

**PRODUCT SPECIFICATIONS**

**LED Light Engine** Consistent fixture to fixture color consistency within a 2-step MacAdam ellipse • 2700K, 3000K, 3500K, or 4000K color temperatures are available with 80 CRI minimum • 2700K and 3000K are also available with 90 CRI minimum.

**Modular Optics** 50° cutoff to source and source image • Available with field interchangeable optics in 18° Spot, 24° Narrow Flood, 35° Flood, and 45° wide flood distributions • Additional distributions of 20°, 30°, 50° and 55° FWHM can be achieved with the use of the diffusing films and spot primary optic.

**Reflector** Die cast trim in white or black with black shield that prevents visibility into housing.

**Trims Style** Self Flanged and Flangeless styles (drywall only) are available

**LED Driver** Choice of two drivers to accommodate voltages from 120-277 volts AC at 50/60Hz • Compatible with most incandescent and electronic low voltage dimmers or 0-10V dimmers • For a list of compatible dimmers, refer to [ACULUX LED2-DIM](#) • Power Factor > 0.9 • Field replaceable from above or below ceiling.

**Life** Rated for 50,000 hrs at 70% lumen maintenance.

**Codes/Labels** UL and cUL listed for damp or wet locations • ENERGY STAR® Certified with all color temperatures with 80 CRI and spot, narrow flood, and flood optics • Union made.

**Remodel Installation** Fixture installs from below the ceiling and secured to remodel ring.

**Wiring** Includes (2) 1/2" knockouts equipped with pryout slots and are compatible with flexible electrical supply only • Supplied with quick connect electrical connectors.

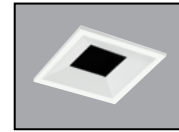
**Ceiling Thickness** 1/2" – 1 1/2" ceiling standard.

**Warranty** 5-year limited warranty. Complete warranty terms located at [www.acuitybrands.com/CustomerResources/Terms\\_and\\_conditions.aspx](http://www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx)

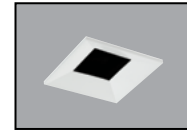


**2" LED RECESSED  
 DOWNLIGHT  
 800/1200 LUMEN  
 SQUARE DOWNLIGHT BEVEL  
 REMODEL**

**AX2SQ DR with 2SQDBV Trim**



Self-Flanged



Flangeless



AX2SQ DR

**NOTE:** Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25°C. Specifications subject to change without notice.

**ORDERING INFORMATION**

Example: AX2SQ DR 08LM 30K 80CRI 24D FPC 120 2SQDBV BD WHSF

Series / Housing Style	Lumens	CCT	CRI	Beam	Driver	Voltage <sup>1</sup>	Options
AX2SQ DR Remodel Downlight	08LM 800 Lumens	27K 2700K	80CRI	18D 18° beam	FPC Phase cut dimming, 5% dim	120	NLIGHT <sup>2</sup> nLight dimming pack controls
	12LM 1200 Lumens	30K 3000K	90CRI <sup>4</sup>	24D 24° beam	ZT 0-10V Dimming, 10% dim		
		35K 3500K		35D 35° beam		MVOLT (120-277)	
		40K 4000K		45D 45° beam			

Square Trim Style	Reflector Finish	Flange Style / Finish	Environment	Ceiling Installation
DOWNLIGHT	BD Black Diffuse	SELF FLANGED	WET Wet location	SELF-FLANGED
2SQDBV Bevel		WHFS White, flanged		Ceiling ≤ .75"
		BLFS Black, flanged		CTA2SQ/120 Ceiling 0.75" - 1.20"
		FLANGELESS <sup>3</sup>		CTA2SQ/150 Ceiling 1.20" - 1.5"
		WHFM Flangeless, White trim		FLANGELESS, GYPSUM
		BLFM Flangeless, Black trim		FMA2SQR Ceiling 0.5" to 1.5"

**Ordering Notes**


<sup>1</sup> MVOLT standard on ZT. 120 standard on FPC. <sup>4</sup> Available on 27K and 30K only.  
<sup>2</sup> NLIGHT compatible with ZT only.  
<sup>3</sup> Flangeless trims in drywall ceiling must be specified with Flangeless ceiling installation (FMA2SQR).

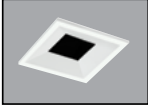
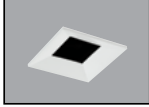
# 2" LED RECESSED DOWNLIGHT

## 800/1200 LUMEN

### SQUARE DOWNLIGHT BEVEL REMODEL AX2SQ DR with 2SQDBV Trim


#### TRIM SELECTION

**2SQDBV Square Downlight Bevel** 

**Self-Flanged** **Flangeless**

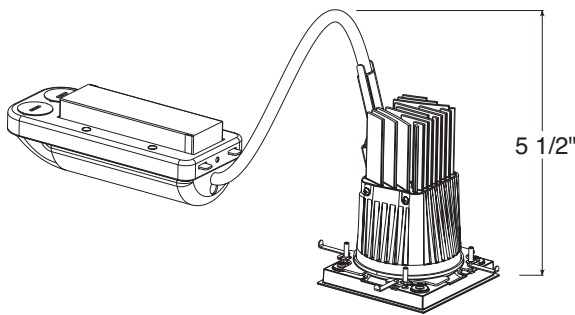
3.410" 2.875"

	<b>CCT/CRI:</b>	80CRI 27K, 30K, 35K, 40K
	<b>Optic:</b>	18D, 24D, 35D
	<b>Trim Finish:</b>	BD

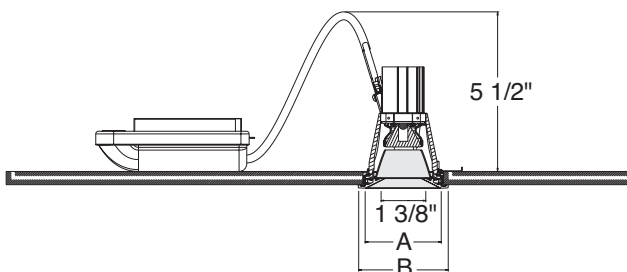
\* With WET option

#### DIMENSIONS

#### REMODEL



### AX2SQ DR



Trim Style	Cutout Size (A)	Flange Dimension (B)
Self Flanged Trims	3.044" x 3.044"	3.410"
Flangeless Trims (Drywall Ceiling)	3.044" x 3.044"	2.875"

#### ACCESSORIES

Cat. #	Description
<b>2AXOPT/18D</b>	18° Spot Optic
<b>2AXOPT/24D</b>	24° Narrow Flood Optic
<b>2AXOPT/35D</b>	35° Flood Optic
<b>2AXOPT/45D</b>	45° Wide Flood Optic
<b>AF2/10</b>	10° Film (Use with Spot Optic)
<b>AF2/20</b>	20° Film (Use with Spot Optic)
<b>AF2/40</b>	40° Film (Use with Spot Optic)
<b>AF2/50</b>	50° Film (Use with Spot Optic)
<b>AF2/90x1</b>	90°x1° Film (Use with Spot Optic)
<b>EMI20</b>	20W Emergency Lighting Inverter

To order, specify catalog number.

#### DIFFUSING FILMS

To achieve the desired beam angle (FWHM), specify the following primary LED optic on the luminaire and order the diffusing film from the table below

Desired FWHM	Primary Optic	Film
18°	18D	-
20°	18D	<b>AF2/10</b>
24°	24D	-
30°	18D	<b>AF2/20</b>
35°	35D	-
45°	45D	-
50°	18D	<b>AF2/40</b>
55°	18D	<b>AF2/50</b>
60°x20°	18D	<b>AF2/90x1</b>

#### ELECTRICAL DATA

Lumen Package	08LM			12LM		
	FPC	ZT		FPC	ZT	
Voltage	120	120	277	120	120	277
Input Power	10.1	9.6	9.6	14.8	14.8	14.6
Input Current	0.09	0.08	0.04	0.12	0.12	0.06
Frequency	50/60Hz	50/60Hz		50/60Hz	50/60Hz	
Power Factor	0.99	0.99	0.93	0.99	0.99	0.95

# 2" LED RECESSED DOWNLIGHT

## 800/1200 LUMEN

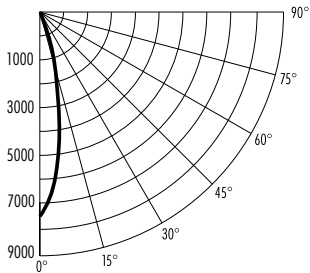
### SQUARE DOWNLIGHT BEVEL REMODEL AX2SQ DR with 2SQDBV Trim

#### PHOTOMETRICS

##### SPOT PHOTOMETRIC REPORT

Test Report #: PT02141005  
Catalog No: AX2SQ DR 12LM 30K  
80CRI 18D FPC 120  
2SQDBV BD

Luminaire Spacing Criterion: 0.34  
Luminaire LPW: 71



##### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	7542
5	6407
15	1398
25	154
35	12
45	1
55	0
65	0
75	0
85	0
90	0

##### AVERAGE INITIAL FOOTCANDLES

Multiple Units (Square Array, 60'x60' room)  
Ceiling 80% Wall 50% Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	75	69	65
5.0'	48	44	42
6.0'	33	31	29
7.0'	27	25	23
8.0'	21	20	19
9.0'	16	15	14
10.0'	12	11	10

##### INITIAL FOOTCANDLES

(One Unit, 14.8W, 19.0° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
6	209.5	2.0'
8	117.8	2.7'
10	75.4	3.3'
12	52.4	4.0'

##### ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30°	1038	98.6
0-40°	1051	99.8
0-60°	1052	100.0
0-90°	1053	100.0

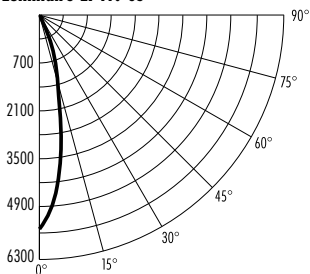
##### LUMINANCE (Average cd/m²)

Degrees	Average Luminance
45	1403
55	576
65	0
75	852
85	0

##### NARROW FLOOD PHOTOMETRIC REPORT

Test Report #: PT02141009  
Catalog No: AX2SQ DR 12LM 30K  
80CRI 24D FPC 120  
2SQDBV BD

Luminaire Spacing Criterion: 0.36  
Luminaire LPW: 65



##### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	5571
5	4774
15	1436
25	216
35	21
45	3
55	0
65	0
75	0
85	0
90	0

##### AVERAGE INITIAL FOOTCANDLES

Multiple Units (Square Array, 60'x60' room)  
Ceiling 80% Wall 50% Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	68	62	58
5.0'	43	40	37
6.0'	30	28	26
7.0'	24	22	21
8.0'	19	18	17
9.0'	15	14	13
10.0'	11	10	9

##### INITIAL FOOTCANDLES

(One Unit, 14.8W, 21.3° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
6	154.8	2.3'
8	87.0	3.0'
10	55.7	3.8'
12	38.7	4.5'

##### ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30°	937	97.6
0-40°	956	99.6
0-60°	959	99.9
0-90°	960	100.0

##### LUMINANCE (Average cd/m²)

Degrees	Average Luminance
45	3429
55	769
65	1043
75	2129
85	0

Fixtures tested to IES recommended standard for solid state lighting per LM-79-08. Photometric performance on a single unit represents a baseline of performance for the fixture. Results may vary in the field. Photometry is at 3000K CCT.

# 2" LED RECESSED DOWNLIGHT 800/1200 LUMEN

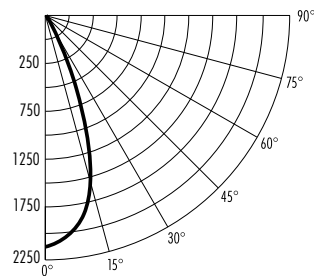
SQUARE DOWNLIGHT BEVEL REMODEL

## AX2SQ DR with 2SQDBV Trim (continued)

### PHOTOMETRICS

#### FLOOD PHOTOMETRIC REPORT

Test Report #: PT02141101  
Catalog No: AX2SQ DR 12LM 30K  
80CRI 35D FPC 120  
2SQDBV BD  
Luminaire Spacing Criterion: 0.68  
Luminaire LPW: 62



#### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees	Vertical
0	2118
5	2101
15	1580
25	482
35	52
45	2
55	0
65	0
75	0
85	0
90	0

#### AVERAGE INITIAL FOOTCANDLES

Multiple Units (Square Array, 60'x60' room)  
Ceiling 80% Wall 50% Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	65	58	53
5.0'	41	37	34
6.0'	29	26	24
7.0'	23	21	19
8.0'	18	17	15
9.0'	14	13	12
10.0'	10	9	8

#### INITIAL FOOTCANDLES (One Unit, 14.8W, 39.8° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
6	58.8	4.3'
8	33.1	5.8'
10	21.2	7.2'
12	14.7	8.7'

#### ZONAL LUMEN SUMMARY

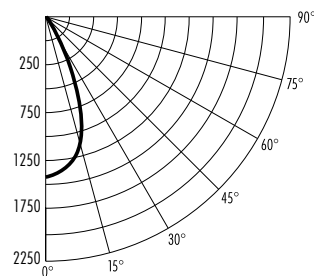
Zone	Lumens	%Fixture
0-30°	873	94.7
0-40°	918	99.5
0-60°	922	99.9
0-90°	923	100.0

#### LUMINANCE (Average cd/m²)

Degrees	Average Luminance
45	2805
55	769
65	1043
75	852
85	0

#### WIDE FLOOD PHOTOMETRIC REPORT

Test Report #: PT02141105  
Catalog No: AX2SQ DR 12LM 30K  
80CRI 45D FPC 120  
2SQDBV BD  
Luminaire Spacing Criterion: 0.74  
Luminaire LPW: 51



#### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees	Vertical
0	1424
5	1386
15	1156
25	388
35	91
45	2
55	1
65	1
75	1
85	0
90	0

#### AVERAGE INITIAL FOOTCANDLES

Multiple Units (Square Array, 60'x60' room)  
Ceiling 80% Wall 50% Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	52	47	42
5.0'	34	30	27
6.0'	23	21	19
7.0'	19	17	15
8.0'	15	13	12
9.0'	11	10	9
10.0'	8	7	7

#### INITIAL FOOTCANDLES (One Unit, 14.8W, 42.5° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
6	39.6	4.7'
8	22.3	6.2'
10	14.2	7.8'
12	9.9	9.3'

#### ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30°	674	89.9
0-40°	739	98.7
0-60°	748	99.8
0-90°	749	100.0

#### LUMINANCE (Average cd/m²)

Degrees	Average Luminance
45	2338
55	1345
65	1825
75	2555
85	1264

Fixtures tested to IES recommended standard for solid state lighting per LM-79-08. Photometric performance on a single unit represents a baseline of performance for the fixture. Results may vary in the field. Photometry is at 3000K CCT.

# 2" LED RECESSED DOWNLIGHT 800/1200 LUMEN

SQUARE DOWNLIGHT BEVEL REMODEL

## AX2SQ DR with 2SQDBV Trim with WET option

### PHOTOMETRICS

#### SPOT

#### PHOTOMETRIC REPORT

Test Report #: PTO2141006

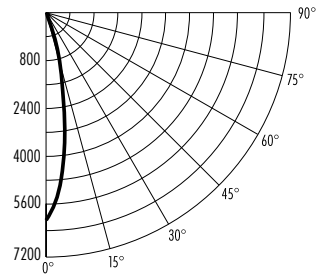
Catalog No: AX2SQ DR 12LM 30K

80CRI 18D FPC 120

2SQDBV BD WET

Luminaire Spacing Criterion: 0.34

Luminaire LPW: 64



#### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees	Candelas
Vertical	0°
0	6297
5	5305
15	1314
25	173
35	17
45	3
55	1
65	1
75	1
85	0
90	0

#### AVERAGE INITIAL FOOTCANDLES

Multiple Units (Square Array, 60'x60' room)  
Ceiling 80% Wall 50% Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	67	62	58
5.0'	43	40	37
6.0'	30	28	26
7.0'	24	22	21
8.0'	19	18	17
9.0'	15	14	13
10.0'	11	10	9

#### INITIAL FOOTCANDLES

(One Unit, 14.8W, 19.6° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
6	174.9	2.1'
8	98.4	2.8'
10	63.0	3.5'
12	43.7	4.1'

#### ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30°	926	97.7
0-40°	942	99.4
0-60°	947	99.8
0-90°	948	100.0

#### LUMINANCE (Average cd/m²)

Degrees	Average Luminance
45	4208
55	2113
65	1565
75	2129
85	1264

#### NARROW FLOOD

#### PHOTOMETRIC REPORT

Test Report #: PTO2141010

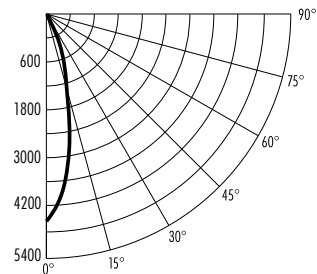
Catalog No: AX2SQ DR 12LM 30K

80CRI 24D FPC 120

2SQDBV BD WET

Luminaire Spacing Criterion: 0.38

Luminaire LPW: 58



#### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees	Candelas
Vertical	0°
0	4636
5	3997
15	1317
25	219
35	25
45	4
55	1
65	1
75	1
85	0
90	0

#### AVERAGE INITIAL FOOTCANDLES

Multiple Units (Square Array, 60'x60' room)  
Ceiling 80% Wall 50% Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	61	56	52
5.0'	39	36	33
6.0'	27	25	23
7.0'	22	20	19
8.0'	17	16	15
9.0'	13	12	11
10.0'	10	9	8

#### INITIAL FOOTCANDLES

(One Unit, 14.8W, 22.0° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
6	128.8	2.3'
8	72.4	3.1'
10	46.4	3.9'
12	32.2	4.7'

#### ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30°	831	96.6
0-40°	853	99.2
0-60°	858	99.8
0-90°	860	100.0

#### LUMINANCE (Average cd/m²)

Degrees	Average Luminance
45	5143
55	2306
65	2086
75	2555
85	0

Fixtures tested to IES recommended standard for solid state lighting per LM-79-08. Photometric performance on a single unit represents a baseline of performance for the fixture. Results may vary in the field. Photometry is at 3000K CCT.

# 2" LED RECESSED DOWNLIGHT 800/1200 LUMEN

## SQUARE DOWNLIGHT BEVEL REMODEL AX2SQ DR with 2SQDBV Trim

### PHOTOMETRICS

#### FLOOD

#### PHOTOMETRIC REPORT

Test Report #: PT02141102

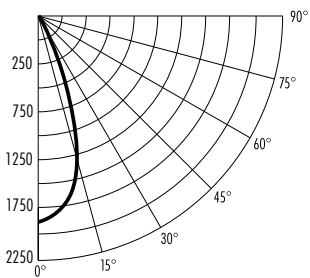
Catalog No: AX2SQ DR 12LM 30K

80CRI 35D FPC 120

2SQDBV BD WET

Luminaire Spacing Criterion: 0.66

Luminaire LPW: 56



#### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	1879
5	1843
15	1369
25	456
35	59
45	5
55	1
65	1
75	0
85	0
90	0

#### AVERAGE INITIAL FOOTCANDLES

Multiple Units (Square Array, 60'x60' room)

Ceiling 80% Wall 50% Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	58	52	48
5.0'	37	33	30
6.0'	26	23	21
7.0'	21	19	17
8.0'	16	15	14
9.0'	13	11	10
10.0'	9	8	8

#### INITIAL FOOTCANDLES

(One Unit, 14.8W, 39.3° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
6	52.2	4.3'
8	29.4	5.7'
10	18.8	7.1'
12	13.0	8.6'

#### ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30°	768	92.9
0-40°	817	98.9
0-60°	825	99.8
0-90°	827	100.0

#### LUMINANCE (Average cd/m²)

Degrees	Average Luminance
45	6546
55	2306
65	1825
75	1703
85	0

#### WIDE FLOOD

#### PHOTOMETRIC REPORT

Test Report #: PT02141106

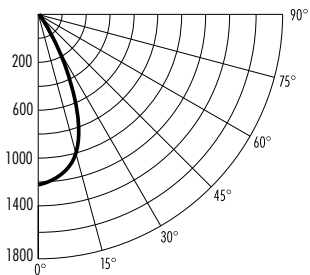
Catalog No: AX2SQ DR 12LM 30K

80CRI 35D FPC 120

2SQDBV BD WET

Luminaire Spacing Criterion: 0.72

Luminaire LPW: 45



#### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	1240
5	1213
15	1002
25	369
35	82
45	7
55	2
65	1
75	1
85	0
90	0

#### AVERAGE INITIAL FOOTCANDLES

Multiple Units (Square Array, 60'x60' room)

Ceiling 80% Wall 50% Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	46	42	37
5.0'	30	27	24
6.0'	21	18	17
7.0'	17	15	13
8.0'	13	12	11
9.0'	10	9	8
10.0'	7	7	6

#### INITIAL FOOTCANDLES

(One Unit, 14.8W, 42.2° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
6	34.4	4.6'
8	19.4	6.2'
10	12.4	7.7'
12	8.6	9.3'

#### ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30°	587	88.4
0-40°	649	97.7
0-60°	662	99.7
0-90°	664	100.0

#### LUMINANCE (Average cd/m²)

Degrees	Average Luminance
45	8416
55	2882
65	2608
75	2555
85	0

Fixtures tested to IES recommended standard for solid state lighting per LM-79-08. Photometric performance on a single unit represents a baseline of performance for the fixture. Results may vary in the field. Photometry is at 3000K CCT.