

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: P242504

Luminaire Tested: S123DRP-S1165D835-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242504
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-S1165D835-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

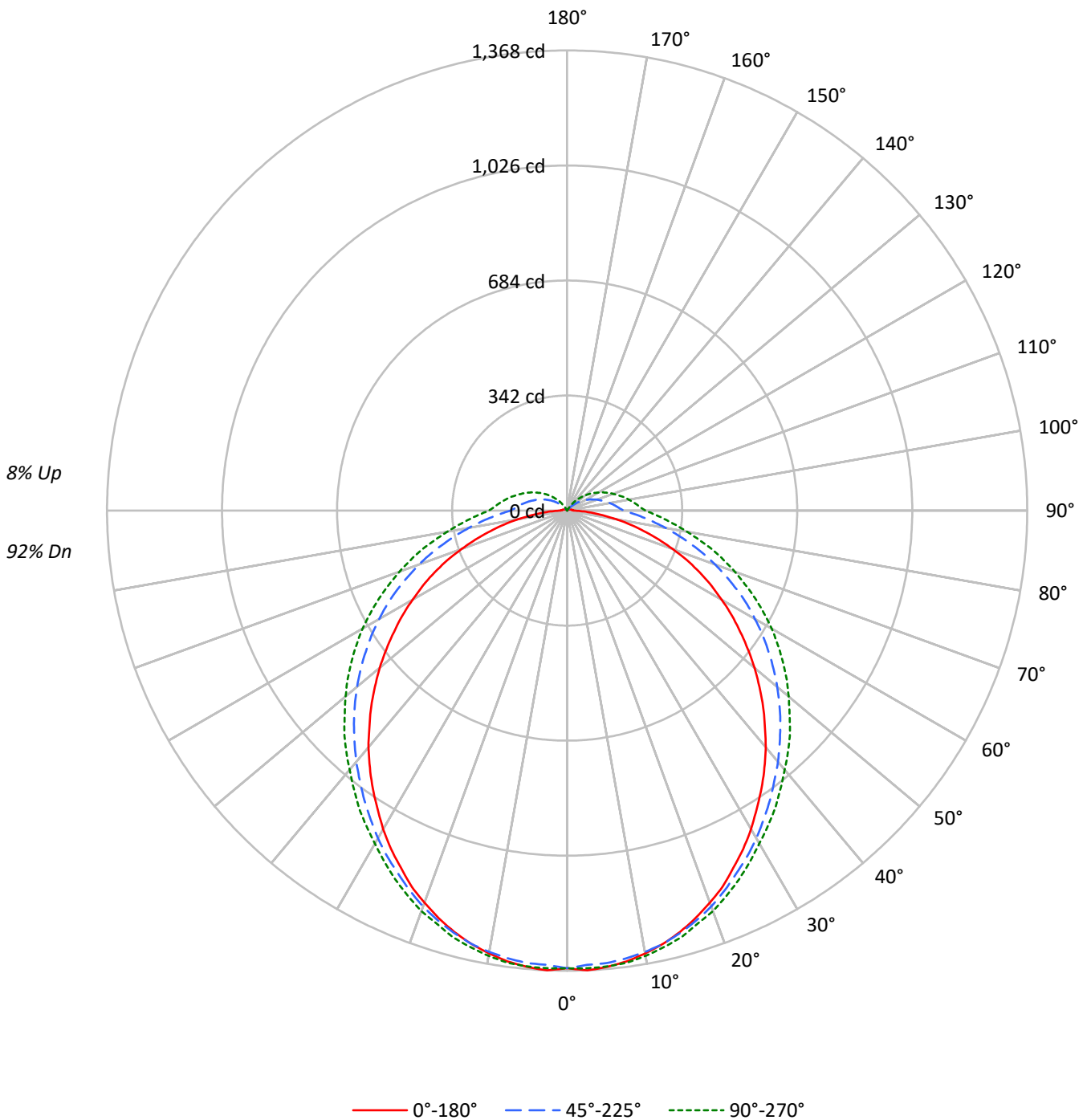
Lumens per Lamp: N/A
Luminaire Lumens: 4572.5 lumens
Efficiency: N/A
Efficacy: 111.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 41.1
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°	16491	16491	16491
5°	16541	16046	16044
10°	16391	15648	15548
15°	16180	15202	15015
20°	15877	14698	14435
25°	15503	14123	13830
30°	15122	13605	13219
35°	14691	13059	12726
40°	14282	12561	12200
45°	13828	12081	11775
50°	13380	11604	11309
55°	12884	11118	10884
60°	12401	10620	10449
65°	11904	10091	9935
70°	11160	9493	9407
75°	10218	8812	8864
80°	9127	8131	8243
85°	8105	7619	7835

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 13828 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	129.1	2.8
10°-20°	367.9	8.0
20°-30°	550.2	12.0
30°-40°	656.9	14.4
40°-50°	687.3	15.0
50°-60°	645.0	14.1
60°-70°	538.7	11.8
70°-80°	385.2	8.4
80°-90°	229.2	5.0
90°-100°	144.0	3.1
100°-110°	105.9	2.3
110°-120°	70.7	1.5
120°-130°	40.3	0.9
130°-140°	18.1	0.4
140°-150°	3.8	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1047.2	22.9
0°-40°	1704.1	37.3
0°-60°	3036.5	66.4
0°-90°	4189.7	91.6
90°-120°	320.6	7.0
90°-150°	382.8	8.4
90°-180°	383.0	8.4
0°-180°	4572.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1360	1360	1360	1360	1360	
5°	1362	1359	1350	1362	1360	129
15°	1297	1301	1300	1315	1313	365
25°	1171	1186	1190	1209	1209	540
35°	1008	1032	1051	1073	1079	630
45°	824	860	897	925	937	635
55°	628	677	731	771	782	563
65°	434	492	557	602	616	429
75°	236	305	379	428	446	252
85°	73	147	225	276	290	75
90°	19	92	168	218	233	14
95°	16	74	147	193	208	13
105°	12	47	111	153	166	12
115°	7	25	79	114	126	8
125°	4	4	47	79	89	4
135°	3	2	18	44	52	2
145°	2	0	0	12	18	1
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°	1360.5	1360.5	1360.5	1360.5	1360.5
2.5°	1368.0	1363.5	1351.7	1363.5	1362.0
5°	1362.0	1359.1	1350.2	1362.0	1360.5
7.5°	1351.7	1351.7	1342.8	1357.6	1356.1
10°	1336.8	1339.8	1332.4	1347.2	1344.2
12.5°	1319.0	1323.5	1319.0	1332.4	1329.4
15°	1296.8	1301.3	1299.8	1314.6	1313.1
17.5°	1270.1	1279.0	1277.6	1290.9	1287.9
20°	1240.5	1249.4	1252.4	1265.7	1267.2
22.5°	1209.4	1218.3	1222.7	1240.5	1239.0
25°	1170.8	1185.7	1190.1	1209.4	1209.4
27.5°	1133.8	1150.1	1159.0	1175.3	1176.8
30°	1093.8	1113.0	1124.9	1142.7	1142.7
32.5°	1049.3	1071.5	1087.8	1107.1	1111.6
35°	1007.8	1031.5	1050.8	1073.0	1079.0
37.5°	963.4	990.0	1012.3	1037.5	1041.9
40°	918.9	945.6	975.2	1000.4	1006.3
42.5°	870.0	904.1	935.2	963.4	972.2
45°	824.0	859.6	896.7	924.8	936.7
47.5°	775.1	815.1	856.6	887.8	896.7
50°	727.7	769.2	815.1	849.2	859.6
52.5°	677.3	721.8	773.6	809.2	822.6
55°	628.4	677.3	730.7	770.7	782.5
57.5°	581.0	631.4	689.2	729.2	742.5
60°	530.6	583.9	644.7	686.2	702.5
62.5°	483.2	538.0	603.2	644.7	659.5
65°	434.2	492.0	557.3	601.7	616.5
67.5°	385.3	446.1	511.3	560.2	572.1
70°	333.5	397.2	468.3	515.8	530.6
72.5°	286.0	349.8	423.9	472.8	487.6
75°	235.7	305.3	379.4	428.3	446.1
77.5°	192.7	262.3	336.4	388.3	401.6
80°	146.7	219.3	296.4	346.8	361.6
82.5°	106.7	180.8	259.4	309.8	324.6
85°	72.6	146.7	225.3	275.7	290.5
87.5°	44.5	118.6	194.2	244.5	259.4
90°	19.3	91.9	167.5	217.9	232.7
92.5°	17.8	81.5	155.6	204.5	217.9
95°	16.3	74.1	146.7	192.7	207.5
97.5°	14.8	68.2	137.8	182.3	197.1
100°	13.3	60.8	128.9	171.9	186.7
102.5°	11.9	53.4	120.0	161.5	176.4
105°	11.9	47.4	111.2	152.7	166.0
107.5°	10.4	41.5	102.3	142.3	155.6
110°	8.9	35.6	94.9	133.4	145.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	8.9	29.6	86.0	123.0	136.4
115°	7.4	25.2	78.6	114.1	126.0
117.5°	7.4	19.3	69.7	105.2	117.1
120°	5.9	13.3	62.2	96.3	106.7
122.5°	5.9	8.9	54.8	87.4	97.8
125°	4.4	4.4	47.4	78.6	88.9
127.5°	4.4	3.0	40.0	69.7	80.0
130°	4.4	3.0	32.6	60.8	69.7
132.5°	3.0	3.0	25.2	51.9	62.2
135°	3.0	1.5	17.8	44.5	51.9
137.5°	3.0	1.5	11.9	35.6	43.0
140°	1.5	1.5	5.9	28.2	35.6
142.5°	1.5	0.0	0.0	19.3	26.7
145°	1.5	0.0	0.0	11.9	17.8
147.5°	0.0	0.0	0.0	4.4	10.4
150°	0.0	0.0	0.0	0.0	3.0
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	18.79	20.29	19.28	20.78	21.29	20.79	22.29	21.28	22.77	23.29
	3H	20.35	21.72	20.85	22.21	22.77	23.17	24.54	23.67	25.03	25.58
	4H	20.87	22.17	21.39	22.68	23.25	24.28	25.58	24.80	26.09	26.66
	6H	21.21	22.42	21.75	22.94	23.53	25.39	26.60	25.92	27.12	27.70
	8H	21.30	22.46	21.85	23.00	23.60	25.94	27.10	26.49	27.64	28.24
	12H	21.35	22.46	21.90	23.00	23.62	26.55	27.66	27.10	28.20	28.82
4H	2H	19.70	21.00	20.22	21.50	22.07	21.25	22.55	21.77	23.05	23.62
	3H	21.50	22.61	22.03	23.16	23.75	23.84	24.95	24.38	25.50	26.09
	4H	22.16	23.18	22.72	23.73	24.36	25.11	26.12	25.66	26.68	27.30
	6H	22.64	23.53	23.21	24.12	24.75	26.39	27.28	26.97	27.87	28.51
	8H	22.77	23.61	23.35	24.20	24.85	27.04	27.88	27.62	28.47	29.12
	12H	22.86	23.62	23.46	24.23	24.89	27.76	28.52	28.36	29.13	29.79
8H	4H	22.80	23.64	23.38	24.22	24.87	25.33	26.17	25.91	26.76	27.41
	6H	23.45	24.16	24.07	24.79	25.45	26.77	27.48	27.39	28.11	28.77
	8H	23.69	24.33	24.31	24.96	25.63	27.55	28.19	28.18	28.83	29.50
	12H	23.86	24.43	24.48	25.05	25.79	28.43	29.00	29.06	29.63	30.36
12H	4H	22.95	23.71	23.55	24.33	24.98	25.34	26.11	25.95	26.72	27.37
	6H	23.69	24.34	24.32	24.97	25.64	26.81	27.46	27.44	28.09	28.76
	8H	24.02	24.59	24.64	25.22	25.95	27.66	28.23	28.28	28.85	29.59