

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P242497

Luminaire Tested: S123DRP-S560D830-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242497
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-15)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DRP-S560D830-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

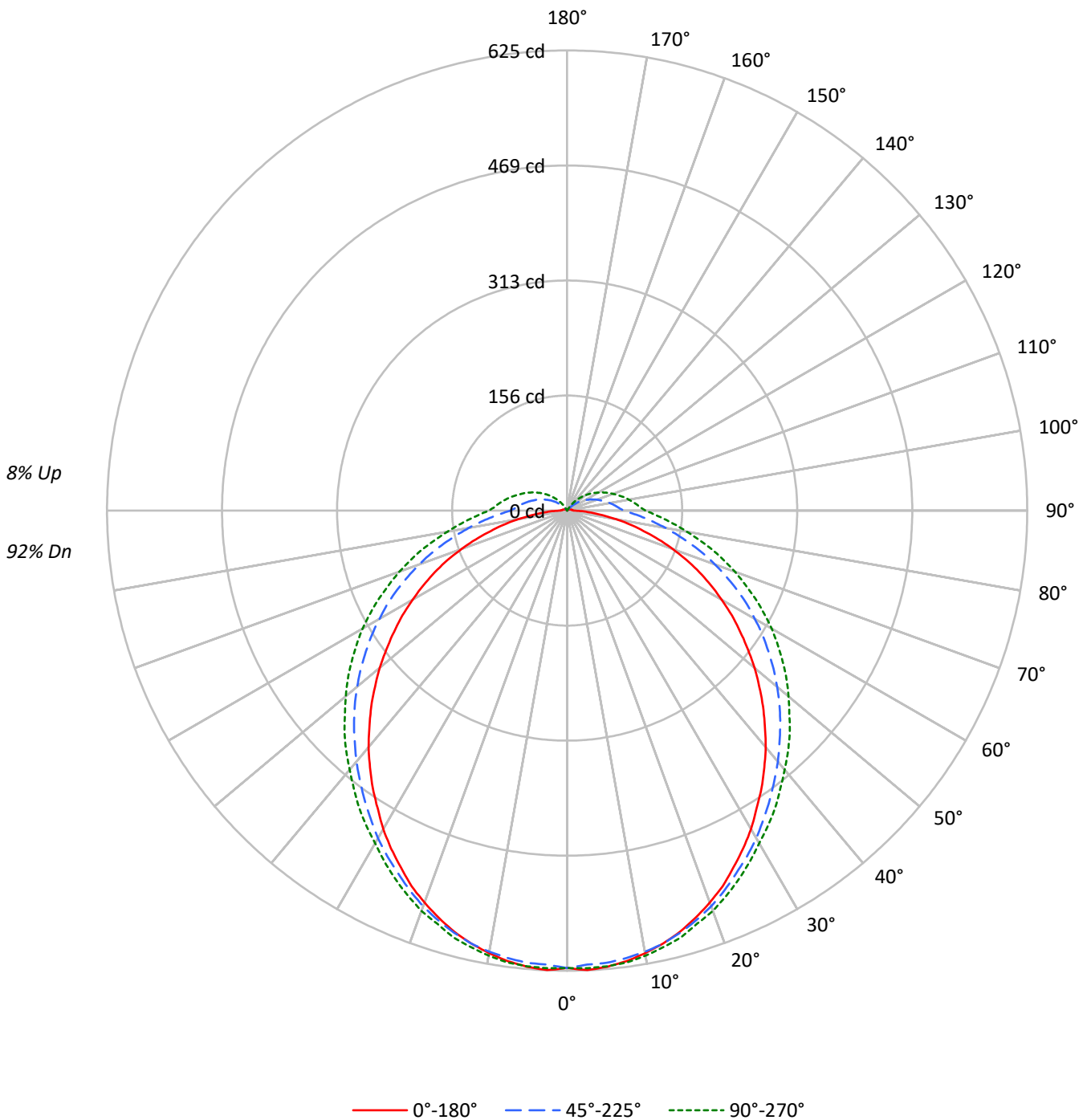
Lumens per Lamp: N/A
Luminaire Lumens: 2088.0 lumens
Efficiency: N/A
Efficacy: 111.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	117	117	117	117	113	113	113	113	106	106	106	100	100	100	94	94	94	92
1	105	100	95	90	102	97	92	88	91	87	84	85	82	80	80	78	76	73
2	95	86	79	72	92	83	77	71	79	73	68	74	69	65	70	66	63	60
3	86	75	67	60	83	73	65	59	69	62	56	65	59	54	61	56	52	50
4	79	66	57	50	76	64	56	49	61	54	48	57	51	46	54	49	45	42
5	72	59	50	43	70	58	49	42	54	47	41	52	45	40	49	43	39	36
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	44	38	34	32
7	62	48	39	33	60	47	38	32	45	37	32	42	36	31	40	35	30	28
8	58	44	35	29	56	43	35	29	41	33	28	39	32	28	37	31	27	25
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	28	24	22
10	50	37	29	24	49	36	29	24	35	28	23	33	27	23	32	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7531	7531	7531
5°	7554	7327	7327
10°	7485	7145	7100
15°	7389	6941	6856
20°	7251	6712	6591
25°	7079	6449	6315
30°	6905	6213	6036
35°	6709	5963	5811
40°	6522	5735	5571
45°	6315	5516	5377
50°	6110	5299	5164
55°	5884	5076	4970
60°	5663	4850	4772
65°	5437	4608	4536
70°	5096	4336	4296
75°	4665	4025	4047
80°	4168	3715	3763
85°	3706	3480	3577

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 6315 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	58.9	2.8
10°-20°	168.0	8.0
20°-30°	251.2	12.0
30°-40°	300.0	14.4
40°-50°	313.9	15.0
50°-60°	294.5	14.1
60°-70°	246.0	11.8
70°-80°	175.9	8.4
80°-90°	104.7	5.0
90°-100°	65.8	3.1
100°-110°	48.4	2.3
110°-120°	32.3	1.5
120°-130°	18.4	0.9
130°-140°	8.3	0.4
140°-150°	1.7	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	478.2	22.9
0°-40°	778.2	37.3
0°-60°	1386.5	66.4
0°-90°	1913.2	91.6
90°-120°	146.4	7.0
90°-150°	174.8	8.4
90°-180°	175.0	8.4
0°-180°	2088.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	621	621	621	621	621	
5°	622	621	616	622	621	59
15°	592	594	594	600	600	167
25°	535	541	543	552	552	246
35°	460	471	480	490	493	288
45°	376	392	409	422	428	290
55°	287	309	334	352	357	257
65°	198	225	254	275	282	196
75°	108	139	173	196	204	115
85°	33	67	103	126	133	34
90°	9	42	76	100	106	6
95°	7	34	67	88	95	6
105°	5	22	51	70	76	5
115°	3	12	36	52	58	4
125°	2	2	22	36	41	2
135°	1	1	8	20	24	1
145°	1	0	0	5	8	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	621.3	621.3	621.3	621.3	621.3
2.5°	624.7	622.6	617.2	622.6	622.0
5°	622.0	620.6	616.5	622.0	621.3
7.5°	617.2	617.2	613.2	619.9	619.2
10°	610.4	611.8	608.4	615.2	613.8
12.5°	602.3	604.4	602.3	608.4	607.1
15°	592.2	594.2	593.5	600.3	599.6
17.5°	580.0	584.1	583.4	589.5	588.1
20°	566.5	570.5	571.9	578.0	578.6
22.5°	552.2	556.3	558.3	566.5	565.8
25°	534.6	541.4	543.4	552.2	552.2
27.5°	517.7	525.2	529.2	536.7	537.4
30°	499.5	508.3	513.7	521.8	521.8
32.5°	479.2	489.3	496.7	505.5	507.6
35°	460.2	471.0	479.8	490.0	492.7
37.5°	439.9	452.1	462.2	473.7	475.8
40°	419.6	431.8	445.3	456.8	459.5
42.5°	397.3	412.8	427.0	439.9	444.0
45°	376.3	392.5	409.4	422.3	427.7
47.5°	354.0	372.2	391.2	405.4	409.4
50°	332.3	351.2	372.2	387.8	392.5
52.5°	309.3	329.6	353.3	369.5	375.6
55°	287.0	309.3	333.6	351.9	357.3
57.5°	265.3	288.3	314.7	333.0	339.1
60°	242.3	266.6	294.4	313.3	320.8
62.5°	220.6	245.7	275.4	294.4	301.2
65°	198.3	224.7	254.5	274.8	281.5
67.5°	176.0	203.7	233.5	255.8	261.2
70°	152.3	181.4	213.9	235.5	242.3
72.5°	130.6	159.7	193.6	215.9	222.7
75°	107.6	139.4	173.3	195.6	203.7
77.5°	88.0	119.8	153.6	177.3	183.4
80°	67.0	100.2	135.4	158.4	165.1
82.5°	48.7	82.6	118.4	141.4	148.2
85°	33.2	67.0	102.9	125.9	132.6
87.5°	20.3	54.1	88.7	111.7	118.4
90°	8.8	42.0	76.5	99.5	106.3
92.5°	8.1	37.2	71.1	93.4	99.5
95°	7.4	33.8	67.0	88.0	94.7
97.5°	6.8	31.1	62.9	83.2	90.0
100°	6.1	27.7	58.9	78.5	85.3
102.5°	5.4	24.4	54.8	73.8	80.5
105°	5.4	21.7	50.8	69.7	75.8
107.5°	4.7	18.9	46.7	65.0	71.1
110°	4.1	16.2	43.3	60.9	66.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	4.1	13.5	39.3	56.2	62.3
115°	3.4	11.5	35.9	52.1	57.5
117.5°	3.4	8.8	31.8	48.1	53.5
120°	2.7	6.1	28.4	44.0	48.7
122.5°	2.7	4.1	25.0	39.9	44.7
125°	2.0	2.0	21.7	35.9	40.6
127.5°	2.0	1.4	18.3	31.8	36.5
130°	2.0	1.4	14.9	27.7	31.8
132.5°	1.4	1.4	11.5	23.7	28.4
135°	1.4	0.7	8.1	20.3	23.7
137.5°	1.4	0.7	5.4	16.2	19.6
140°	0.7	0.7	2.7	12.9	16.2
142.5°	0.7	0.0	0.0	8.8	12.2
145°	0.7	0.0	0.0	5.4	8.1
147.5°	0.0	0.0	0.0	2.0	4.7
150°	0.0	0.0	0.0	0.0	1.4
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0



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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	16.07	17.57	16.56	18.05	18.57	18.06	19.57	18.55	20.05	20.57
	3H	17.62	19.00	18.13	19.49	20.04	20.44	21.81	20.94	22.30	22.86
	4H	18.15	19.45	18.67	19.95	20.52	21.55	22.85	22.08	23.36	23.93
	6H	18.49	19.70	19.03	20.22	20.81	22.66	23.87	23.20	24.39	24.98
	8H	18.58	19.74	19.12	20.28	20.87	23.22	24.38	23.77	24.92	25.51
	12H	18.63	19.74	19.18	20.27	20.90	23.82	24.93	24.38	25.47	26.09
4H	2H	16.97	18.27	17.50	18.78	19.35	18.52	19.82	19.05	20.33	20.90
	3H	18.78	19.88	19.31	20.43	21.02	21.12	22.22	21.65	22.77	23.37
	4H	19.44	20.45	19.99	21.01	21.64	22.38	23.40	22.94	23.96	24.58
	6H	19.91	20.81	20.49	21.39	22.03	23.67	24.56	24.24	25.15	25.78
	8H	20.05	20.89	20.63	21.47	22.12	24.32	25.16	24.90	25.74	26.39
	12H	20.14	20.90	20.74	21.51	22.17	25.03	25.80	25.64	26.41	27.06
8H	4H	20.07	20.91	20.65	21.50	22.15	22.61	23.45	23.19	24.03	24.68
	6H	20.73	21.44	21.34	22.07	22.72	24.05	24.76	24.66	25.39	26.04
	8H	20.96	21.60	21.59	22.24	22.91	24.83	25.47	25.45	26.10	26.77
	12H	21.13	21.71	21.76	22.33	23.07	25.71	26.28	26.34	26.91	27.64
12H	4H	20.23	20.99	20.83	21.60	22.26	22.62	23.38	23.22	24.00	24.65
	6H	20.97	21.61	21.60	22.25	22.92	24.09	24.73	24.72	25.37	26.04
	8H	21.30	21.87	21.92	22.49	23.23	24.93	25.51	25.56	26.13	26.86