

# 2 SERIES LED INT

## ADJUSTABLE

High-output, low profile, and infinite adjustment -- these small aperture downlights make elegant design statements in discerning residential, retail, and hospitality environments.

PROJECT NAME:	TYPE:
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### ORDERING INFORMATION

TRIM	RATING	FLANGE FINISH	CRI / WATTAGE PACKAGE	CCT	OPTIC (UGR)	INSTALL TYPE	CEILING THICKNESS	POWER SUPPLY	MEDIA	FLANGE CONFIGURATION
2RA Round Expanded Aperture 2PA Round Pinhole Aperture 2SA Square Expanded Aperture	1 Dry/Damp 2 Wet* <small>* (Lens sealed in place)</small>	WH White AG Satin Silver IG Industrial Gray AU Cashmere Gold AB Arch Bronze BB Burnt Bronze BK Black SS Stainless Steel* <small>* (Increased lead time)</small> CH Chrome* <small>* (Increased lead time)</small> MB Matte Bronze* <small>* (Increased lead time)</small> PB Polished Bronze* <small>* (Increased lead time)</small> PR Primer CF Custom* <small>* (Consult Factory)</small>	<b>LOW FLUX STATIC WHITE</b> <b>80S06A</b> 80+ CRI, 6 Watts (Delivered - 2RA 670, 2PA 544, 2SA 603) <b>80S11A</b> 80+ CRI, 11 Watts (Delivered - 2RA 1076, 2PA 886, 2SA 1011) <b>80S15A</b> 80+ CRI, 15 Watts (Delivered - 2RA 1471, 2PA 1194, 2SA 1386) <b>90S06A</b> 90+ CRI, 6 Watts (Delivered - 2RA 578, 2PA 469, 2SA 520) <b>90S11A</b> 90+ CRI, 11 Watts (Delivered - 2RA 928, 2PA 764, 2SA 872) <b>90S15A</b> 90+ CRI, 15 Watts (Delivered - 2RA 1268, 2PA 1029, 2SA 1195) <b>97S06A</b> 97+ CRI, 6 Watts (Delivered - 2RA 509, 2PA 412, 2SA 458) <b>97S11A</b> 97+ CRI, 11 Watts (Delivered - 2RA 817, 2PA 672, 2SA 767) <b>97S15A</b> 97+ CRI, 15 Watts (Delivered - 2RA 1116, 2PA 905, 2SA 1052) <b>HIGH FLUX STATIC WHITE</b> <b>80S21A</b> 80+ CRI, 21 Watts (Delivered - 2RA 1974, 2PA 1624, 2SA 1856) <b>90S21A</b> 90+ CRI, 21 Watts (Delivered - 2RA 1702, 2PA 1400, 2SA 1600) <b>97S21A</b> 97+ CRI, 21 Watts (Delivered - 2RA 1498, 2PA 1232, 2SA 1408)  <b>WARM DIM</b> <b>90W11A</b> 90+ CRI, 11 Watts, Incandescent Profile: 2700K - 1800K (Delivered - 2RA 656, 2PA 566, 2SA 590) Halogen Profile: 3000K - 1800K (Delivered - 2RA 645, 2PA 540, 2SA 581) <b>90W15A</b> 90+ CRI, 15 Watts, Incandescent Profile: 2700K - 1800K (Delivered - 2RA 917, 2PA 791, 2SA 862) Halogen Profile: 3000K - 1800K (Delivered - 2RA 904, 2PA 756, 2SA 850) *SEE PAGE 3 FOR DETAILED WARM DIM PROFILE COMPARISON.  <b>TUNABLE WHITE</b> <b>90T17A</b> 90+ CRI, 17 Watts, Warm Profile: 4000K - 1800K (Delivered - 2RA 1067, 2PA 908, 2SA 960) Cool Profile: 5000K - 2700K (Delivered - 2RA 1049, 2PA 900, 2SA 944) *ALL DELIVERED LUMEN OUTPUTS REFLECT 3000K PAIRED WITH 20° OPTIC AND SOFT FOCUS LENS.	24 2400K* <small>* (90+ CRI only, 15W max)</small> 27 2700K 30 3000K 35 3500K 40 4000K	10 10° (<13) <small>* (15W packages only)</small> 15 15° (<13) 20 20° (<13) 25 25° (<13) 40 40° (<13) 60 60° (<13) <small>* (Not recommended for 2PA)</small>	EX Export	0 0.125" - 0.49"* <small>* (RM, RR Install Types only)</small> 1 0.50" - 0.75" 2 0.76" - 1.25"* <small>* (Max Tilt 35°, see page 4 for details.)</small> 3 1.26" - 2.00"* <small>* (Max Tilt 13°, see page 4 for details.)</small> 4 2.01" - 3.00"* <small>* (Max Tilt 5°, see page 4 for details.)</small>	(120-277V) AN3 eldoLED, ECOdrive 1.0% 0-10V, LOG LN1 eldoLED, ECOdrive 1.0% 0-10V, LIN EA1 eldoLED, SOL0drive 0.1% 0-10V, LOG LA1 eldoLED, SOL0drive 0.1% 0-10V, LIN ED1 eldoLED, SOL0drive 0.1% DALI-2, LOG LD1 eldoLED, SOL0drive 0.1% DALI-2, LIN NOD Driver Supplied by Others  TUNABLE WHITE REMOTE (0.1%, 120-277V) DD1 eldoLED, DUALdrive DALI-2, LOG	<b>Standard Media</b> 04 Soft Focus Lens <small>* (Required for 10° optic)</small>  <b>Alternate Media</b> NL No Lens* <small>* (Not available for wet location or Warm Dim)</small> 02 Honeycomb Louver* <small>* (Not available for wet location or Warm Dim)</small> 03 Clear Glass Lens* <small>* (Not available for Warm Dim)</small> 05 Frosted Glass Lens 09 Ultra Violet Lens 11 Shatterproof Soft Focus Lens 12 Shatterproof Frosted Lens 26 Frosted Linear Spread Lens* <small>* (Not available for wet location)</small>	F Flange Overlay (No Applique) G Zero Sightline Gypsum (1/16" Applique)* <small>* (Not available for wet location)</small> P Zero Sightline Plaster (1/8" Applique)* <small>* (Not available for wet location)</small>

### PART NUMBER NOTES

- Fitting ships as e.g., 2RA1-WH-80S15A2-2EX1-AN304
- Driver ships with fitting
- Applique ships with fitting



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## ACCESSORIES

### ALTERNATE MEDIA

- HCL-2** Honeycomb Louver\*
- \*(Not available for IP64 wet location or Warm Dim)
- CGL-2** Clear Glass Lens\*
- \*(Not available for Warm Dim)
- SFL-2** Soft Focus Lens
- FGL-2** Frosted Glass Lens
- UVL-2** Ultra Violet Lens
- FLSL-2** Frosted Linear Spread Lens\*
- \*(Not available for IP64 wet location)
- SFL-2-SP** Shatterproof Soft Focus Lens
- FGL-2-SP** Shatterproof Frosted Lens

### STATIC WHITE REPLACEMENT OPTICS

- RO-50-15-S** 15° optic
- RO-50-20-S** 20° optic
- RO-50-25-S** 25° optic
- RO-50-40-S** 40° optic
- RO-50-60-S** 60° optic\*
- \*(Not recommended for 2PA)

### WARM DIM REPLACEMENT OPTICS

- RO-50-20-W** 20° optic
- RO-50-25-W** 25° optic
- RO-50-40-W** 40° optic
- RO-50-60-W** 60° optic\*
- \*(Not recommended for 2PA)

### TUNABLE WHITE REPLACEMENT OPTICS

- RO-50-15-T** 15° optic
- RO-50-20-T** 20° optic
- RO-50-25-T** 25° optic
- RO-50-40-T** 40° optic
- RO-50-60-T** 60° optic\*
- \*(Not recommended for 2PA)

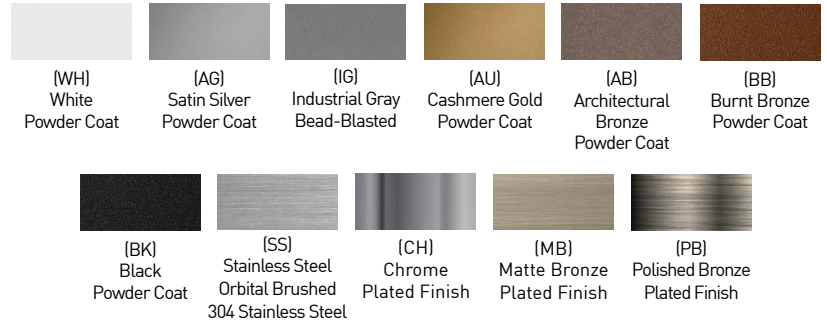
**ROUTER TOOL GUIDE** (IP10 Dry / Damp locations only)  
Recommended for Zero-Sightline installations in wood ceilings.

- DLA-RTG-2S-RD** Tool, router guide, round; reusable
- DLA-RTG-2S-SQ** Tool, router guide, square; reusable

### ADJUSTMENT TOOL

- One included with every four fittings.
- TOOL-HEX-050**

## FINISHES BY LUCIFER LIGHTING™



## DRIVE CURRENT SPECIFICS

	80S				90S				97S				90W				90T	
	06A	11A	15A	21A	06A	11A	15A	21A	06A	11A	15A	21A	11AD	11AL	15AD	15AL	17AH	17AR
Minimum Vf	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5	30.5
Maximum Vf	36.2	36.2	36.2	36.2	36.2	36.2	36.2	36.2	36.2	36.2	36.2	36.2	37.6	37.6	37.6	37.6	37.6	37.6
Current mA	150	250	350	500	150	250	350	500	150	250	350	500	250	250	350	350	400	400
Wattage W	6	11	15	21	6	11	15	21	6	11	15	21	8	8	15	15	14	14

	10 DEGREE OPTIC		
	80S15C	90S15C	97S15C
Minimum Vf	30.5	30.5	30.5
Maximum Vf	36.2	36.2	36.2
Current mA	350	350	350
Wattage W	15	15	15

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## PERFORMANCE - 3000K

CRI / WATTAGE PACKAGE	WATTAGE	ADJUSTABLE - 20° OPTIC - SOFT FOCUS LENS					
		2RA		2PA		2SA	
		DELIVERED	LPW	DELIVERED	LPW	DELIVERED	LPW
80S06A	6	670	112	544	91	603	100
80S11A	11	1076	98	886	80	1011	92
80S15A	15	1471	98	1194	80	1386	92
80S21A	21	1974	94	1624	77	1856	88
90S06A	6	578	96	469	78	520	87
90S11A	11	928	84	764	69	872	79
90S15A	15	1268	84	1029	69	1195	80
90S21A	21	1702	81	1400	67	1600	76
97S06A	6	509	85	413	69	458	76
97S11A	11	817	74	672	61	767	70
97S15A	15	1116	74	905	60	1052	70
97S21A	21	1498	71	1232	59	1408	67
90W11AWL (2700K-1800K)	11	656	60	566	51	590	54
90W11AWD (3000K-1800K)	11	645	59	540	49	581	53
90W15AWL (2700K-1800K)	15	917	69	791	53	862	57
90W15AWD (3000K-1800K)	15	904	60	756	50	850	57
90T17ATR (4000K-1800K)	17	1067	57	908	54	960	56
90T17ATH (5000K-2700K)	17	1049	60	900	53	944	56

CRI / WATTAGE PACKAGE	WATTAGE	ADJUSTABLE - 10° OPTIC - SOFT FOCUS LENS					
		2RA		2PA		2SA	
		DELIVERED	LPW	DELIVERED	LPW	DELIVERED	LPW
80S15C	15	491	33	415	28	453	30
90S15C	15	423	28	358	24	390	26
97S15C	15	365	24	309	21	337	22

### OUTPUT MULTIPLIER

CCT	CCT SCALE
2400K	0.76
2700K	0.97
3000K	1.000
3500K	1.03
4000K	1.08

### MEDIA LIGHT LOSS FACTOR

MEDIA	LIGHT LOSS FACTOR
NO LENS	1.15
CGL	1.03
SFL	1.00
FGL	0.79
FSFL	0.70
FSL	0.70
HCL	0.81

### TUNABLE WHITE MULTIPLIER

CCT	5000K-2700K	4000K-1800K
5000K	1.16	-
4000K	1.08	1.14
3500K	1.04	1.07
3000K	1.00	1.00
2700K	0.96	0.92
2400K	-	0.84
1800K	-	0.69

10° OPTIC SOFT FOCUS LENS	20° OPTIC SOFT FOCUS LENS	25° OPTIC SOFT FOCUS LENS	40° OPTIC SOFT FOCUS LENS	60° OPTIC SOFT FOCUS LENS
<13	<13	<13	<13	<13

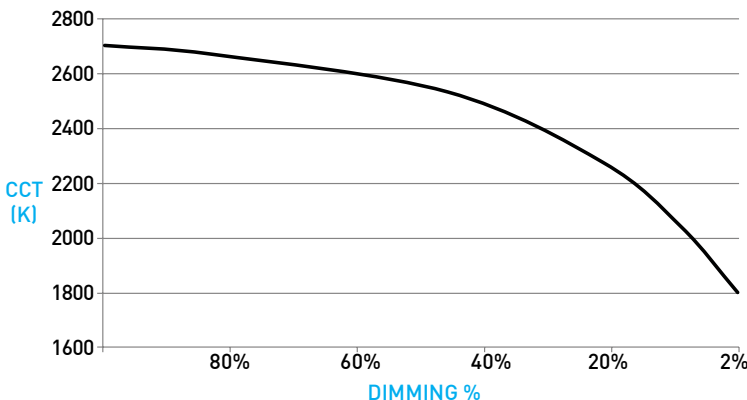
**Part L** 75+ LPW configurations comply with residential Part L  
95+ LPW configurations comply with commercial Part L

## WARM DIM PERFORMANCE - 20° OPTIC - SOFT FOCUS LENS

### INCANDESCENT PROFILE

90W15AL 2700K - 1800K	Full on 100%	Dimmed to 80%	Dimmed to 70%	Dimmed to 50%	Dimmed to 20%	Dimmed to 10%	Dimmed to 2%
CCT (K)	2700	2650	2625	2550	2200	1900	1800
Light Output (Lm)	656	525	459	328	131	66	13
Power (W)	11	9	8	6	2.2	1.1	0.2
Efficacy (LPW)	59	59	59	59	59	59	59

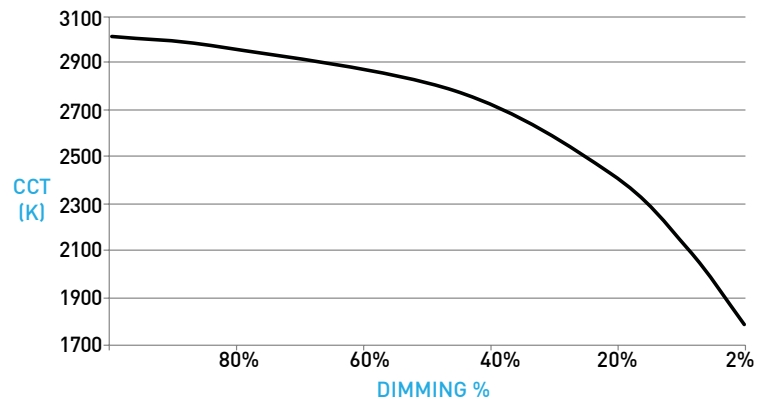
90W15AL 2700K - 1800K	Full on 100%	Dimmed to 80%	Dimmed to 70%	Dimmed to 50%	Dimmed to 20%	Dimmed to 10%	Dimmed to 2%
CCT (K)	2700	2650	2625	2550	2200	1900	1800
Light Output (Lm)	917	734	642	459	184	92	18
Power (W)	14	11	10	7	3	1.5	0.3
Efficacy (LPW)	64	64	64	64	64	64	64



### HALOGEN PROFILE

90W15AD 3000K - 1800K	Full on 100%	Dimmed to 80%	Dimmed to 70%	Dimmed to 50%	Dimmed to 20%	Dimmed to 10%	Dimmed to 2%
CCT (K)	3000	2950	2920	2775	2375	2000	1800
Light Output (Lm)	645	516	452	323	129	65	13
Power (W)	11	9	8	6	2.2	1.1	0.2
Efficacy (LPW)	58	58	58	58	58	58	58

90W15AD 3000K - 1800K	Full on 100%	Dimmed to 80%	Dimmed to 70%	Dimmed to 50%	Dimmed to 20%	Dimmed to 10%	Dimmed to 2%
CCT (K)	3000	2950	2920	2775	2375	2000	1800
Light Output (Lm)	904	723	632	457	180	90	18
Power (W)	14	11	10	7	3	1.5	0.3
Efficacy (LPW)	65	65	65	65	65	65	65



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## DOWNLIGHT FITTING

Hot-aim adjustment from below up to 45° tilt and 357° rotation, faceplate conceals adjustment mechanisms.

- A ADJUSTABLE YOKE**  
Adjustable yoke allows for quick exchange of optics and media. Accommodates up to 2 media; add 4.1mm to fitting height with use of each media.
- B OPTICS**  
Robust light engine with optimized optic pairing integrates Reflection, Refraction, and TIR offering 10°, 15°, 20°, 25°, 40° & 60° beams. 10° field reducer included with 10° optic.
- C TILT GUIDE**  
Features adjustment angles and allows for pre-aiming prior to insertion of fitting.
- D MEDIA**  
Soft Focus Lens standard; media must be specified. Lens is sealed in aperture in IP64 Wet location fitting. Secondary media available.
- E FITTING PLATE**  
Features removable faceplate providing access to adjustment mechanisms. Rare Earth magnets secure faceplate firmly to fitting mechanism and do not degrade over time.
  - IP10 Dry / Damp Location: Thickness measures 1.5mm
  - IP64 Wet Location: Sealed aperture and integral silicone gasket. 4.3mm return, installed as flange overlay only.
- F DOWNLIGHT FITTING ADAPTER**  
Included with fitting and required for installation. Uses (2) #6-32 flat-head screws with varying lengths to accommodate ceiling depth. Installed after ceiling is complete. Requires 92mm diameter cutout for flange overlay applications.
- F1 RETENTION**  
Integral ball plungers correspond to trim adapter ensuring snug fit against finished ceiling.

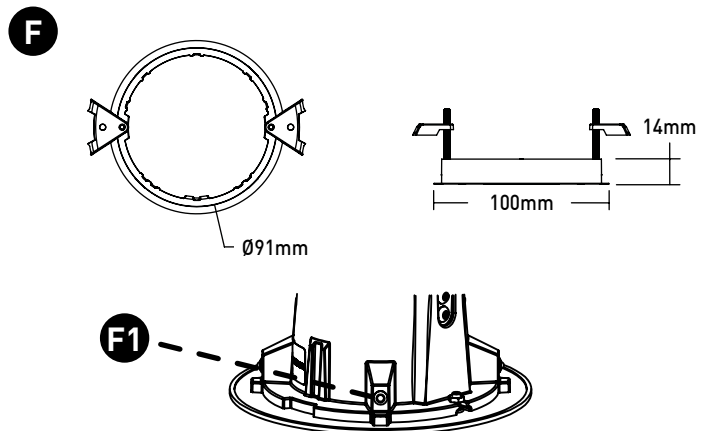
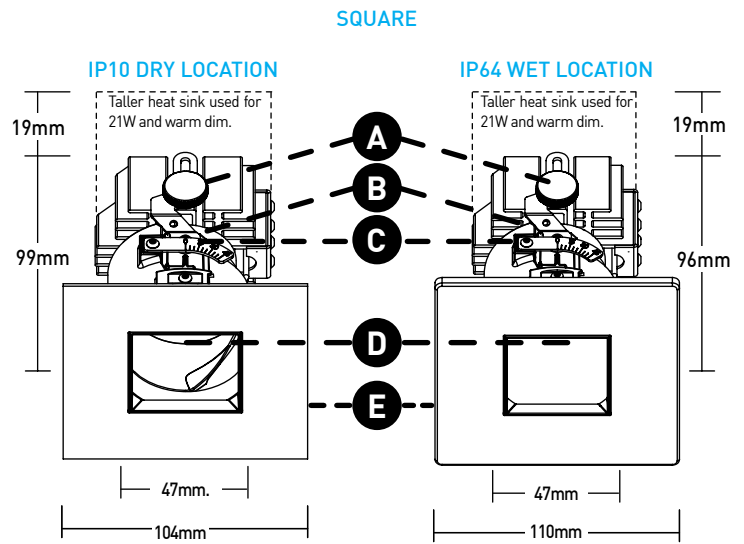
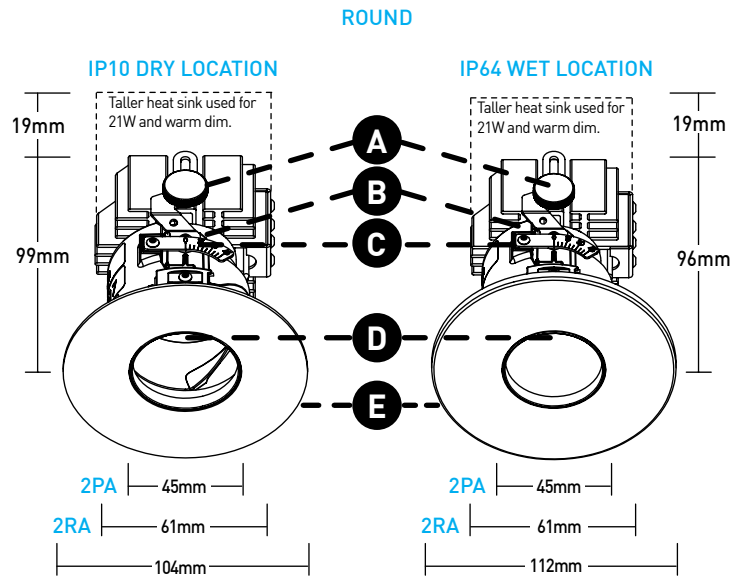
## TILT CHART

Chart references abbreviated ceiling thickness and use of 1 media.

CEILING THICKNESS	13mm "-0" collar	19mm "-1" collar	25mm "-2" collar	32mm "-2" collar
Low Flux	45°	45°	45°	38°
High Flux	45°	45°	45°	45°

CEILING THICKNESS	38mm "-3" collar	51mm "-3" collar	70mm "-4" collar	76mm "-4" collar
Low Flux	32°	18°	8°	6°
High Flux	38°	25°	13°	6°

## DIMENSIONS / DRAWINGS



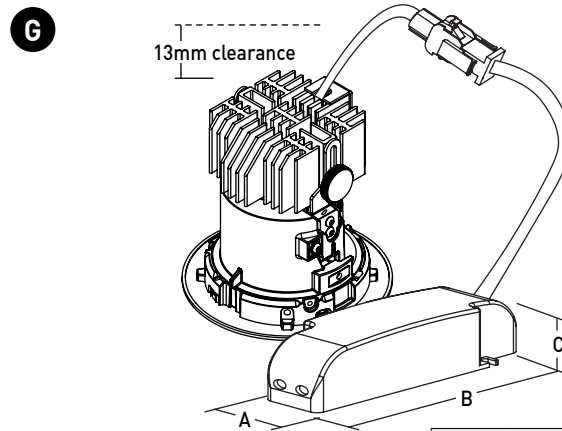
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## POWER SUPPLY

### G FITTING WITH TETHERED POWER SUPPLY

- Requires 113mm diameter cutout.
- Tethered power supply protected wiring and quick-connect plug between fitting and power supply.
- Minimum 13mm clearance from top of fitting.
- Minimum setback from combustible and non-combustible materials of 168mm radius from fitting centerline; minimum 76mm from surfaces of power supply if not situated within above noted radius from fitting centerline.
- Minimum additional 76mm setback from insulation material with max R-Value 30 from any surface of fitting assembly.
- Minimum additional 152mm setback from polycell spray foam insulation with max R-Value 60 from any surface of fitting assembly.
- Consult factory for spacing requirements for any installations exceeding R-Value 60.
- Do not install in environments where ambient temperatures exceed 40°C (104°F).

## DIMENSIONS / DRAWINGS



POWER SUPPLY DIMENSIONS			
Model	A	B	C
AN3			
LN1	41mm	210mm	34mm
EA1			
LA1			
ED1	76mm	152mm	31mm
LD1			

## ZERO-SIGHTLINE INSTALLATIONS

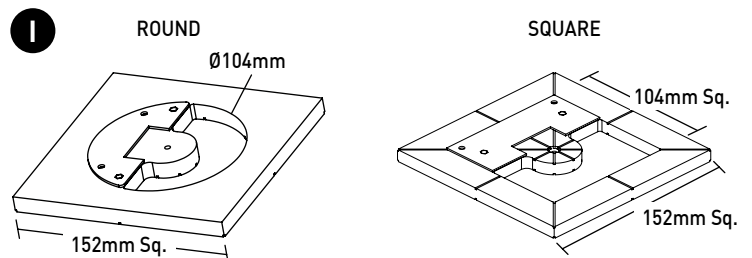
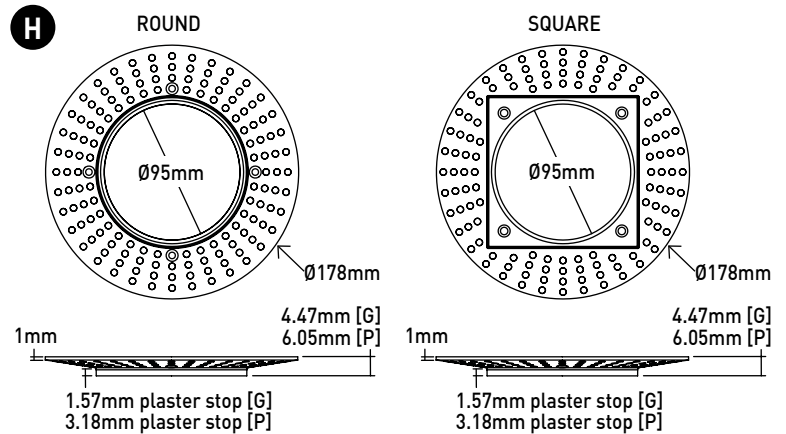
Fixture regresses flush with the finished ceiling plane when installed according to manufacturer instructions and finished ceiling conditions are met. Consult 2-Series Installation Guidelines for appropriate ceiling cutouts and instructions for proper Zero-Sightline installations.

### APPLIQUÉ

- Specified on Flange Configuration and ships with housing; ships separately on remodel installations.
- For use in sheetrock ceiling applications.
  - 1.57mm Appliqué (G Flange Configuration) recommended for gypsum ceiling installations and has plaster stop thickness of 1.57mm. Recommended for painted ceiling applications.
  - 3.18mm Appliqué (P Flange Configuration) offers double thick plaster stop of 3.18mm where a heavier application of mud is preferred. Recommended for colorfast and venetian plaster applications. Not recommended for stucco applications.

### ROUTER TOOL GUIDE

- Specified separately and used with Flange Overlay configurations.
- For use in wood ceiling applications.
- **DLA-RTG-2S-RD** or **DLA-RTG-2S-SQ** required for wood Zero-Sightline ceiling installations.
- Router tool guide is reusable and suitable for multiple fittings.



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## TECHNICAL INFORMATION

### CONSTRUCTION

**Downlight Fitting:** Steel and aluminum; extruded aluminum heat-sink; painted finishes are granulated powder coat. 304 corrosion resistant stainless steel faceplate for wet location fittings.

**Downlight Fitting Adapter:** High-impact composite and stainless steel.

**Appliqué:** Zinc alloy.

### LED

2-step MacAdam ellipse LED module available in 80+, 90+ and 97+ CRI configurations in color temperatures of 2700K, 3000K, 3500K and 4000K. 3-step MacAdam ellipse LED module available in 90+ CRI configuration in color temperatures of 2400K. Average rated lamp life of 50,000 hours. LED and driver assemblies are field-replaceable.

### WARM DIM LED

3-step MacAdam ellipse warm dim LED module available in 90+ CRI configuration. 3000K or 2700K at full brightness, warming to 1800K at full dim. Average rated lamp life of 50,000 hours. LED and driver assemblies are field-replaceable.

### TUNABLE WHITE LED

3-step MacAdam ellipse tunable white LED module available in 90+ CRI configuration. Features tuning range of 2700K to 5000K and 1800K to 4000K. Average rated lamp life of 50,000 hours. Driver assemblies are field-replaceable.

### POWER SUPPLY PERFORMANCE AND DIMMING INFORMATION

Power Supply	0-10V				DALI-2		
	EA1	LA1	AN3	LN1	ED1	LD1	DD1
Minimum °C	-20 °C	-20 °C	-20 °C	-20 °C	-20 °C	-20 °C	-20 °C
Maximum °C	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
Dimming %	0.1%	0.1%	1.0%	1.0%	0.1%	0.1%	0.1%

Note: For EA1 and LA1 drivers consult chart on page 7 to confirm appropriate dimming curve for compatibility with selected control.

### LISTING

CE Listed for IP10 Dry / Damp and IP64 Wet locations.

### DECLARE

LBC Red List Approved.

### PART L

Part L compliant for all 75+ LPW residential and 95+ LPW commercial configurations.

### WEIGHT

Fitting - 1.6 lbs max

Driver - 0.4 lbs

### LIMITED WARRANTY

Manufacturer's Limited Warranty guarantees product(s) listed to be free from defects in material and workmanship under normal use and service for 1-year. LED and power supplies are warranted to operate with 70% of original flux and remain within a range of 3 duv for a period of 5-years.

10-year Lutron Advantage limited warranty available on Lutron equipped systems. Warranty period begins from the date of shipment by Seller.

[Consult website for full warranty terms and conditions.](#)

### CHANGE LOG

- 1.01/12/2021: ADDED 2200K, 2700K-1800K WARM DIM AND 10 DEGREE OPTIC OFFERINGS.
- 10/08/2019: NEW CONSOLIDATED SPEC SHEETS WITH SINGLE NOMENCLATURE FOR SPECIFICATION.
- 10/17/2022: REMOVED 90WA13H 3200K-1800K WARM DIM AND ADDED 90WA12H 3000K-1800K WARM DIM.
- 08/08/2023: UPDATED WITH NEW LED AND OPTIC SYSTEM.
- 02/07/2024: ADDED 2400K, LOW WATTAGE, AND TUNABLE WHITE OFFERINGS.
- 2/15/2024: PART L COMPLIANCE ADDED
- 3/15/2024: ADDED 10 DEGREE FIELD REDUCER, UPDATED 10 DEGREE PERFORMANCE DATA



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## DIMMING COMPATIBILITY

### eldoLED DRIVER COMPATIBILITY

Power supply EA1 / LA1 Dimmer / Switch Control Manufacturer	Family/Model #
Busch-Jaeger	2112U-101
Jung	240-10
Leviton Lighting Controls	IP710-DLX
Lightolier Controls	ZP600FAM120
Lutron Electronics	Nova T® - NTFTV
Lutron Electronics	Diva® - DVTV
Lutron Electronics	Nova® - NFTV
Merten	5729
Pass & Seymour	CD4FB-W
The Watt Stopper	DCLV1
Sensor Switch	nI0 EZ
Synergy	ISD BC
Power supply EA1 / LA1 Lighting Control Systems	Family/Model #
Lutron Electronics	GrafixEye® GRX-TVI w GRX3503
Lutron Electronics	Energy Savr Node™ - QSN-4T16-S
Lutron Electronics	TVM2 Module
Crestron®	GLX-DIMFLV8
Crestron®	GLXP-DIMFLV8
Crestron®	GLPAC-DIMFLV4-*
Crestron®	GLPAC-DIMFLV8-*
Crestron®	GLPP-DIMFLVEX-PM
Crestron®	GLPP-1DIMFLV2EX-PM
Crestron®	GLPP-1DIMFLV3EX-PM
Crestron®	DIN-A08
Crestron®	DIN-4DIMFLV4
Crestron®	CLS-EXP-DIMFLV
Crestron®	CLCI-1DIMFLV2EX
ABB	SD/S 2.16.1