

**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 reflector in haze, black haze, wheat haze, or white finish provides 50° cut-off • Black shield 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 [ACLXLED2-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 • Union made.

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

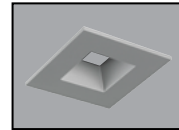
**Wiring** Includes (2) ½" knockouts equipped with pryout slots and are compatible with flexible electrical supply only • Supplied with quick connect electrical connectors.

**Ceiling Thickness** ½" – 1½" ceiling standard.

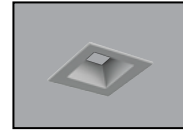
**Warranty** 5-year limited warranty. Complete warranty terms located at [www.acuitybrands.com/CustomerResources/Terms\\_and\\_conditions.aspx](http://www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx)



**2" LED RECESSED DOWNLIGHT**  
**800/1200 LUMEN**  
 SQUARE DOWNLIGHT REFLECTOR  
 REMODEL  
**AX2SQ DR with 2SQD 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 2SQD W SF

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

TRIM OPTIONS	Square Trim Style	Reflector Finish	Flange Style / Finish	Environment	Ceiling Installation
	DOWNLIGHT 2SQD Reflector	BD Black Diffuse CD Clear Diffuse W White Paint WTD Wheat Diffuse	SELF FLANGED SF Flange is same finish as reflector WHFS White, flanged FLANGELESS <sup>3</sup> FM Flangeless	WET Wet location	SELF-FLANGED Ceiling ≤ .75" CTA25Q/120 Ceiling 0.75" - 1.20" CTA25Q/150 Ceiling 1.20" - 1.5" FLANGELESS, GYPSUM FMA25QR 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 (FMA25QR).

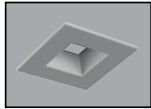
# 2" LED RECESSED DOWNLIGHT

## 800/1200 LUMEN

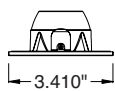
### SQUARE DOWNLIGHT REFLECTOR REMODEL AX2SQ DR with 2SQD Trim

#### TRIM SELECTION

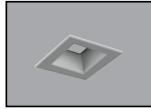
##### 2SQD Square Downlight Reflector



Self-Flanged



3.410"



Flangeless



2.875"

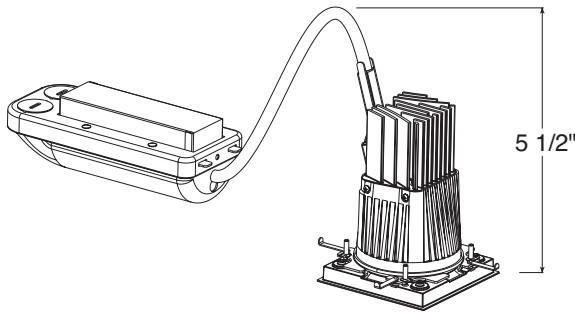


ENERGY STAR	<b>CCT/CRI:</b>	80CRI 27K, 30K, 35K, 40K
	<b>Optic:</b>	18D, 24D, 35D, 45D
	<b>Trim Finish:</b>	CD, WTD, BD, W

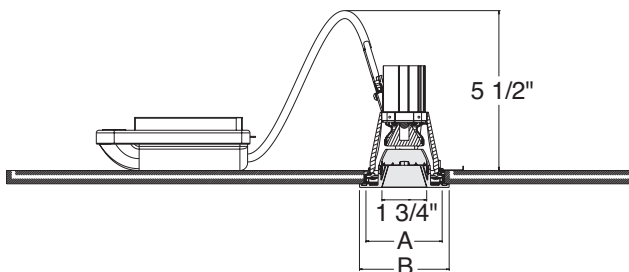
\* With WET option

#### 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

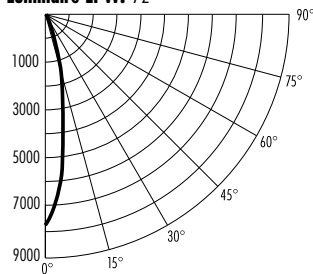
## SQUARE DOWNLIGHT REFLECTOR REMODEL AX2SQ DR with 2SQD Trim

### PHOTOMETRICS

#### SPOT PHOTOMETRIC REPORT

Test Report #: PT02141003  
Catalog No: AX2SQ DR 12LM 30K  
80CRI 18D FPC 120  
2SQD CD

Luminaire Spacing Criterion: 0.34  
Luminaire LPW: 72



#### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees	Vertical	0°
0	7294	
5	6251	
15	1501	
25	167	
35	10	
45	1	
55	1	
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'	76	70	66
5.0'	49	45	42
6.0'	34	31	29
7.0'	27	25	24
8.0'	22	20	19
9.0'	17	15	14
10.0'	12	11	11

#### INITIAL FOOTCANDLES (One Unit, 14.8W, 19.6° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
6	202.6	2.1'
8	114.0	2.8'
10	72.9	3.5'
12	50.7	4.1'

#### ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30°	1056	98.7
0-40°	1069	99.8
0-60°	1070	100.0
0-90°	1070	100.0

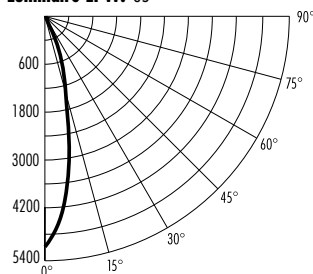
#### LUMINANCE (Average cd/m²)

Degrees	Average Luminance
45	838
55	827
65	140
75	687
85	0

#### NARROW FLOOD PHOTOMETRIC REPORT

Test Report #: PT02141007  
Catalog No: AX2SQ DR 12LM 30K  
80CRI 24D FPC 120  
2SQD CD

Luminaire Spacing Criterion: 0.38  
Luminaire LPW: 65



#### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees	Vertical	0°
0	5339	
5	4560	
15	1542	
25	228	
35	18	
45	2	
55	1	
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'	66	63	59
5.0'	44	40	37
6.0'	30	28	26
7.0'	25	23	21
8.0'	19	18	17
9.0'	15	14	13
10.0'	11	10	9

#### INITIAL FOOTCANDLES (One Unit, 14.8W, 21.9° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
6	143.3	2.3'
8	83.4	3.1'
10	53.4	3.9'
12	37.1	4.6'

#### ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30°	944	97.8
0-40°	962	99.6
0-60°	965	99.9
0-90°	966	100.0

#### LUMINANCE (Average cd/m²)

Degrees	Average Luminance
45	1257
55	827
65	561
75	229
85	680

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 REFLECTOR REMODEL AX2SQ DR with 2SQD Trim (continued)

### PHOTOMETRICS

#### FLOOD

#### PHOTOMETRIC REPORT

Test Report #: PT02141011

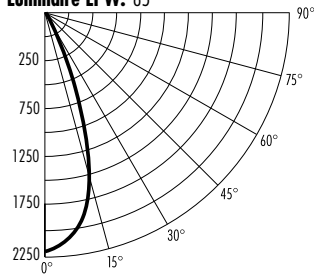
Catalog No: AX2SQ DR 12LM 30K

80CRI 35D FPC 120

2SQD CD

Luminaire Spacing Criterion: 0.66

Luminaire LPW: 65



#### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees	Candelas
Vertical	0°
0	2244
5	2228
15	1641
25	507
35	46
45	2
55	1
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	61	56
5.0'	43	39	36
6.0'	30	27	25
7.0'	24	22	20
8.0'	19	17	16
9.0'	15	13	12
10.0'	11	10	9

#### INITIAL FOOTCANDLES

(One Unit, 14.8W, 39.6° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
6	62.3	4.3'
8	35.1	5.8'
10	22.4	7.2'
12	15.6	8.6'

#### ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30°	919	95.1
0-40°	962	99.5
0-60°	965	99.9
0-90°	966	100.0

#### LUMINANCE (Average cd/m<sup>2</sup>)

Degrees	Average Luminance
45	1509
55	1033
65	561
75	229
85	680

#### WIDE FLOOD

#### PHOTOMETRIC REPORT

Test Report #: PT02141103

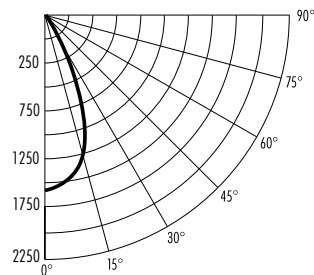
Catalog No: AX2SQ DR 12LM 30K

80CRI 45D FPC 120

2SQD CD

Luminaire Spacing Criterion: 0.74

Luminaire LPW: 55



#### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees	Candelas
Vertical	0°
0	1613
5	1586
15	1257
25	410
35	78
45	4
55	2
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'	57	51	47
5.0'	37	33	30
6.0'	26	23	21
7.0'	21	18	17
8.0'	16	15	13
9.0'	13	11	10
10.0'	9	8	7

#### INITIAL FOOTCANDLES

(One Unit, 14.8W, 42.2° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
6	44.8	4.6'
8	25.2	6.2'
10	16.1	7.7'
12	11.2	9.3'

#### ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30°	752	91.7
0-40°	812	99.0
0-60°	819	99.8
0-90°	820	100.0

#### LUMINANCE (Average cd/m<sup>2</sup>)

Degrees	Average Luminance
45	2682
55	1963
65	1122
75	687
85	680

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 REFLECTOR REMODEL

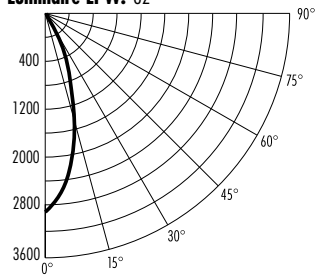
## AX2SQ DR with 2SQD Trim with WET option

### PHOTOMETRICS

#### SPOT PHOTOMETRIC REPORT

Test Report #: PT02141004  
Catalog No: AX2SQ DR 12LM 30K  
80CRI 18D FPC 120  
2SQD CD WET

Luminaire Spacing Criterion: 0.50  
Luminaire LPW: 62



#### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	2895
5	2648
15	1368
25	398
35	84
45	19
55	5
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'	64	58	53
5.0'	41	37	34
6.0'	29	26	23
7.0'	23	21	19
8.0'	18	16	15
9.0'	14	13	11
10.0'	10	9	8

#### INITIAL FOOTCANDLES

(One Unit, 14.8W, 29.4° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
6	80.4	3.1'
8	45.2	4.2'
10	29.0	5.2'
12	20.1	6.3'

#### ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30°	824	89.8
0-40°	892	97.2
0-60°	916	99.8
0-90°	918	100.0

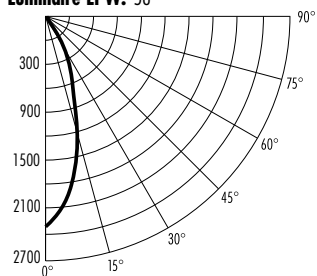
#### LUMINANCE (Average cd/m<sup>2</sup>)

Degrees	Average Luminance
45	12656
55	3926
65	1262
75	458
85	680

#### NARROW FLOOD PHOTOMETRIC REPORT

Test Report #: PT02141008  
Catalog No: AX2SQ DR 12LM 30K  
80CRI 24D FPC 120  
2SQD CD WET

Luminaire Spacing Criterion: 0.52  
Luminaire LPW: 56



#### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	2347
5	2175
15	1218
25	398
35	90
45	20
55	5
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	47
5.0'	37	33	30
6.0'	26	23	21
7.0'	21	19	17
8.0'	17	15	13
9.0'	13	11	10
10.0'	9	8	8

#### INITIAL FOOTCANDLES

(One Unit, 14.8W, 31.6° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
6	65.2	3.4'
8	36.7	4.5'
10	23.5	5.7'
12	16.3	6.8'

#### ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30°	734	88.4
0-40°	804	96.8
0-60°	829	99.8
0-90°	831	100.0

#### LUMINANCE (Average cd/m<sup>2</sup>)

Degrees	Average Luminance
45	13494
55	3823
65	1122
75	458
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 REFLECTOR REMODEL

## AX2SQ DR with 2SQD Trim with WET option (continued)

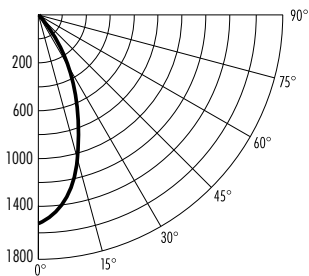
### PHOTOMETRICS

#### FLOOD PHOTOMETRIC REPORT

Test Report #: PTO2141012  
Catalog No: AX2SQ DR 12LM 30K  
80CRI 35D FPC 120  
2SQD CD WET

Luminaire Spacing Criterion: 0.66

Luminaire LPW: 56



#### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees	Vertical	0°
0	1556	
5	1498	
15	1078	
25	512	
35	143	
45	25	
55	4	
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	51	45
5.0'	37	33	29
6.0'	26	23	20
7.0'	21	18	16
8.0'	16	15	13
9.0'	13	11	10
10.0'	9	8	7

#### INITIAL FOOTCANDLES

(One Unit, 14.8W, 41.0° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
6	43.2	4.5'
8	24.3	6.0'
10	15.6	7.5'
12	10.8	9.0'

#### ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30°	679	82.4
0-40°	787	95.5
0-60°	822	99.8
0-90°	824	100.0

#### LUMINANCE (Average cd/m<sup>2</sup>)

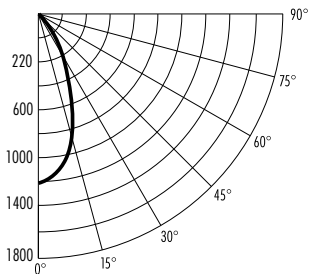
Degrees	Average Luminance
45	17014
55	3410
65	1402
75	458
85	0

#### WIDE FLOOD PHOTOMETRIC REPORT

Test Report #: PTO2141104  
Catalog No: AX2SQ DR 12LM 30K  
80CRI 45D FPC 120  
2SQD CD WET

Luminaire Spacing Criterion: 0.70

Luminaire LPW: 47



#### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees	Vertical	0°
0	1213	
5	1180	
15	897	
25	434	
35	120	
45	19	
55	5	
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'	48	43	38
5.0'	31	27	24
6.0'	21	19	17
7.0'	17	15	14
8.0'	14	12	11
9.0'	11	9	8
10.0'	8	7	6

#### INITIAL FOOTCANDLES

(One Unit, 14.8W, 43.0° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
6	33.7	4.7'
8	19.0	6.3'
10	12.1	7.9'
12	8.4	9.5'

#### ZONAL LUMEN SUMMARY

Zone	Lumens	%Fixture
0-30°	570	81.9
0-40°	664	95.4
0-60°	694	99.7
0-90°	696	100.0

#### LUMINANCE (Average cd/m<sup>2</sup>)

Degrees	Average Luminance
45	13075
55	4340
65	1683
75	458
85	680

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.