

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: P243364

Luminaire Tested: S123DRP-H1165D835-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243364
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-54)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DRP-H1165D835-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

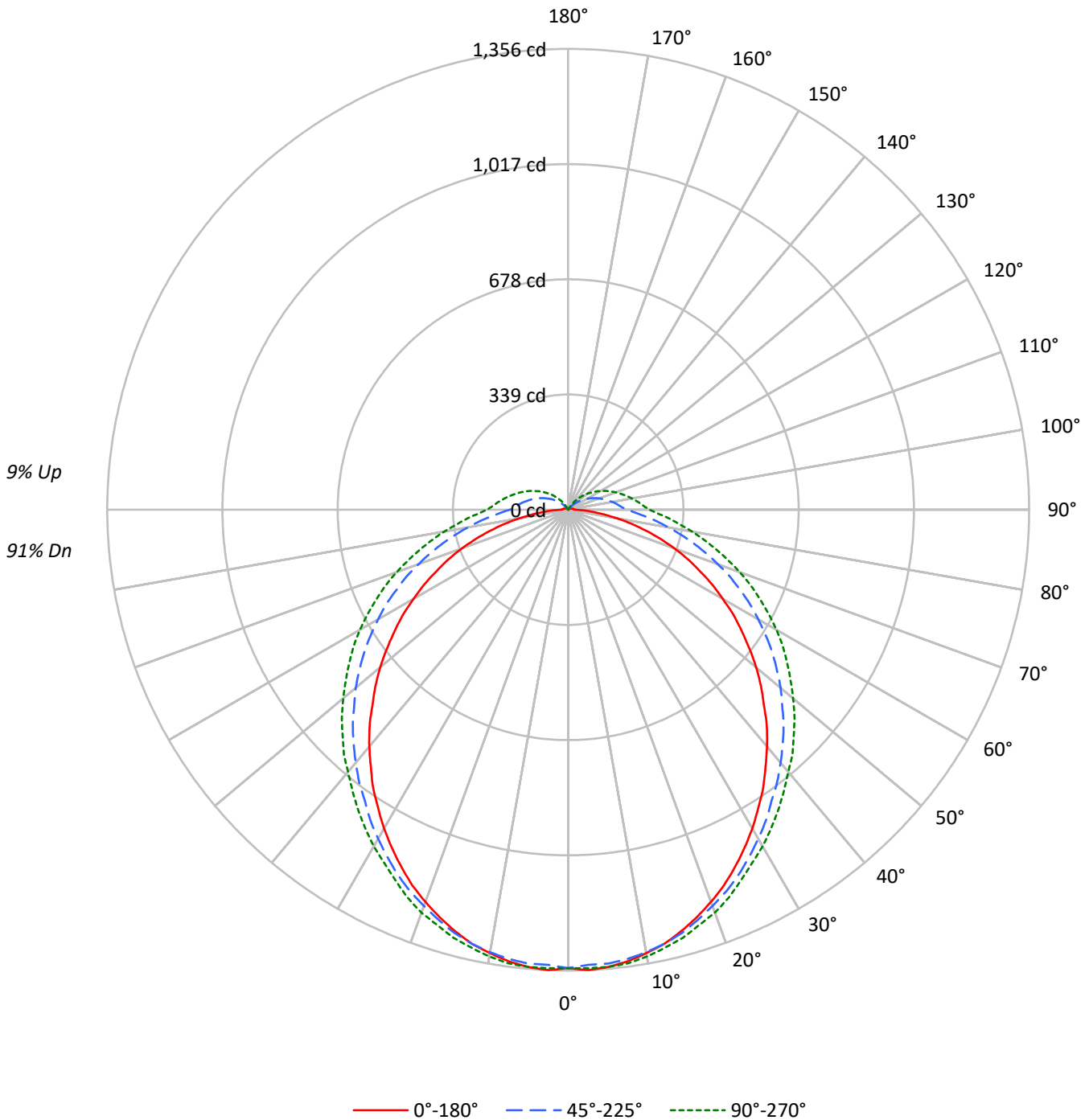
Lumens per Lamp: N/A
Luminaire Lumens: 4578.4 lumens
Efficiency: N/A
Efficacy: 121.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 37.7
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	0
RCR																		
0	117	117	117	117	113	113	113	113	106	106	106	100	100	100	94	94	94	91
1	105	100	95	90	101	96	92	88	91	87	84	85	82	80	80	78	76	73
2	95	86	79	72	91	83	77	71	78	73	68	74	69	65	69	66	62	60
3	86	75	66	60	83	73	65	58	69	62	56	65	59	54	61	56	52	50
4	79	66	57	50	76	64	56	49	61	53	48	57	51	46	54	49	45	42
5	72	59	50	43	70	57	49	42	54	47	41	51	45	40	49	43	39	36
6	67	53	44	37	64	52	43	37	49	41	36	46	40	35	44	38	34	31
7	62	48	39	33	60	47	38	32	44	37	32	42	36	31	40	34	30	28
8	57	44	35	29	55	43	34	29	41	33	28	39	32	27	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	23	35	28	23	33	27	22	32	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	16350	16350	16350
5°	16400	15931	15924
10°	16247	15528	15440
15°	16023	15086	14910
20°	15717	14560	14373
25°	15367	14072	13753
30°	14974	13526	13229
35°	14579	12971	12708
40°	14145	12519	12210
45°	13667	12072	11794
50°	13267	11614	11363
55°	12775	11150	10937
60°	12263	10635	10524
65°	11723	10085	10019
70°	11110	9496	9526
75°	10184	8854	8943
80°	9015	8219	8432
85°	8004	7707	8043

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 13667 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.1	2.8
10°-20°	365.1	8.0
20°-30°	546.8	11.9
30°-40°	654.3	14.3
40°-50°	686.1	15.0
50°-60°	645.0	14.1
60°-70°	539.8	11.8
70°-80°	387.4	8.5
80°-90°	232.1	5.1
90°-100°	147.1	3.2
100°-110°	108.4	2.4
110°-120°	72.6	1.6
120°-130°	41.8	0.9
130°-140°	19.3	0.4
140°-150°	4.4	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1040.0	22.7
0°-40°	1694.3	37.0
0°-60°	3025.5	66.1
0°-90°	4184.7	91.4
90°-120°	328.1	7.2
90°-150°	393.7	8.6
90°-180°	394.0	8.6
0°-180°	4578.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1349	1349	1349	1349	1349	
5°	1350	1349	1340	1352	1350	128
15°	1284	1293	1290	1307	1304	362
25°	1160	1176	1186	1204	1203	534
35°	1000	1024	1044	1070	1078	625
45°	814	855	896	927	938	630
55°	623	675	733	772	786	558
65°	428	491	557	606	622	424
75°	235	307	381	433	450	249
85°	72	146	228	280	298	74
90°	20	93	172	224	239	14
95°	16	76	149	197	212	13
105°	11	49	114	156	169	12
115°	7	25	80	117	129	8
125°	6	6	49	80	91	5
135°	3	1	21	46	55	2
145°	1	0	0	14	20	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°	1348.9	1348.9	1348.9	1348.9	1348.9
2.5°	1356.0	1351.8	1340.5	1353.2	1350.4
5°	1350.4	1348.9	1340.5	1351.8	1350.4
7.5°	1340.5	1340.5	1333.5	1346.1	1346.1
10°	1325.0	1329.3	1322.2	1336.3	1334.9
12.5°	1308.2	1313.8	1308.2	1323.6	1319.4
15°	1284.2	1292.7	1289.9	1306.7	1303.9
17.5°	1257.5	1267.4	1266.0	1282.8	1281.4
20°	1228.0	1240.6	1240.6	1257.5	1261.7
22.5°	1197.0	1211.1	1215.3	1232.2	1235.0
25°	1160.5	1175.9	1185.8	1204.1	1202.7
27.5°	1122.5	1140.8	1152.0	1171.7	1171.7
30°	1083.1	1104.2	1118.3	1139.4	1143.6
32.5°	1040.9	1066.2	1083.1	1105.6	1111.2
35°	1000.1	1024.0	1043.7	1070.4	1077.5
37.5°	953.7	983.2	1009.9	1038.1	1042.3
40°	910.1	942.4	972.0	1001.5	1007.1
42.5°	865.1	898.8	934.0	963.5	976.2
45°	814.4	855.2	896.0	927.0	938.2
47.5°	769.4	810.2	853.8	890.4	903.0
50°	721.6	763.8	815.8	851.0	863.7
52.5°	672.4	718.8	773.6	811.6	824.3
55°	623.1	675.2	732.8	772.2	786.3
57.5°	576.7	628.8	689.2	732.8	748.3
60°	524.7	582.3	645.6	690.6	707.5
62.5°	478.2	537.3	603.4	648.4	665.3
65°	427.6	490.9	557.0	606.3	621.7
67.5°	381.2	443.1	514.8	564.1	580.9
70°	332.0	396.7	468.4	519.0	537.3
72.5°	282.7	351.7	424.8	476.8	492.3
75°	234.9	306.6	381.2	433.2	450.1
77.5°	189.9	261.6	339.0	391.0	409.3
80°	144.9	219.4	299.6	351.7	369.9
82.5°	105.5	181.5	263.0	313.7	330.6
85°	71.7	146.3	227.9	279.9	298.2
87.5°	42.2	118.2	196.9	249.0	264.4
90°	19.7	92.8	171.6	223.7	239.1
92.5°	18.3	83.0	158.9	208.2	223.7
95°	15.5	76.0	149.1	196.9	212.4
97.5°	15.5	68.9	140.7	187.1	201.1
100°	14.1	61.9	132.2	175.8	189.9
102.5°	12.7	54.9	122.4	166.0	180.0
105°	11.3	49.2	113.9	156.1	168.8
107.5°	9.8	42.2	105.5	146.3	158.9
110°	9.8	36.6	97.1	136.4	149.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	8.4	30.9	88.6	126.6	139.3
115°	7.0	25.3	80.2	116.7	129.4
117.5°	7.0	19.7	71.7	108.3	119.6
120°	7.0	15.5	64.7	98.5	109.7
122.5°	5.6	9.8	57.7	90.0	101.3
125°	5.6	5.6	49.2	80.2	91.4
127.5°	4.2	2.8	42.2	71.7	81.6
130°	4.2	2.8	35.2	63.3	73.1
132.5°	2.8	2.8	28.1	54.9	64.7
135°	2.8	1.4	21.1	46.4	54.9
137.5°	2.8	1.4	14.1	38.0	46.4
140°	1.4	1.4	7.0	29.5	38.0
142.5°	1.4	0.0	1.4	22.5	29.5
145°	1.4	0.0	0.0	14.1	19.7
147.5°	1.4	0.0	0.0	7.0	12.7
150°	1.4	0.0	0.0	0.0	4.2
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	18.74	20.25	19.24	20.73	21.25	20.81	22.31	21.30	22.80	23.32
	3H	20.30	21.67	20.80	22.16	22.72	23.21	24.58	23.71	25.07	25.63
	4H	20.82	22.12	21.35	22.63	23.21	24.32	25.62	24.85	26.13	26.71
	6H	21.16	22.37	21.70	22.89	23.49	25.45	26.66	25.99	27.18	27.77
	8H	21.25	22.41	21.80	22.95	23.55	26.01	27.17	26.56	27.72	28.31
	12H	21.30	22.41	21.85	22.95	23.57	26.63	27.74	27.19	28.28	28.91
4H	2H	19.66	20.96	20.18	21.47	22.04	21.26	22.56	21.79	23.07	23.65
	3H	21.46	22.57	22.00	23.12	23.72	23.87	24.98	24.41	25.53	26.13
	4H	22.13	23.14	22.69	23.70	24.33	25.15	26.16	25.71	26.72	27.35
	6H	22.60	23.49	23.18	24.08	24.72	26.45	27.34	27.03	27.93	28.57
	8H	22.74	23.57	23.32	24.16	24.82	27.11	27.95	27.69	28.54	29.19
	12H	22.82	23.58	23.43	24.20	24.86	27.84	28.60	28.44	29.22	29.88
8H	4H	22.77	23.61	23.36	24.20	24.86	25.37	26.21	25.95	26.80	27.45
	6H	23.43	24.14	24.05	24.77	25.43	26.83	27.54	27.45	28.17	28.83
	8H	23.66	24.30	24.29	24.94	25.62	27.62	28.26	28.24	28.90	29.57
	12H	23.83	24.41	24.46	25.03	25.77	28.51	29.08	29.14	29.71	30.45
12H	4H	22.93	23.70	23.54	24.31	24.97	25.38	26.14	25.99	26.76	27.42
	6H	23.68	24.32	24.31	24.96	25.63	26.87	27.51	27.50	28.15	28.83
	8H	24.00	24.58	24.63	25.20	25.94	27.72	28.29	28.35	28.92	29.66