

Dense 178

Pendant

WISDOM LIGHT

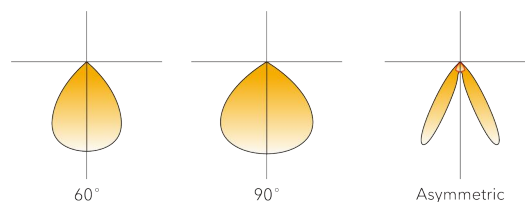


The Dense 178 series is the ultimate in minimalist simplicity, providing clean, uniform lines of illumination in any architectural environment. With advanced linear LED technology, the Dense 178 series delivers industry-leading efficacy and is completely customizable with options including aperture, continuous runs, and no length limitation. Robust construction and adaptable, modular components make installation simple and ensure straight runs. Dense 178 is available as a suspended fixture. Wattage and CCT are selectable, making this fixture the ultimate problem solver.

PRODUCT FEATURES

- Minimalist Design: Seamless continuous runs or individual fixtures.
- Selectable Options: 3 CCT & 3 wattage choices via dip switch.
- High Efficiency: 125 lm/W, CRI 80/90 available.
- Dimming Control: 0-10V continuous dimming, standard compatibility.
- Durable & Versatile: Aluminum housing, suspended mount, damp location rated
- Versatile Mounting: Available as a suspended fixture with aircraft cable.
- Durable Construction: Extruded aluminum housing with polyester powder coat.
- Long Lifespan: L90 at 61,000 hrs, L70 at 237,000 hrs.

BEAM ANGLES



Model	Length	Watt Select	Output Lumen	Nominal Efficacy	CCT Select	Voltage	Dimming	CRI
WL-13LSD4FT 50WB1D1HV(XXK-XXK-XXK)-YY-ZZ	4FT	30/40/50W	5100Lm/6800Lm/8500Lm	170lm/w	3000K 3500K 4000K	220-240V	0-10V (1-100%)	>80
WL-13LSD8FT 100WB1D1HV(XXK-XXK-XXK)-YY-ZZ	8FT	60/80/100W	10200Lm/13600Lm/17000Lm					

Order Guide

Sample Model#: **Dense-178-13LSD4FT50WB1D1HV(XXK-XXK-XXK)-YY-ZZ**

Dense 178	WL-13LSD								
Luminaire ID	Mode	Length	Wattage	Series	Dimming	Power Voltage	CCT	Finish	Installation mode
Dense 178	WL-13LSD	4FT	50W= 30W/40W/50W Select	B1= 3CCT Select, 3Watt Select (Internal dip-switch)	D1= 0-10V (1%-100%)	HV= 120-347V	(XXK-XXK-XXK)= 3000K/3500K/4000K CCT Select	YY= BK=Black WH=White SA=Silver CUS=Custom	ZZ= SP=Suspended air craft cable
		8FT	100W= 60W/80W/100W Select						

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Product Specifications

Construction

- Extruded aluminum housing
- Electrostatically applied polyester powder coat paint
- Standard 4'/8' fixtures available

Light Engine

- Standard 3 CCT Selectable options, 3000K/3500K/4000K
- CRI options of either ≥ 80 CRI or ≥ 90 CRI (Lumen output will be affected - please refer to the lumen adjustment factor table)

LED Drivers

- LED system coupled with electrical driver
- Traditional electronic drivers are available for 120- 277V/ 120-347V applications

Controls and Integrated Sensors

- Equipped standard with a 0-10V continuous dimming driver. Compatible with most standard dimming devices

Mounting

- Suspended



Lengths

- Available in 4ft, 8ft

Lumen Maintenance

- 90% (L90) of initial light output at 61,000+ hrs
- 70% (L70) of initial light output at 237,000+ hrs
- Derived from TM-21 standard @25°C for worst case operating conditions

Electrical

- Dimming provided as standard
- Dimming wires capped with wire-nuts for nondimming applications

Max number after interconnection

- 4FT= 7 units 8FT= 4 units
- Total connected load is <420W at 120V & <960W at 277V & <1200W at 347V

Weight

- Approximately 1.0 lbs per foot, Weight may vary depending on mounting and additional options selected

Environment

- Suited for damp location installations
- Operating temperature range: -25° C to 50° C

Approvals

- ETL - listed for damp locations
- Tested to IESNA LM-79 and LM-80

Warranty

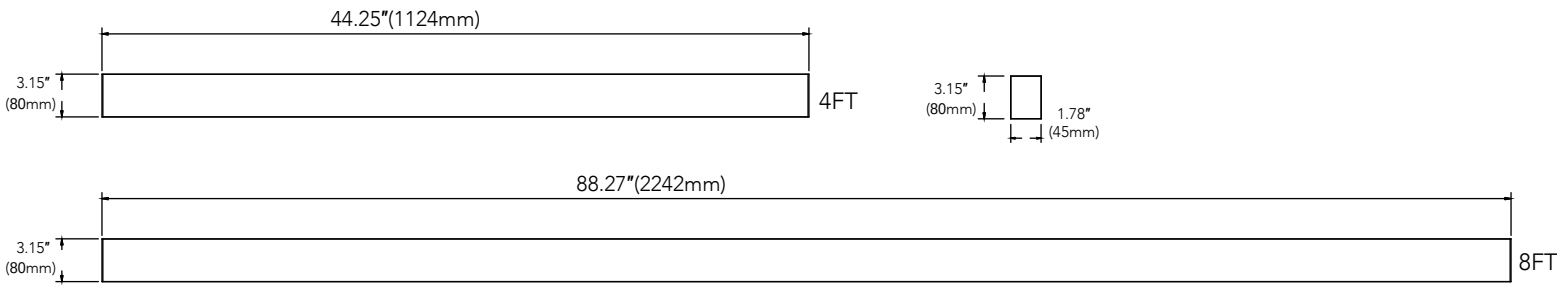
- Five year warranty standard. Optional ten year warranty available.

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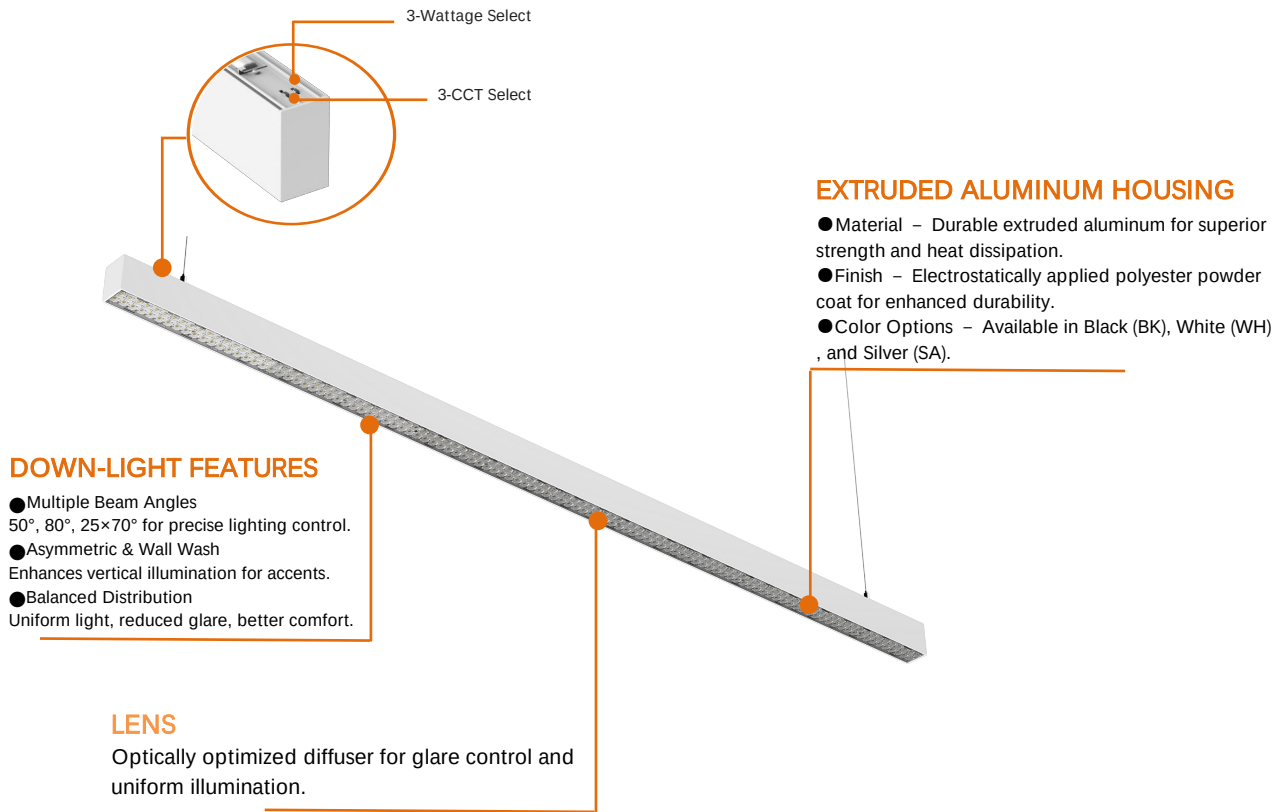


Dimension



MODEL	Length	Width	Height
WL-13LSD4FT50WB1D1EV(XXK-XXK-XXK)-YY-ZZ	44.25"(1124mm)	1.78" (45mm)	3.15" (80mm)
WL-13LSD8FT100WB1D1EV(XXK-XXK-XXK)-YY-ZZ	88.27"(2242mm)	1.78" (45mm)	3.15" (80mm)

Features



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Accessories

Lens	Mounting Options	Canopy Finish	Other Accessories
OLS=Optic lens	SCKB=9/16 Dropceiling 5" Slim Canopy	BC=Black Canopy	73AC-5C=7'5-Core 300V Cable
		WC=White Canopy	8EM=8W Internal EM
		SC=Sliver Canopy	LBKB=Linckble bracket



LBKB=Linckble bracket



8EM=8W Internal EM



73AC-5C=7'5-Core 300V Cable

Canopy Type Power feed/None Power feed

SCKB Slim D5" * H0.3"



Non Power feed



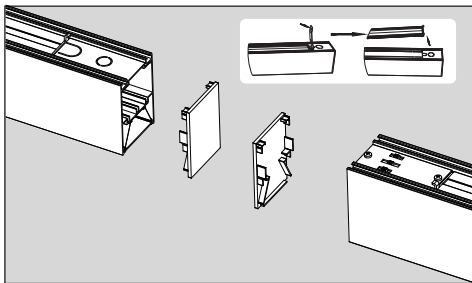
Power feed

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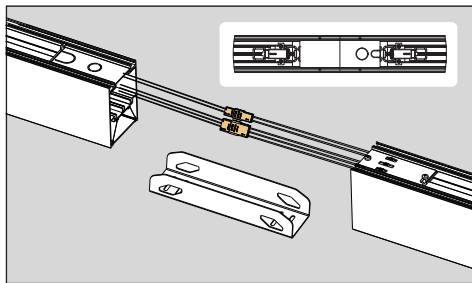
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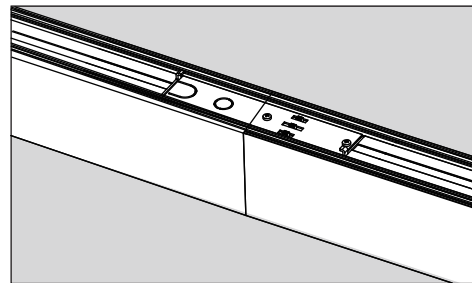
Quick linkable function



Step 1. Remove the end caps and open the upper modular with tool

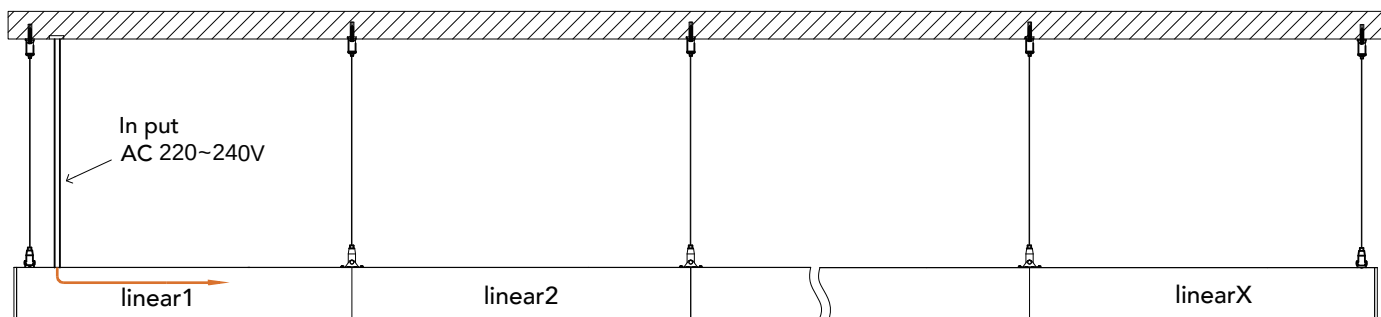


Step 2. Insert splicing bracket, Connect wiring via male/female quick connectors, Slide lamp together, and fasten bracket with included buckles

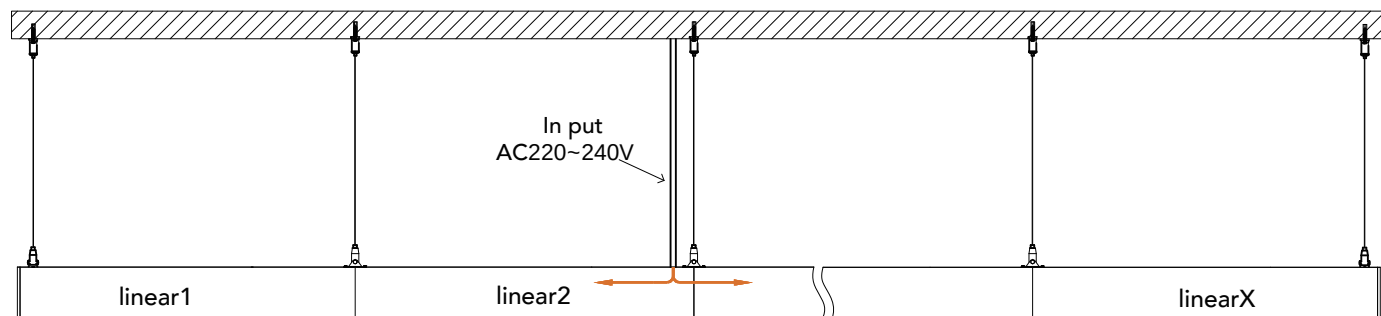


Step 3. Put the upper module assembly back together, and adjustable the aircraft cable to the target position

Single Direction



Multi-Direction



Max number after interconnection 4FT=7 units 8FT=4 units Total connected load is <420W at 220-240V

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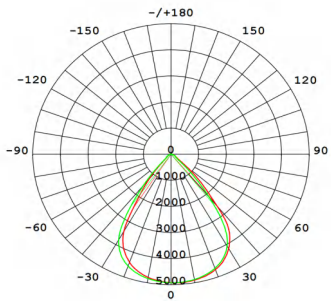
Performance

Lens	Lumen output
Down Optic lens	1600LM/FT,12.5W/FT

The above values are based on 3000K, white housing, and the highest wattage. All efficacy values are $\pm 5\%$ based on different CCT and lighting distributions. For other lenses, CCT, housing colors, etc., please refer to the IES file for details.

Dense 178-13LSD

Dense 178-13LSD/1.3FT/50W/RA80/3000K



AVERAGE BEAM ANGLE(50%):74.5 DEG

NOMINALFLUX(lm):7276.49,NOMINAL POWER(W):50W,lmax(cd) :4935,Efficay:132.54lm/W

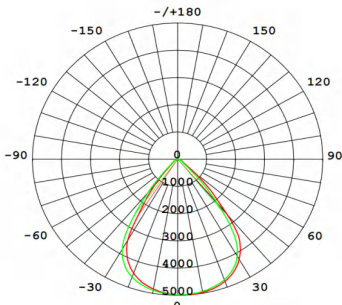
Zonal Flux Diagram					
γ	C0	C45	C90	C135	C180
10	4897	4890	4872	4837	4790
20	4699	4696	4649	4555	4404
30	4170	4209	4057	3907	3430
40	2606	3148	2129	2569	1225
50	725.7	1222	413.7	691.5	245.2
60	199.5	289.5	178.4	192.3	152.1
70	125.4	115.1	94.84	80.15	57.05
80	39.14	35.78	25.95	19.99	12.26
90	5.174	3.867	0.3327	0.2133	0.0340
DEG	LUMINOUSINTENSITY:cd/klm				

Zonal Lumens		
γ	Φ_{zone}	Φ_{total}
00-10	466.4	466.4
10-20	1338	1804
20-30	1976	3781
30-40	1961	5742
40-50	1013	6755
50-60	299.2	7054
60-70	134.6	7189
70-80	53.66	7242
80-90	10.74	7253
UNIT:lm/klm		

LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	4256	2344
80	4508	2988
75	5786	3957
70	7332	5546
65	8028	6721
60	7981	7136
55	10516	7728
50	22581	12871
45	43541	30250

Dense 178-13LSD

Dense 178-13LSD/1.3FT/50W/RA80/3500K



AVERAGE BEAM ANGLE(50%):74.5 DEG

NOMINALFLUX(lm):7368.31,NOMINAL POWER(W):50W,lmax(cd) :4997,Efficay:134.46lm/W

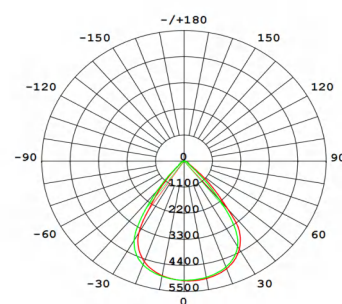
Zonal Flux Diagram					
γ	C0	C45	C90	C135	C180
10	4964	4958	4928	4891	4842
20	4775	4762	4709	4600	4448
30	4237	4266	4106	3938	3467
40	2645	3206	2162	2581	1233
50	742.3	1241	416.2	701.8	251.1
60	202.1	292.7	181.0	195.1	156.6
70	127.0	116.3	96.18	81.71	58.29
80	39.71	36.16	26.21	20.38	12.53
90	5.251	3.884	0.3207	0.2278	0.0411
DEG	LUMINOUSINTENSITY:cd/klm				

Zonal Lumens		
γ	Φ_{zone}	Φ_{total}
00-10	471.8	471.8
10-20	1353	1825
20-30	2000	3825
30-40	1984	5809
40-50	1029	6838
50-60	304.2	7142
60-70	136.9	7279
70-80	54.49	7333
80-90	10.89	7344
UNIT:lm/klm		

LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	4299	2384
80	4573	3019
75	5837	4023
70	7427	5624
65	8132	6819
60	8084	7239
55	10670	7821
50	23095	12951
45	44410	30550

Dense 178-13LSD

Dense 178-13LSD/1.3FT/50W/RA80/4000K



AVERAGE BEAM ANGLE(50%):74.5 DEG

NOMINALFLUX(lm):7430.35,NOMINAL POWER(W):50W,lmax(cd) :5055,Efficay:135.10lm/W

Zonal Flux Diagram					
γ	C0	C45	C90	C135	C180
10	5018	4998	4968	4931	4899
20	4818	4806	4743	4643	4504
30	4275	4306	4141	3979	3515
40	2648	3222	2156	2607	1266
50	722.6	1238	420.4	709.2	256.6
60	203.3	292.5	182.2	197.0	159.1
70	126.9	116.6	96.21	82.44	59.75
80	39.36	36.03	26.41	20.58	12.98
90	4.981	3.760	0.3255	0.2108	0.0509
DEG	LUMINOUSINTENSITY:cd/klm				

Zonal Lumens		
γ	Φ_{zone}	Φ_{total}
00-10	476.2	476.2
10-20	1366	1842
20-30	2018	3860
30-40	2004	5864
40-50	1035	6899
50-60	305.4	7204
60-70	137.9	7342
70-80	54.78	7397
80-90	10.92	7408
UNIT:lm/klm		

LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	4252	2385
80	4534	3041
75	5809	4042
70	7423	5626
65	8162	6833
60	8130	7288
55	10588	7906
50	22484	13080
45	43971	30468