# **Downlighting**

# Alkco 4" Specialty Downlight

ASD4 Round Sealed Downlight



Alkco's 4" Round Sealed Specialty Downlight provides a solution for complex environments such as healthcare, cleanroom and food processing applications where keeping a sterile environment is essential.

Standard luminaire: Complete luminaire = Frame + Engine + Trim + Accessories (optional)

Buy American Act of 1933 (BAA)\*\* Compliant luminaire\*: Complete luminaire = Frame-BAC + Engine-BAC + Trim-BAC

\* BAA compliance requires that BAC option be selected for each of frame, engine, and trim. Frame and engine will be ordered/shipped together; trim will be ordered/shipped separately. Accessories (optional) are not currently BAA-compliant.

Project:		
Location:		
Cat.No:		
Type:		
Line ID:	Qty:	
Nichola		

Order logic: Static White

ALKC

Frame Example: ASDFRBAC

Family	Size	Shape	Voltage/Options
ASDF	4	R	
ASDF Specialty downlight frame	4 4"	R Round	EM6¹ Emergency, 6W
			LC <sup>2</sup> Chicago Plenum BAC <sup>3</sup> Meets the requisites of the Buy American Act of 1933 (BAA)

Engine Example: ASDE4025930MZ10U

Family		Size	Lum	nens	CRI/	ССТ	Bea	am	Dimm	ning	Opti	ons	Voltage	Optio	ns
ASDE		40													
	Specialty downlight	<b>40</b> 4" Open	10 15	1000 lm 1500 lm	927	90CRI 2700K	N M	Narrow Medium	Z10 <sup>4</sup>	0-10 V 1% (up to 3000lm)	 D20	None Dim to Off	U 120/277V 3 347V (Z10 only)	BAC <sup>3</sup>	Meets the requisites
	engine		20 25 30	2000lm 2500lm 3000lm	330	90CRI 3000K 90CRI 3500K	W	Wide	LO1 L1	Lutron PEQO EcoSystem 0.1% (up to 2000lm) Lutron LDE1 EcoSystem (up to 3000lm)			U 120/277V		of the Buy American Act of 1933 (BAA)
					940	90CRI 4000K			RA⁵	Integral Interact Pro RF sensor (enables wireless connected lighting)	LIN⁵	Linear	U 120/277V		
									D	DALI 0.1% (up to 3000lm)	 LIN⁵	None Linear	U 120/277V		
									SOL	EldoLED Solo 0-10 V 0.1% (up to 3000lm)	 LIN <sup>5</sup>		U 120/277V		
									DMX	Digital Multiplexing with RDM 0.1% (up to 3000lm)	SQR	Square			

Trim Example: ASDT4ROCLPBAC

Family ASD	г	Siz	e	Aperture R	St	:yle	Ве	am	Finis	sh	Flan	ge	Option	s
ASDT	Specialty downlight trim	4	4"	R Round	0	Open	-	Round		Specular clear Comfort clear Comfort clear diffuse	WH P	Matte White Polished	BAC <sup>3</sup>	Meets the requisites of the Buy American Act of 1933 (BAA)
									WH	Matte White	WH	Matte White		

Accessories (Not currently BAA-compliant) learn more on page 3

Interact Ready System Bridge Accessory (refer to Philips System Bridge Accessory spec sheet for options and details)

CAEM6 Field-installable Bodine BSL6 6W battery pack with self-test/self-diagnostic (for new construction frames, 120-277V, test switch is not wet location listed)

# **Footnotes**

SBA

- Emergency (EM6) frame is compatible with reflector mounted test switch when trim is ordered with IEM6 option code (not compatible with 347V or Power over Ethernet configurations). For remote mount switch, order standard trim and CAEM6TSCP mounting plate accessory.
- 2. Chicago Plenum frame is available for Buy American Compliant (BAC).
- 3. Failure to properly select the "BAC" suffix could result in you receiving product that is not BAA compliant product with no recourse for an RMA or refund. This BAC designation hereunder does not address (i) the applicability of, or availability of a waiver under, the Trade Agreements Act, or (ii) the "Buy America" domestic content requisites imposed on states, localities, and other non-federal entities as a condition of receiving funds administered by the Department of Transportation or other federal agencies.
- 4. Dim-to-warm (D2W) available only with Z10 dimming. Narrow (N) and medium (M) beams only.
- 5. Linear driver profile (see page 8).















# Round Sealed Downlight

Order logic: Tunable White

**Frame** Example: ASDFRBAC

Family ASDF	Size 4	Shape R	Voltage/Options
ASDF Specialty downlight frame	4 4"	R Round	EM6¹ Emergency, 6W
			LC <sup>2</sup> Chicago Plenum BAC <sup>3</sup> Meets the requisites of the Buy American Act of 1933 (BAA)

**Engine** Example: ASDE4O109BIOZ10U

Family ASD	$\neg$	Size 40	Lun	nens	CRI/CC	ст	Bea	am	Dimr	ning	Opti	ons	Vol	tage	Optio	ns
ASDE	Specialty downlight engine	<b>40</b> 4" Open	10 15 20	1000 lm 1500 lm 2000 lm		90 CRI Tunable White, up to 2000lm	N M	Narrow Medium				None	U 347 U	120/277V 347V 120/277V	BAC <sup>3</sup>	Meets the requisites of the Buy American
					9D2W <sup>4</sup> 9BIO	Dim to Warm, up to 2000lm 90 CRI			RA <sup>5</sup>	T-series Integral Interact Pro RF sensor (enables wireless connected lighting)	LIN <sup>5</sup>	Linear	U	120/277V		Act of 1933 (BAA)
						BioUp, up to 1500lm			D	DALI 0.1%	 LIN <sup>5</sup>	None Linear	U	120/277V		
									DMX	Digital Multiplexing with RDM 0.1%	 LIN⁵ SQR	None Linear Square	U	120/277V		

Trim Example: ASDT4ROWCLWH

Family		Size	Aperture	Style	Beam	Finish	Flange	Options
ASD	Г	4	R		_			
ASDT	Specialty downlight trim	4 4"	R Round	O Open	- Round	CL Specular clear CC Comfort clear CD Comfort clear diffuse	WH Matte White P Polished	BAC <sup>3</sup> Meets the requisites of the Buy American Act of 1933 (BAA)
						WH Matte White	WH Matte White	]

Accessories (Not currently BAA-compliant) learn more on page 3

Interact Ready System Bridge Accessory (refer to Philips System Bridge Accessory spec sheet for options and details)

Field-installable Bodine BSL6 6W battery pack with self-test/self-diagnostic (for new construction frames, 120-277V, test switch is not wet location listed) CAEM6

Must be ordered with EM6 frame for remote test switch (see page 2 for details) **CAEM6TSCP** 

T347-75VA 347:120V step-down transformer for non-IC (N) frame only (see page 2 for details)

### **Footnotes**

- Emergency (EM6) frame is compatible with reflector mounted test switch when trim is ordered with IEM6 option code (not compatible with 347V or Power over Ethernet configurations). For remote mount switch, order standard trim and CAEM6TSCP
- 2. Chicago Plenum frame is available for Buy American Compliant (BAC).
- 3. Failure to properly select the "BAC" suffix could result in you receiving product that is railing to properly select the BAC surfix could result in you receiving product that is not BAA compliant product with no recourse for an RMA or refund. This BAC designation hereunder does not address (i) the applicability of, or availability of a waiver under, the Trade Agreements Act, or (ii) the "Buy America" domestic content requisites imposed on states, localities, and other non-federal entities as a condition of receiving funds administered by the Department of Transportation or other federal agencies.
- 4. Dim-to-warm (D2W) available only with Z10 dimming. Narrow (N) and medium (M) beams only.
- 5. Linear driver profile (see page 8).













### Frame-in-kits

# **New Construction:**

Galvanized stamped steel for dry or plaster ceilings. Preinstalled telescoping mounting bars from 13" to 24". For 4' distances, use 1/2" EMT, 1-1/2" x 1/2" U or C channel. Installation requires access to the top side of the luminaire - consult installation instructions for details.

Max ceiling thickness is 2.75" (70 mm).

### Patented install Mounting frame:

- Pre-installed mounting bars for fast and toolless installs into T-grid & hat channel ceilings.
- Close-cut aperture design eliminates possibility of gap between ceiling opening and reflector flange.
- Separate wiring compartment for wiring frame to building allows inspection prior to light engine install.
- Simple plug-and-play connection between frame and light engine from below ceiling.

### **Emergency**

Bodine BSL6 6W battery pack with self-test/ diagnostic functionality. Factory or field mounted to frame

 For remote ceiling mounted test switch, order standard trim (ex: C6RDLCC). Optional accessory ceiling mounting plate available (CAEM6TSCP) for remote mounted test switch.

### **Dimming**

All configurations are FCC Class A unless otherwise specified.

- Advance 0-10V 1% (Z10), logarithmic curve is standard. Specify D2O for factory-set dimto-off function, consult factory for linear dimming curve.
- EldoLED SOLODrive (SOL) 0-10v 0.1%
- · Lutron LDE1 (L01) EcoSystem 1%
- DALI (D) DT6 DALI 0.1%
- DMX (DMX) Digital Multiplexing with RDM 0.1%

### **Dimming Options**

The following are factory-set options for the SOL, D, DMX, and RA driver options (ex. DMXLIN):

- SOL/D/DMX: Logarithmic (-) standard
- · RA/SOL/D/DMX : Linear (LIN)
- · SOL/DMX: Square (SQR)
- Dim to Warm (D2W): option changes CCT from 3000-1800K gradually as it dims. Use with Z10 dimming only. Fixture-to-fixture consistency of ≤3SDCM at 2700K & 3000K, and ≤5SDCM at 1800K.

### **Optical Systems**

#### Comfort throughout the space:

True 50° physical cutoff and 45° reflected cutoff. **Quality of light\*:** 

2 SDCM ensures color consistency from fixture to fixture and over the luminaire's long lifetime.

#### MesoOptics PET optical diffusion film:

Provides a smooth beam shape and mitigates color over angle with optimized luminaire efficiency.

\* Quality of light section would be different for the tunable white option

# **Light Engine**

Quick connect power pack allow for easy installation and replacement from below ceiling with no need for additional wiring. This allows for:

- Frame and ceiling installation to be performed while still finalizing details such as lumen packages, CCT and control type.
- Easy replacement of electronics at end of life with minimal wasted material and labor required.
- · Ease and upgradability of technology.
- 347V light engines are Z10 dimming only and include dedicated 347V driver. For 347V non-Z10 dimming, order T347-75VA field-installed stepdown transformer accessory.

### **Options and Accessories**

**SBA:** Interact Ready System Bridge Accessory. Requires IRT9015 IR remote and Interact Pro App for commissioning.

**CAEM6:** Field install EM6 kit with Bodine BSL6 6W battery pack with self-test/self-diagnostic, mounts to new construction frames. Includes remote ceiling plate for test switch.

**CAEM6TSCP:** Ceiling cover plate for remote mounted EM6 test switch. 1/2" (25mm) hole, 4 3/8" (109mm) x 2 3/4" (69mm) rectangular. Includes two mounting screws.

T347-75VA: Field installable 347:120V 75VA step-down transformer, attaches to knock out on frame junction box, for use with non-IC (N) or remodel (R) frames.

### **Labels and Listings**

Wet location, NSF, IP65, IK07, RoHS.

Designed to comply with ISO5 requirements for cleanroom applications.

# Warranty



5 year limited warranty Visit Signify.com/warranties for more information on Signify's standard 5-year limited warranty on complete luminaire systems.



# AccuRender Technology (CRI 90+)

The right light brings colors to life. Our new AccuRender technology helps ensure colors are rendered more accurately and consistently, while doing so as efficiently as CRI 80 products.



### Standard CRI 80

Good color rendering and high efficacy



#### Standard CRI 90

Better color rendering and low efficacy



#### AccuRender

Best color rendering, color preference and high efficacy

# **Enjoy design flexibility**

# Full range of products and options:

 Multiple color temperatures (CCTs) and lumen packages offered

# **Promote savings**

# High efficacy, with no penalty:

- Energy efficacy compares well to conventional 80 CRI
- Up to 25% more energy savings vs competitor 90 CRI¹

# Show your true colors

### High color rendering:

- True to life colors that help energize your environment and render better flesh tones critical for healthcare hospitality and retail applications.
- R<sub>a</sub> up to 94 CRI
   R<sub>f</sub> up to 92 TM-30
   R<sub>g</sub> up to 67 CRI
   G<sub>a</sub> up to 99 CRI
   C<sub>g</sub> up to 94 CRI
   R<sub>g</sub> up to 100 TM-30
   R<sub>cs,h1</sub> up to -5% TM-30

### Achieve color balance

#### Best in class color consistency:

 Promote aesthetic harmony in your space with ≤ 2 SDCM

# Photometric - Downlights with CRI of 90+ & R9 of 50+

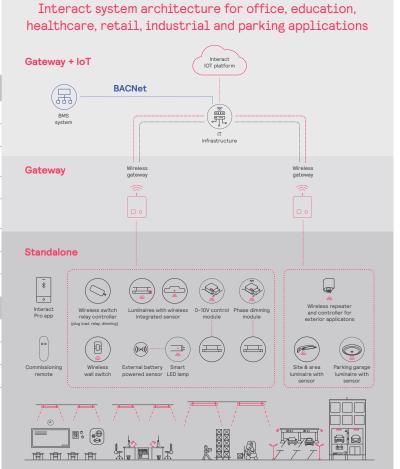
Lumen	B	Flux	Efficacy	Beam	СВСР	OD!		Photometry	IES	TM-30	)-18	
Package	Beam	(lm)	(lm/W)	Angle	CBCP	CRI	R9	Report	$R_f$	Rg	R <sub>cs,h1</sub>	UGR
	Narrow (N)	674	112	39	1661	90+	50+	Calc	91	100	-6%	0
500 lm	Medium (M)	692	102	53	881	90+	50+	Calc	91	99	-6%	0
	Wide (W)	634	93	69	404	90+	50+	Calc	91	99	-6%	0
	Narrow (N)	1002	116	39	2469	90+	50+	Calc	91	100	-6%	0
1000 lm	Medium (M)	1169	105	53	1489	90+	50+	Calc	91	99	-6%	0
	Wide (W)	1071	95	69	681	90+	50+	Calc	91	99	-6%	0
	Narrow (N)	1492	117	39	3676	90+	50+	STMR - 2974	91	100	-6%	1
1500 lm	Medium (M)	1671	108	53	2130	90+	50+	STMR - 4951	91	99	-6%	2
	Wide (W)	1540	99	69	979	90+	50+	STMR - 4974	91	99	-6%	1
	Narrow (N)	1969	112	39	4851	90+	50+	Calc	91	100	-6%	2
2000 lm	Medium (M)	2144	105	53	2731	90+	50+	Calc	91	99	-6%	2
	Wide (W)	1979	97	69	1258	90+	50+	Calc	91	99	-6%	2
	Narrow (N)	2332	108	39	5747	90+	50+	Calc	91	100	-6%	3
2500 lm	Medium (M)	1690	103	53	3426	90+	50+	Calc	91	99	-6%	3
	Wide (W)	2483	95	69	1580	90+	50+	Calc	91	99	-6%	3
	Narrow (N)	2864	103	39	7058	90+	50+	Calc	91	100	-6%	3
3000 lm	Medium (M)	3310	101	53	4216	90+	50+	Calc	91	99	-6%	4
	Wide (W)	3005	91	69	1912	90+	50+	Calc	91	99	-6%	4

		The three tiers of I	nteract
	Stores As	Parameter Name of State of Sta	
	Standalone	Gateway	Gateway + IoT
Dimming, grouping, and zoning	<b>✓</b>	<b>✓</b>	<b>~</b>
Bluetooth and ZigBee enabled	<b>✓</b>	<b>✓</b>	<b>✓</b>
Motion sensing and daylight harvesting	<b>✓</b>	<b>✓</b>	<b>✓</b>
Integration with 0-10V and phase dimming fixtures	<b>✓</b>	<b>✓</b>	<b>✓</b>
Code compliance	<b>✓</b>	<b>✓</b>	<b>✓</b>
Granular dimming and dwell time	<b>✓</b>	<b>✓</b>	<b>✓</b>
Correlated color temperature (CCT) tuning by switch	<b>✓</b>	<b>✓</b>	<b>✓</b>
Support for sensor-based Tunable White luminaires	<b>✓</b>	<b>✓</b>	<b>✓</b>
Energy reporting and monitoring		<b>✓</b>	<b>✓</b>
Scheduling		<b>✓</b>	<b>✓</b>
Demand response		<b>✓</b>	<b>✓</b>
BMS integration (BACnet)			<b>~</b>
Floor plan visualization			<b>✓</b>
IoT sensors for wellness			<b>✓</b>
IoT Apps for productivity			<b>~</b>

# Currently supported maximum system size

To be able to design the lighting system correctly for the customer, it is important to know the prime characteristics of the system, its possibilities and limitations.

System level	
Total number of gateways	Unlimited
Total number of devices	200 per network
<ul> <li>luminaires with integrated sensors</li> </ul>	150
• smart TLEDS	150
Total number of ZGP devices (sensors and switches)	50
· sensors	30
• switches	50
· zones and groups	64
Group level	
Recommended number of lights	40 (recommended 25)
Number of ZGP devices	5
Number of scenes	16



# Wireless controls options

#### Interact

- SWZCS is a connected sensor with integral occupancy and daylight sensing and supports wireless mesh connectivity.
- The sensor works in the standalone mode (similar to SpaceWise) when configured without a gateway or in a cloud connected mode if a compatible gateway is used.
- Interact includes an App, a portal and a broad portfolio of wireless luminaires, lamps and retrofit kits all working on the same system.
- Startup is implemented via Interact Pro App (Android or iPhone) & BlueTooth connectivity.
   The App provides flexibility to choose between a gateway or non gateway mode for setup.
- Setup with the gateway requires wired internet access to the gateway. It is possible to add a gateway at a later point.
- Prepare project configuration steps remotely and use IRT9015 remote on-site to identify and group devices together.

#### Compatible with:

- SWS200 & UID8465 wireless scene switch
- Battery powered IP42 presence sensor OCC sensor IA CM WH 10/1
- Battery powered IP42 presence & daylight sensor OCC-DL sensor IA CM IP42 WH
- LCN3110: battery powered IP65 presence sensor, OCC sensor IA CM IP65W
- LCN3120: battery powered IP65 presence & daylight sensor, OCC-DL sensor IA CM IP65 WH
- For more information on Interact visit: interact-lighting.com/interactproscalablesystem

### Radio only sensor (RA or RADIO)

- Integral RA or RADIO only sensor simply enables wireless mesh connectivity to the luminaire without any occupancy or daylight sensing.
- Ideal for applications where sensing functionality is managed by other Interact devices and the luminaire only needs to have wireless connectivity.
- Interact includes an App, a portal and a broad portfolio of wireless luminaires, lamps and retrofit kits all working on the same system.
- Startup is implemented via Interact Pro App (Android or iPhone) & Bluetooth connectivity.
   The App provides flexibility to choose between a gateway or non-gateway mode for setup.
- Setup with the gateway requires wired internet access to the gateway. It is possible to add a gateway at a later point.
- Prepare project configuration steps remotely, identify and group devices together onsite.
- Compatible with SWS200 and UID8465 wireless scene switch, wireless Occ sensor (OCC SENSOR IA CM IP42 WH 10/1) and wireless Day/Occ sensor (OCC MULTI SENSOR IA CM WH 10/1).
- For more information on Interact visit: interact-lighting.com/interactproscalablesystem

### Sensor bundle (IAOSB or SB)

- A wireless IoT connected lighting solution for large enterprises that span across multiple floors, buildings and require multiple gateways.
- View all your projects under one dashboard and easily compare insights from multiple projects in one view.
- Compatible with SWS200 wireless scene switch, wireless Occ sensor (OCC SENSORIA CM IP42 WH 10/1) and wireless Day/Occ sensor (OCC MULTI SENSOR IA CM WH 10/1) and wireless Occupancy or Daylight & Occupancy sensors available. Use Interact software and insights to increase building efficiency, achieve building wide integration and optimize space through occupancy analytics.
- IAOSB or SB option in addition to occupancy and daylights sensing supports advanced IoT capabilities, such as people estimation analysis, desk level temperature & humidity sensing, noise classification, and BLE beacon.
- Requires compatible Gateway and internet connectivity for commissioning.
- For more information, visit: interact-lighting.com/interactproscalablesystem

# **Emergency Options (ER100)**

- Power Sensing (factory default) –
  Recommended UL924 option requires unswitched power sense line, absence of voltage on the normal circuit triggers luminaire to 100% output.
- Power Interruption Detection (field option) –
  Detects AC power interruption >30ms triggers
  90 minute emergency mode with luminaire at
  100% output.

# Interact supported sensor option codes across Genlyte product lines

	Evokit	Day-Brite	Ledalite	Lightolier
ZigBee + Bluetooth + Sensing	SWZCS	SWZCS	CS	SBA accessory (external)
ZigBee + Bluetooth	RADIO	RADIO	RA	RA
ZigBee + Bluetooth + Sensing + Environmental data	IAOSB	IAOSB	SB	SB
ZigBee + Highbay + Sensing	-	SWZCSH	-	-

# **Finishes**



Specular clear (CL): Most specular and most efficient finish, delivers maximum photometric performance but can produce a mirror image effect of the interior space.



Comfort clear (CC): Semi-specular finish that softens the light at the source of the reflector and creates a subtle, even luminance from the reflector cone.



Comfort clear diffuse (CD): Slightly diffuse clear finish, that eliminates iridescence and reduces the mirror image effect inherent with specular finishes.



Matte White (WH): Brightest illuminated aperture and provides the smoothest transition to most ceilings when off (matte white finish is only available with a matte white flange).

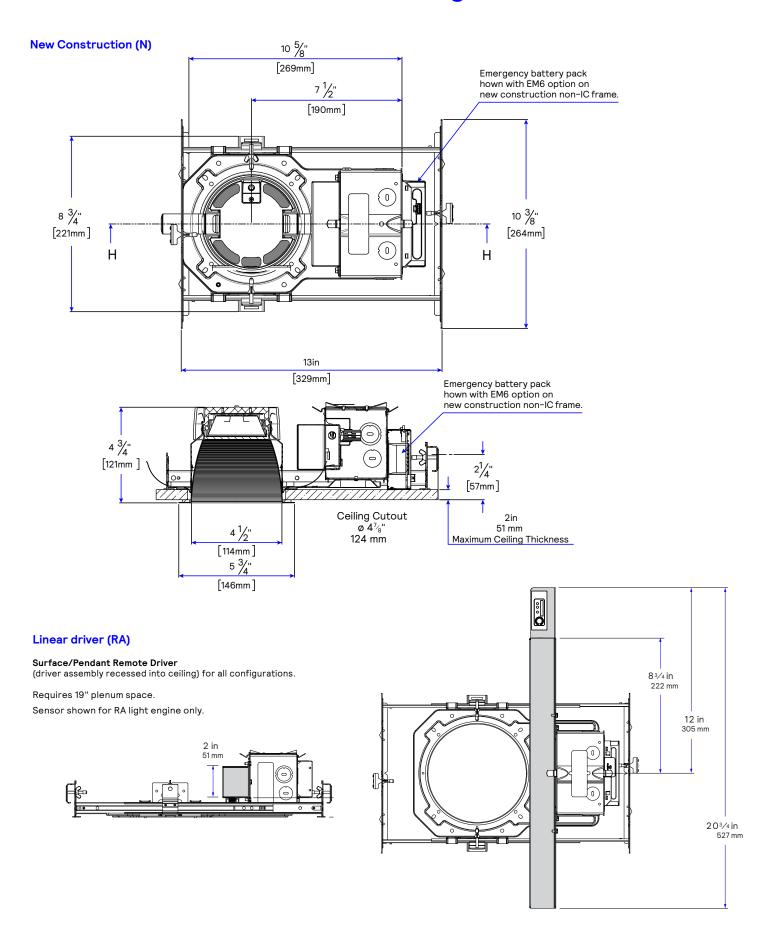
# **Flanges**



Matte White (WH): Brightest illuminated aperture and provides the smoothest transition to most ceilings when off (matte white finish is only available with a matte white flange).



**Polished (P):** Produces a continuous look throughout the reflector.



# Static White: Electrical - Narrow

F ! K!t				LED Drive	I B		THD Factor	Power Factor
Frame-in Kit	Input Volts	Input Freq.	Input Current	Current	Input Power	LED Power	@ M	ax Load
	120V	50/60Hz	0.058A	0.15A	7.0W	5.5W	<10%	>0.9
ASDE4_05_NZ10U/3	277V	50/60Hz	0.026A	0.15A	7.2W	5.5W	<30%	>0.9
	347V	50/60Hz	0.023A	0.15A	8.1W	5.5W	N/A	>0.9
	120V	50/60Hz	0.083A	0.22A	9.9W	8.1W	<10%	>0.9
ASDE4_10_NZ10U/3	277V	50/60Hz	0.037A	0.22A	10.2W	8.1W	<20%	>0.9
	347V	50/60Hz	0.033A	0.22A	11.5W	8.1W	<30%	>0.9
	120V	50/60Hz	0.121A	0.33A	14.5W	12.1W	<10%	>0.9
ASDE4_15_NZ10U/3	277V	50/60Hz	0.053A	0.33A	14.6W	12.1W	<10%	>0.9
	347	50/60Hz	0.048A	0.33A	16.6W	12.1W	<25%	>0.9
	120V	50/60Hz	0.163A	0.45A	19.5W	16.5W	<10%	>0.9
ASDE4_20_NZ10U/3	277V	50/60Hz	0.071A	0.45A	19.7W	16.5W	<10%	>0.9
	347V	50/60Hz	0.063A	0.45A	21.7W	16.5W	<20%	>0.9
	120V	50/60Hz	0.198A	0.55A	23.7W	20.2W	<10%	>0.9
ASDE4_25_NZ10U/3	277V	50/60Hz	0.086A	0.55A	23.9W	20.2W	<10%	>0.9
	347V	50/60Hz	0.073A	0.55A	25.2W	20.2W	<20%	>0.9
	120V	50/60Hz	0.250A	0.70A	30.0W	25.7W	<10%	>0.9
ASDE4_30_NZ10U/3	277V	50/60Hz	0.108A	0.70A	29.9W	25.7W	<10%	>0.9
	347V	50/60Hz	0.090A	0.70A	31.3W	25.7W	<15%	>0.9

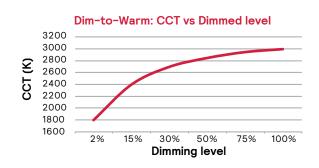
# Static White: Electrical - Medium & Wide

				LED Drive			THD Factor	Power Factor
Frame-in Kit	Input Volts	Input Freq.	Input Current	Current	Input Power	LED Power	@ Ma	ax Load
	120V	50/60Hz	0.053A	0.15A	6.3W	5.0W	<10%	>0.9
ASDE4_05_[M W]Z10U/3	277V	50/60Hz	0.024A	0.15A	6.6W	5.0W	<30%	>0.9
	347V	50/60Hz	0.021A	0.15A	7.4W	5.0W	N/A	>0.9
	120V	50/60Hz	0.085A	0.25A	10.2W	8.4W	<10%	>0.9
ASDE4_10_[M W]Z10U/3	277V	50/60Hz	0.037A	0.25A	10.4W	8.4W	<10%	>0.9
	347V	50/60Hz	0.034A	0.25A	11.8W	8.4W	<30%	>0.9
	120V	50/60Hz	0.119A	0.36A	14.3W	12.0W	<10%	>0.9
ASDE4_15_[M W]Z10U/3	277V	50/60Hz	0.052A	0.36A	14.4W	12.0W	<10%	>0.9
	347	50/60Hz	0.047A	0.36A	16.3W	12.0W	<25%	>0.9
	120V	50/60Hz	0.154A	0.47A	18.5W	15.7W	<10%	>0.9
ASDE4_20_[M W]Z10U/3	277V	50/60Hz	0.067A	0.47A	18.6W	15.7W	<10%	>0.9
	347V	50/60Hz	0.059A	0.47A	20.5W	15.7W	<20%	>0.9
	120V	50/60Hz	0.196A	0.60A	23.5W	20.0W	<10%	>0.9
ASDE4_25_[M W]Z10U/3	277V	50/60Hz	0.085A	0.60A	23.5W	20.0W	<10%	>0.9
	347V	50/60Hz	0.072A	0.60A	24.8W	20.0W	<20%	>0.9
	120V	50/60Hz	0.242A	0.75A	29.0W	25.0W	<10%	>0.9
ASDE4_30_[M W]Z10U/3	277V	50/60Hz	0.105A	0.75A	29.0W	25.0W	<10%	>0.9
	347V	50/60Hz	0.086A	0.75A	29.7W	25.0W	<15%	>0.9

# Static White Lifetime (TM-21) data

Lumens	Narrow beam	Medium/Wide beam		
1000lm				
1500lm				
2000lm	L90 @ 60,000hrs.	L90 @ 60,000hrs.		
2500lm				
3500lm*				

<sup>\*</sup> Lutron 3500lm with Medium/Wide beam is L85 @ 60,000hrs.



# **Tunable White: Electrical - Narrow**

Frame-in Kit	Input Volts	Input Freq.	Input Current	LED Drive	Input Power	LED Power	THD Factor	Power Factor	
rrame-in Kit	input voits	input ried. Input ourrent		Current	input Fower	LED Fower	@ Max Load		
	120V	50/60Hz	0.061A	0.15A	7.3W	5.5W	<15%	>0.9	
ASDE4_05D2WNZ10U/3	277V	50/60Hz	0.028A	0.15A	7.9W	5.5W	<30%	>0.8	
	120V	50/60Hz	0.085A	0.22A	10.2W	8.1W	<15%	>0.9	
	277V	50/60Hz	0.040A	0.22A	11.1W	8.1W	<25%	>0.8	
ASDE4_15D2WNZ10U/3	120V	50/60Hz	0.122A	0.33A	14.6W	12.1W	<10%	>0.9	
	277V	50/60Hz	0.056A	0.33A	15.5W	12.1W	<25%	>0.85	
	120V	50/60Hz	0.162A	0.45A	19.4W	16.5W	<10%	>0.9	
ASDE4_20D2WNZ10U/3	277V	50/60Hz	0.075A	0.45A	20.6W	16.5W	<20%	>0.9	
	120	50/60Hz	0.074A	0.20A	8.8W	7.2W	<20%	>0.9	
	277V	50/60Hz	0.034A	0.20A	9.5W	7.2W	<30%	>0.8	
ASDE4_1096TeZ10U/3	120V	50/60Hz	0.133A	0.37A	16.0W	13.2W	<20%	>0.9	
	277V	50/60Hz	0.060A	0.37A	16.6W	13.2W	<20%	>0.8	
	120V	50/60Hz	0.193A	0.55A	23.2W	19.7W	<15%	>0.9	
ASDE4_1596TeZ10U/3	277V	50/60Hz	0.088A	0.55A	24.3W	19.7W	<20%	>0.85	
	120V	50/60Hz	0.257A	0.75A	30.9W	26.9W	<15%	>0.9	
	277V	50/60Hz	0.117A	0.75A	32.3W	26.9W	<15%	>0.9	
ASDE4_059BIONZ10U/3	120V	50/60Hz	0.056A	0.16A	6.7W	5.4W	<20%	>0.9	
	277V	50/60Hz	0.026A	0.16A	7.3W	5.4W	<30%	>0.8	
ASDE4_109BIONZ10U/3	120	50/60Hz	0.112449799	0.32	13.4939759	11.2	<20%	>0.9	
ASDE4_159BIONZ10U/3	277V	50/60Hz	0.051A	0.32A	14.0W	11.2W	<20%	>0.8	
	120V	50/60Hz	0.189A	0.54A	22.7W	19.3W	<15%	>0.9	
	277V	50/60Hz	0.086A	0.54A	23.8W	19.3W	<20%	>0.85	

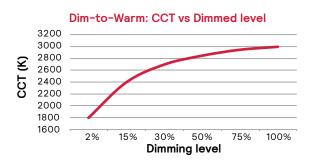
# Tunable White: Electrical - Medium & Wide

France in Vit	In much Malka	Innut Fran	Innut Cument	LED Drive	I D	1 FD D	THD Factor	Power Factor	
Frame-in Kit	Input Volts	Input Freq.	Input Current	Current	Input Power	LED Power	@ Max Load		
	120V	50/60Hz	0.056A	0.15A	6.7W	5.0W	<15%	>0.9	
ASDE4_05D2W[M W]Z10U/3	277V	50/60Hz	0.026A	0.15A	7.2W	5.0W	<30%	>0.8	
	120V	50/60Hz	0.088A	0.25A	10.6W	8.4W	<15%	>0.9	
	277V	50/60Hz	0.041A	0.25A	11.4W	8.4W	<25%	>0.8	
ASDE4_15D2W[M W]Z10U/3	120V	50/60Hz	0.120A	0.36A	14.4W	12.0W	<10%	>0.9	
	277V	50/60Hz	0.055A	0.36A	15.4W	12.0W	<25%	>0.85	
	120V	50/60Hz	0.153A	0.47A	18.4W	15.7W	<10%	>0.9	
ASDE4_20D2W[M W]Z10U/3	277V	50/60Hz	0.071A	0.47A	19.6W	15.7W	<20%	>0.9	
	120	50/60Hz	0.074A	0.20A	8.8W	7.2W	<20%	>0.9	
	277V	50/60Hz	0.034A	0.20A	9.5W	7.2W	<30%	>0.8	
ASDE4_1096TeZ10U/3	120V	50/60Hz	0.133A	0.37A	16.0W	13.2W	<20%	>0.9	
	277V	50/60Hz	0.060A	0.37A	16.6W	13.2W	<20%	>0.8	
	120V	50/60Hz	0.193A	0.55A	23.2W	19.7W	<15%	>0.9	
ASDE4_1596TeZ10U/3	277V	50/60Hz	0.088A	0.55A	24.3W	19.7W	<20%	>0.85	
	120V	50/60Hz	0.257A	0.75A	30.9W	26.9W	<15%	>0.9	
	277V	50/60Hz	0.117A	0.75A	32.3W	26.9W	<15%	>0.9	
ASDE4_059BIO[M W]Z10U/3	120V	50/60Hz	0.056A	0.16A	6.7W	5.4W	<20%	>0.9	
	277V	50/60Hz	0.026A	0.16A	7.3W	5.4W	<30%	>0.8	
ASDE4_109BIO[MIW]Z10U/3	120	50/60Hz	0.112449799	0.32	13.4939759	11.2	<20%	>0.9	
	277V	50/60Hz	0.051A	0.32A	14.0W	11.2W	<20%	>0.8	
ASDE4_159BIO[M W]Z10U/3	120V	50/60Hz	0.189A	0.54A	22.7W	19.3W	<15%	>0.9	
	277V	50/60Hz	0.086A	0.54A	23.8W	19.3W	<20%	>0.85	

# Tunable White Lifetime (TM-21) data

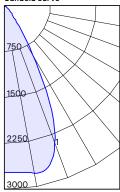
Lumens	Narrow beam	Medium/Wide beam		
1000lm 1500lm 2000lm 2500lm 3500lm*	L90 @ 60,000hrs.	L90 @ 60,000hrs.		

<sup>\*</sup> Lutron 3500lm with Medium/Wide beam is L85 @ 60,000hrs.



# Narrow beam, 2000lm Engine, 111 lm/W at 18W

#### Candela curve



#### ASDE4O20935NZ10U -ASDT4ROCL

Output lumens: 1955 lm CCT: 3500K lnput watts: 17.6 W Efficacy: 111.1 lm/W CRI: 90 min Spacing crit.: 0.62 Beam angle: 36°

### Zonal summary

е

Angle	Mean CP	Lumens
0 5	4815	
5	4600	
10	3981	420
15	3097	
20	2012	838
25	1008	
30	409	476
35	224	
40	177	151
45	83	
50	11	67
55	3	
60	2	3
65	1	
70	1	1
75	0	
80		0
85	0	
90	0	0

#### Single unit data

Height to lighted plane	Initial foot-candles	Beam diameter (ft)*				
8'	75	4.8'				
9'	59	5.4'				
10'	48	6.0'				
12'	33	6.6'				
14'	25	8.7'				

<sup>\*</sup> Beam diameter is where foot-candles drop to 50% of maximum.

### Multiple unit data - RCR 2

Spacing on center	Initial foot-candles	Watts per sq. ft.		
5'	92.0	0.78		
6'	60.0	0.51		
7'	43.0	0.37		
8'	36.0	0.30		
9'	29.0	0.24		

38' x 38' x 10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Efficacy: 111.11m/W Report<sup>2</sup>: STMR-2974

#### Adjustment factors

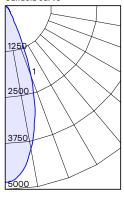
Reflector Finish	ССТ	Lenses			
CL = 100% CC = 95% CD = 87% WH = 87% BK = 57% AM = 97%	90CRI, 4000K = 102% 90CRI, 3500K = 100% 90CRI, 3000K = 96% 90CRI, 2700K = 92%	125CA = 96% 125CP = 90% 187CP = 92% 250CP = 85% CP125 = 84% NA = 100%			

#### Coefficients of utilization

Cei	ling		80	)%		70	1%	50	)%	30	)%	0%
Wal	I	70	50	30	10	50	10	50	10	50	10	0
RCR		Zona	al cav	ity me	ethod	- Eff	ectiv	e floo	r refl	ectar	nce =	20%
	0	119	119	119	119	116	116	111	111	106	106	100
0	1	114	112	110	108	110	106	106	103	102	100	95
ij	2	110	106	103	100	104	99	101	96	98	94	91
20	3	106	100	96	93	99	92	97	91	94	89	87
Ę	4	102	96	91	88	94	87	92	86	91	85	83
á	5	98	91	86	83	90	82	89	82	87	81	79
Room Cavity Ratio	6	94	87	82	79	86	78	85	78	84	77	76
o	7	91	83	78	75	83	75	82	74	80	74	73
2	8	88	80	75	72	79	72	78	71	77	71	70
	9	85	77	72	69	76	69	75	68	75	68	67
	10	82	74	69	66	73	66	73	66	72	66	64

# Medium beam, 2000lm Engine, 105 lm/W at 20W

#### Candela curve



#### ASDE4O20935MZ10U -ASDT4ROCL

 Output lumens:
 2140 lm

 CCT:
 3500K

 Input watts:
 20.4 W

 Efficacy:
 104.9 lm/W

 CRI:
 90 min

 Spacing crit:
 0.92

 Beam angle:
 53°

#### Zonal summary

Zone	Lumens	%Luminaire
0-30	1784	83.4%
0-40	2064	96.4%
0-60	2138	99.9%
0-90	2140	100.0%

Angle	Mean CP	Lumens
0	2726	
5	2730	
10	2777	262
15	2738	
20	2406	756
25	1726	
30	919	766
35	407	
40	200	280
45	86	
50	12	71
55	3	
60	2	3
65	1	
70	1	1
75	0	
80	0	0
85	0 0 0	
90	0	0

#### Single unit data

Height to lighted plane	Initial foot-candles	Beam diameter (ft)*			
5'	109	4.6'			
6'	76	5.5'			
7'	56	6.4'			
8'	43	7.4'			
9'	34	8.3'			

<sup>\*</sup> Beam diameter is where foot-candles drop to 50% of maximum.

# Multiple unit data - RCR 2

	Spacing on center	Initial foot-candles	Watts per sq. ft.				
	5'	99.0	0.90				
	6'	65.0	0.59				
	7'	46.0	0.42				
	8'	39.0	0.35				
	9'	31.0	0.28				
-	201 201 401 5						

38' x 38' x 10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Efficacy: 104.9 lm/W Report<sup>2</sup>: STMR-4951

#### Adjustment factors

Reflector Finish	CCT	Lenses			
CL = 100% CC = 95% CD = 87% WH = 87% BK = 57% AM = 97%	90CRI, 4000K = 102% 90CRI, 3500K = 100% 90CRI, 3000K = 96% 90CRI, 2700K = 92%	125CA = 96% 125CP = 90% 187CP = 92% 250CP = 85% CP125 = 84% NA = 100%			

# Coefficients of utilization

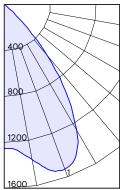
Ceiling			80	1%		70	1%	50	1%	30	)%	0%
Wall		70	50	30	10	50	10	50	10	50	10	0
RCR		Zona	al cav	ity me	ethod	- Eff	ectiv	e floo	r refl	ectar	ice =	20%
	0	119	119	119	119	116	116	111	111	106	106	100
0	1	114	111	109	107	109	105	105	102	101	99	94
ξį	2	109	104	101	97	103	96	99	94	96	92	89
æ	3	104	98	93	90	97	89	94	88	92	86	83
ξ	4	99	92	87	83	91	83	89	82	87	81	79
Cavity Ratio	5	95	87	82	78	86	77	84	77	83	76	74
Ö	6	90	82	77	73	81	72	80	72	79	72	70
Room	7	86	78	72	68	77	68	76	68	75	67	66
8	8	83	74	68	64	73	64	72	64	71	64	62
	9	79	70	65	61	70	61	69	61	68	60	59
	10	76	67	61	58	66	58	65	57	65	57	56

<sup>1.</sup> Correlated Color Temperature within specs as defined in ANSI\_NEMA\_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

<sup>2.</sup> Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.

# Wide beam, 2000lm Engine, 97lm/W at 20W

#### Candela curve



# 1600 ASDE4O20935WZ10U -

ASDT4ROCL

Output lumens: 1972 lm CCT: 3500K Input watts: 20.4 W Efficacy: 96.7 lm/W CRI: 90 min Spacing crit: 1.3 Beam angle: 75°

#### Zonal summary

Zone	Lumens	%Luminaire
0-30	1208	61.3%
0-40	1781	90.3%
06-0	1970	99.9%
0-90	1972	100.0%

Angle	Mean CP	Lumens
0	1254	
5	1277	
10	1370	125
15	1488	
20	1528	420
25	1465	
30	1257	663
35	927	
40	580	573
45	211	
50	24	183
55	5	
60	3	6
65	1	
70	1	1
75	0	
80	0	0
85	0	
90	0	0

#### Single unit data

Height to lighted plane	Initial foot-candles	Beam diameter (ft)*			
5'	50	6.5'			
6'	35	7.8'			
7'	26	9.1'			
8'	20	10.4'			
9'	15	11.7'			

<sup>\*</sup> Beam diameter is where foot-candles drop to 50% of maximum.

#### Multiple unit data - RCR 2

Spacing on center	Initial foot-candles	Watts per sq. ft.		
5'	89.0	0.90		
6'	58.0	0.59		
7'	42.0	0.42		
8'	35.0	0.35		
9'	28.0	0.28		

38' x 38' x 10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Efficacy: 96.7lm/W Report<sup>2</sup>: STMR-4974

#### Adjustment factors

Reflector Finish	ССТ	Lenses
CL = 100% CC = 95% CD = 87% WH = 87% BK = 57% AM = 97%	90CRI, 4000K = 102% 90CRI, 3500K = 100% 90CRI, 3000K = 96% 90CRI, 2700K = 92%	125CA = 96% 125CP = 90% 187CP = 92% 250CP = 85% CP125 = 84% NA = 100%

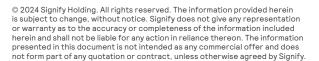
#### Coefficients of utilization

Cei	ling	80%		70	70%		50%		30%			
Wal	I	70	50	30	10	50	10	50	10	50	10	0
RCR		Zona	al cav	ity me	ethod	- Eff	ectiv	e floo	r refl	ectar	nce =	20%
	0	119	119	119	119	116	116	111	111	106	106	100
0	1	113	110	108	106	108	104	104	101	100	98	93
ij	2	107	102	98	95	101	93	97	91	94	89	86
Room Cavity Ratio	3	102	95	90	85	93	85	91	83	88	82	79
ΞĒ	4	96	88	82	78	87	77	85	76	83	75	73
ě	5	91	82	76	71	81	71	79	70	77	70	67
Ö	6	86	76	70	65	75	65	74	65	72	64	62
o	7	81	71	65	60	70	60	69	60	68	59	58
8	8	77	66	60	56	66	56	65	55	64	55	53
	9	72	62	56	52	62	52	61	51	60	51	50
	10	69	58	52	48	58	48	57	48	56	48	46

<sup>1.</sup> Correlated Color Temperature within specs as defined in ANSI\_NEMA\_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

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<sup>2.</sup> Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.