

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: P242492

Luminaire Tested: S123DRP-S560D927-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242492
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-S560D927-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

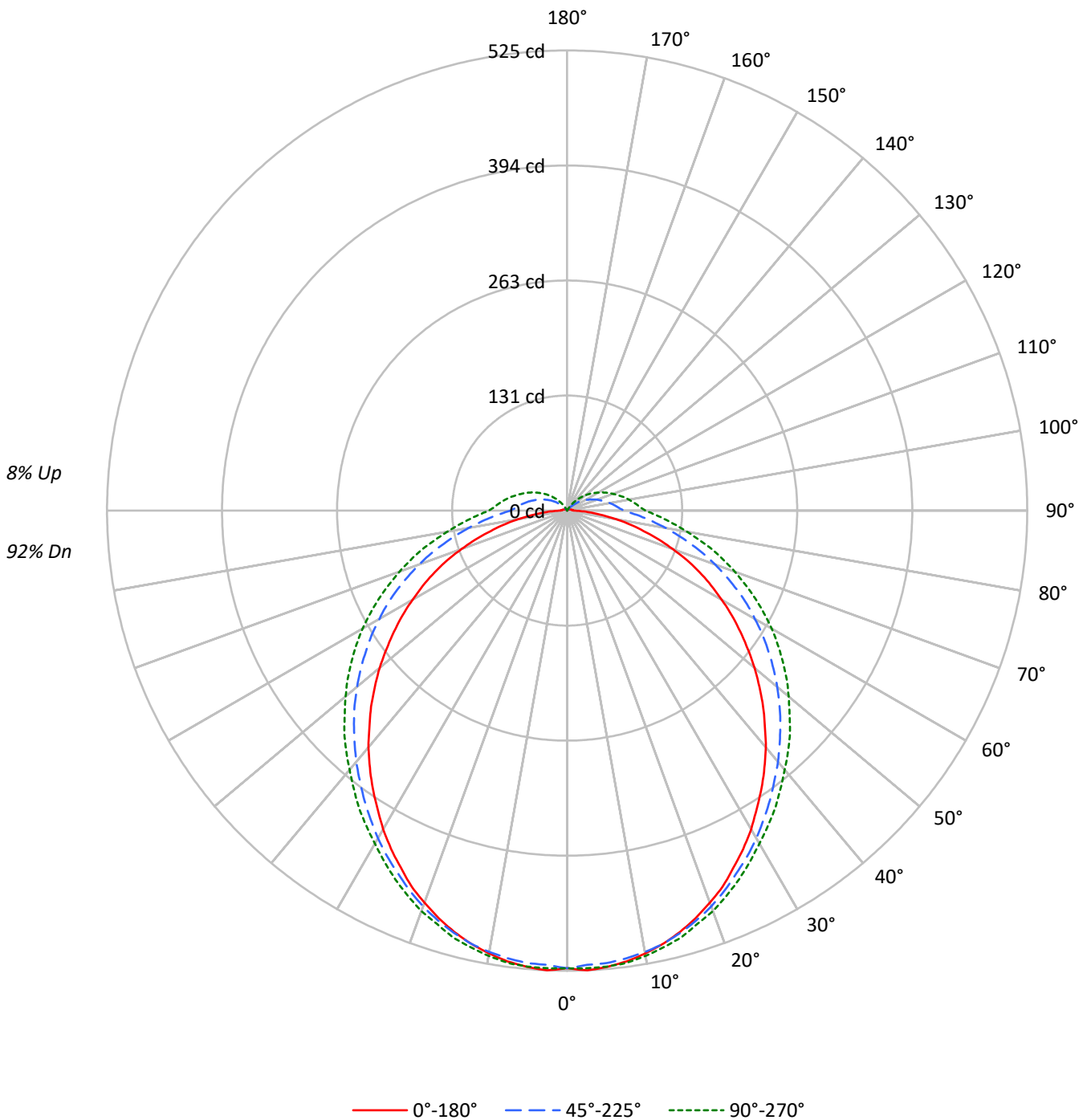
Lumens per Lamp: N/A
Luminaire Lumens: 1754.9 lumens
Efficiency: N/A
Efficacy: 93.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (Ain): 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	50	30	10	0	
RCR																						
0	117	117	117	117	113	113	113	113	106	106	106	100	100	100	94	94	94	94	94	94	92	
1	105	100	95	90	102	97	92	88	91	87	84	85	82	80	80	78	76	76	76	76	73	
2	95	86	79	72	92	83	77	71	79	73	68	74	69	65	70	66	63	63	63	63	60	
3	86	75	67	60	83	73	65	59	69	62	56	65	59	54	61	56	52	52	52	52	50	
4	79	66	57	50	76	64	56	49	61	54	48	57	51	46	54	49	45	45	45	45	42	
5	72	59	50	43	70	58	49	42	54	47	41	52	45	40	49	43	39	39	39	39	36	
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	44	38	34	34	34	34	32	
7	62	48	39	33	60	47	38	32	45	37	32	42	36	31	40	35	30	30	30	30	28	
8	58	44	35	29	56	43	35	29	41	33	28	39	32	28	37	31	27	27	27	27	25	
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	28	24	24	24	24	22	
10	50	37	29	24	49	36	29	24	35	28	23	33	27	23	32	26	22	22	22	22	20	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6330	6330	6330
5°	6348	6158	6158
10°	6291	6006	5967
15°	6210	5834	5763
20°	6094	5640	5540
25°	5951	5421	5307
30°	5804	5221	5074
35°	5639	5012	4884
40°	5482	4821	4682
45°	5308	4636	4519
50°	5135	4453	4340
55°	4945	4266	4177
60°	4759	4075	4010
65°	4570	3873	3813
70°	4283	3643	3610
75°	3919	3382	3402
80°	3503	3122	3164
85°	3115	2925	3007

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5308 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.5	2.8
10°-20°	141.2	8.0
20°-30°	211.2	12.0
30°-40°	252.1	14.4
40°-50°	263.8	15.0
50°-60°	247.5	14.1
60°-70°	206.8	11.8
70°-80°	147.8	8.4
80°-90°	88.0	5.0
90°-100°	55.3	3.2
100°-110°	40.6	2.3
110°-120°	27.1	1.5
120°-130°	15.5	0.9
130°-140°	6.9	0.4
140°-150°	1.5	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	401.9	22.9
0°-40°	654.0	37.3
0°-60°	1165.4	66.4
0°-90°	1607.9	91.6
90°-120°	123.1	7.0
90°-150°	146.9	8.4
90°-180°	147.0	8.4
0°-180°	1754.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	522	522	522	522	522	
5°	523	522	518	523	522	50
15°	498	499	499	504	504	140
25°	449	455	457	464	464	207
35°	387	396	403	412	414	242
45°	316	330	344	355	360	244
55°	241	260	280	296	300	216
65°	167	189	214	231	237	165
75°	90	117	146	164	171	97
85°	28	56	86	106	112	29
90°	7	35	64	84	89	5
95°	6	28	56	74	80	5
105°	5	18	43	59	64	5
115°	3	10	30	44	48	3
125°	2	2	18	30	34	2
135°	1	1	7	17	20	1
145°	1	0	0	5	7	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°	522.2	522.2	522.2	522.2	522.2
2.5°	525.0	523.3	518.8	523.3	522.7
5°	522.7	521.6	518.2	522.7	522.2
7.5°	518.8	518.8	515.3	521.0	520.5
10°	513.1	514.2	511.4	517.0	515.9
12.5°	506.2	507.9	506.2	511.4	510.2
15°	497.7	499.4	498.8	504.5	504.0
17.5°	487.5	490.9	490.3	495.4	494.3
20°	476.1	479.5	480.6	485.8	486.3
22.5°	464.1	467.6	469.3	476.1	475.5
25°	449.4	455.0	456.8	464.1	464.1
27.5°	435.1	441.4	444.8	451.1	451.6
30°	419.8	427.2	431.7	438.6	438.6
32.5°	402.7	411.2	417.5	424.9	426.6
35°	386.8	395.9	403.3	411.8	414.1
37.5°	369.7	380.0	388.5	398.2	399.9
40°	352.7	362.9	374.3	383.9	386.2
42.5°	333.9	347.0	358.9	369.7	373.1
45°	316.3	329.9	344.1	354.9	359.5
47.5°	297.5	312.8	328.8	340.7	344.1
50°	279.3	295.2	312.8	325.9	329.9
52.5°	259.9	277.0	296.9	310.6	315.7
55°	241.2	259.9	280.4	295.8	300.3
57.5°	223.0	242.3	264.5	279.9	285.0
60°	203.6	224.1	247.4	263.4	269.6
62.5°	185.4	206.5	231.5	247.4	253.1
65°	166.7	188.8	213.9	230.9	236.6
67.5°	147.9	171.2	196.2	215.0	219.6
70°	128.0	152.4	179.7	197.9	203.6
72.5°	109.8	134.2	162.7	181.4	187.1
75°	90.4	117.2	145.6	164.4	171.2
77.5°	73.9	100.7	129.1	149.0	154.1
80°	56.3	84.2	113.8	133.1	138.8
82.5°	41.0	69.4	99.5	118.9	124.6
85°	27.9	56.3	86.5	105.8	111.5
87.5°	17.1	45.5	74.5	93.9	99.5
90°	7.4	35.3	64.3	83.6	89.3
92.5°	6.8	31.3	59.7	78.5	83.6
95°	6.3	28.4	56.3	73.9	79.6
97.5°	5.7	26.2	52.9	70.0	75.7
100°	5.1	23.3	49.5	66.0	71.7
102.5°	4.6	20.5	46.1	62.0	67.7
105°	4.6	18.2	42.7	58.6	63.7
107.5°	4.0	15.9	39.2	54.6	59.7
110°	3.4	13.7	36.4	51.2	55.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.4	11.4	33.0	47.2	52.3
115°	2.8	9.7	30.1	43.8	48.3
117.5°	2.8	7.4	26.7	40.4	44.9
120°	2.3	5.1	23.9	37.0	41.0
122.5°	2.3	3.4	21.0	33.6	37.5
125°	1.7	1.7	18.2	30.1	34.1
127.5°	1.7	1.1	15.4	26.7	30.7
130°	1.7	1.1	12.5	23.3	26.7
132.5°	1.1	1.1	9.7	19.9	23.9
135°	1.1	0.6	6.8	17.1	19.9
137.5°	1.1	0.6	4.6	13.7	16.5
140°	0.6	0.6	2.3	10.8	13.7
142.5°	0.6	0.0	0.0	7.4	10.2
145°	0.6	0.0	0.0	4.6	6.8
147.5°	0.0	0.0	0.0	1.7	4.0
150°	0.0	0.0	0.0	0.0	1.1
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	15.46	16.97	15.95	17.45	17.96	17.46	18.97	17.95	19.45	19.96
	3H	17.02	18.39	17.52	18.88	19.44	19.84	21.21	20.34	21.70	22.26
	4H	17.54	18.84	18.06	19.35	19.92	20.95	22.25	21.47	22.76	23.33
	6H	17.89	19.10	18.42	19.62	20.20	22.06	23.27	22.59	23.79	24.37
	8H	17.97	19.13	18.52	19.68	20.27	22.61	23.77	23.16	24.32	24.91
	12H	18.02	19.13	18.58	19.67	20.29	23.22	24.33	23.77	24.87	25.49
4H	2H	16.37	17.67	16.89	18.18	18.75	17.92	19.22	18.44	19.73	20.30
	3H	18.17	19.28	18.71	19.83	20.42	20.51	21.62	21.05	22.17	22.76
	4H	18.83	19.85	19.39	20.41	21.03	21.78	22.79	22.34	23.35	23.98
	6H	19.31	20.20	19.88	20.79	21.43	23.06	23.96	23.64	24.54	25.18
	8H	19.45	20.29	20.03	20.87	21.52	23.71	24.55	24.29	25.14	25.79
	12H	19.53	20.29	20.13	20.91	21.56	24.43	25.19	25.03	25.81	26.46
8H	4H	19.47	20.31	20.05	20.89	21.54	22.01	22.85	22.59	23.43	24.08
	6H	20.13	20.84	20.74	21.46	22.12	23.45	24.16	24.06	24.78	25.44
	8H	20.36	21.00	20.98	21.64	22.30	24.22	24.86	24.85	25.50	26.17
	12H	20.53	21.10	21.16	21.73	22.46	25.11	25.68	25.73	26.30	27.04
12H	4H	19.62	20.39	20.23	21.00	21.66	22.02	22.78	22.62	23.39	24.05
	6H	20.37	21.01	20.99	21.65	22.31	23.49	24.13	24.11	24.77	25.43
	8H	20.69	21.26	21.32	21.89	22.62	24.33	24.90	24.96	25.53	26.26