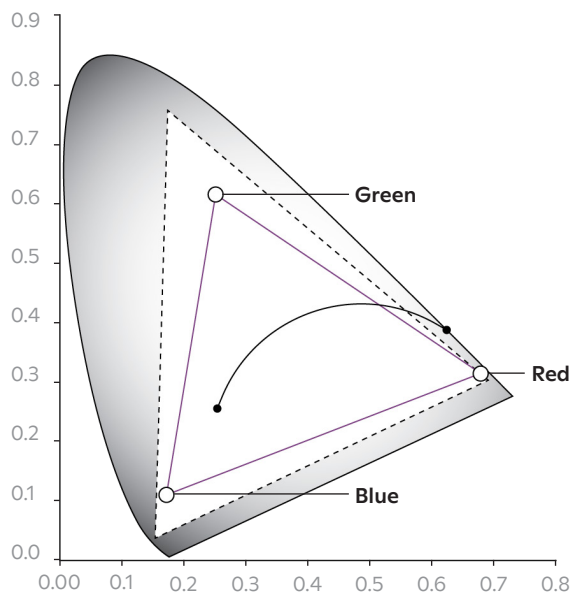
Product Code	Wattage	Lumens	CBCP
D3FXSQ18BT60H	18 W	1061	1257



<sup>1</sup> All performance measurements taken with 1 in (25.4 mm) white trim, with light engine at nadir and 1 in (25.4 mm) regress, at 3000 K, 25 °C ambient, 100% power input, default vibrancy, unless otherwise stated.

## WIDE GAMUT

### CIE 1931 Color Chart



Ketra's D3 LED Downlight can easily be commissioned into Lutron HomeWorks or Athena systems. The product can reproduce any color point with the triangle shaped gamut indicated in the chart to the left. With Ketra's Color Lock tool, the color point is maintained to an accuracy of one-step MacAdam Ellipse over the lifetime of the product and across operating temperature ranges.

- **Color Lock**—Color point is maintained to an accuracy of one-step MacAdam Ellipse over the lifetime of the product and across operating temperature range.
- - - - **Expanded Gamut**—Color calibration is relaxed such that each product produces the most saturated color it is capable of.

## D3 General Specifications

**Color Point Maintenance:** Employ closed loop optical and thermal feedback capable of maintaining color point accuracy at a one-step MacAdam ellipse over product lifetime.<sup>1</sup>

**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 both monochromatic and phosphor converted blue LED die.

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

**Warranty:** Ketra'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.
3. Changing intensity while maintaining full color spectrum or CCT.
4. Changing full color spectrum or CCT while maintaining intensity.

**Spectral Power Distribution Manipulation:** Light system capable of manipulating the Spectral Power Distribution (SPD) by automatically adjusting distributions of color intensity while maintaining the same Correlated Color Temperature (CCT).

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

**Color Point Range:** Single light source capable of producing 16.7 million colors and white from 1,400K to 10,000K Correlated Color Temperature (CCT).

<sup>1</sup> Color point maintenance not guaranteed while operating at ambient temperatures between -35 °C and 0 °C.