

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: P242509

Luminaire Tested: S123DRP-S1165D840-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242509
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-S1165D840-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

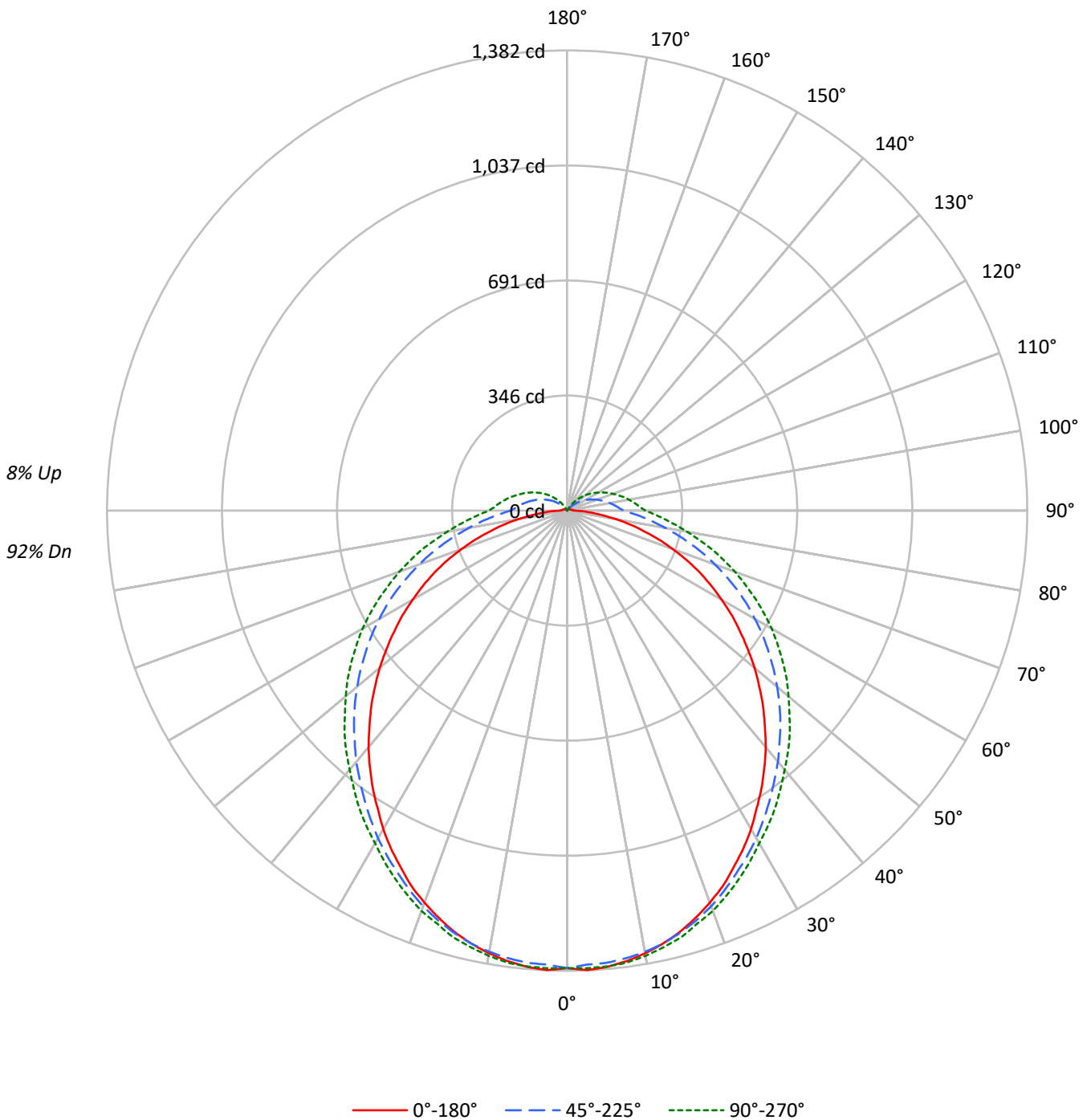
Lumens per Lamp: N/A
Luminaire Lumens: 4617.7 lumens
Efficiency: N/A
Efficacy: 112.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

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°	16655	16655	16655
5°	16705	16204	16203
10°	16553	15802	15702
15°	16340	15351	15164
20°	16033	14842	14578
25°	15657	14262	13966
30°	15271	13740	13349
35°	14837	13188	12851
40°	14424	12684	12322
45°	13965	12200	11891
50°	13512	11720	11421
55°	13011	11227	10993
60°	12523	10725	10552
65°	12022	10191	10033
70°	11270	9589	9499
75°	10318	8900	8951
80°	9220	8211	8325
85°	8183	7693	7914

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 13965 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.3	2.8
10°-20°	371.6	8.0
20°-30°	555.6	12.0
30°-40°	663.4	14.4
40°-50°	694.1	15.0
50°-60°	651.4	14.1
60°-70°	544.1	11.8
70°-80°	389.0	8.4
80°-90°	231.5	5.0
90°-100°	145.5	3.2
100°-110°	106.9	2.3
110°-120°	71.4	1.5
120°-130°	40.7	0.9
130°-140°	18.3	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°	1057.5	22.9
0°-40°	1720.9	37.3
0°-60°	3066.4	66.4
0°-90°	4231.0	91.6
90°-120°	323.8	7.0
90°-150°	386.6	8.4
90°-180°	387.0	8.4
0°-180°	4617.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1374	1374	1374	1374	1374	
5°	1376	1372	1364	1376	1374	130
15°	1310	1314	1313	1328	1326	369
25°	1182	1197	1202	1221	1221	545
35°	1018	1042	1061	1084	1090	637
45°	832	868	906	934	946	642
55°	635	684	738	778	790	568
65°	438	497	563	608	623	433
75°	238	308	383	432	450	254
85°	73	148	228	278	293	76
90°	20	93	169	220	235	14
95°	16	75	148	195	210	13
105°	12	48	112	154	168	12
115°	8	25	79	115	127	8
125°	4	4	48	79	90	5
135°	3	2	18	45	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°	1374.0	1374.0	1374.0	1374.0	1374.0
2.5°	1381.5	1377.0	1365.0	1377.0	1375.5
5°	1375.5	1372.5	1363.5	1375.5	1374.0
7.5°	1365.0	1365.0	1356.0	1371.0	1369.5
10°	1350.0	1353.0	1345.5	1360.5	1357.5
12.5°	1332.1	1336.6	1332.1	1345.5	1342.5
15°	1309.6	1314.1	1312.6	1327.6	1326.1
17.5°	1282.7	1291.7	1290.2	1303.6	1300.6
20°	1252.7	1261.7	1264.7	1278.2	1279.7
22.5°	1221.3	1230.3	1234.8	1252.7	1251.2
25°	1182.4	1197.4	1201.8	1221.3	1221.3
27.5°	1145.0	1161.4	1170.4	1186.9	1188.4
30°	1104.6	1124.0	1136.0	1154.0	1154.0
32.5°	1059.7	1082.1	1098.6	1118.0	1122.5
35°	1017.8	1041.7	1061.2	1083.6	1089.6
37.5°	972.9	999.8	1022.2	1047.7	1052.2
40°	928.0	954.9	984.8	1010.3	1016.3
42.5°	878.6	913.0	944.4	972.9	981.8
45°	832.2	868.1	905.5	933.9	945.9
47.5°	782.8	823.2	865.1	896.5	905.5
50°	734.9	776.8	823.2	857.6	868.1
52.5°	684.0	728.9	781.3	817.2	830.7
55°	634.6	684.0	737.9	778.3	790.3
57.5°	586.7	637.6	696.0	736.4	749.8
60°	535.8	589.7	651.1	693.0	709.4
62.5°	487.9	543.3	609.2	651.1	666.0
65°	438.5	496.9	562.8	607.7	622.6
67.5°	389.1	450.5	516.4	565.8	577.7
70°	336.8	401.1	473.0	520.9	535.8
72.5°	288.9	353.2	428.1	477.4	492.4
75°	238.0	308.3	383.2	432.5	450.5
77.5°	194.6	264.9	339.8	392.1	405.6
80°	148.2	221.5	299.3	350.2	365.2
82.5°	107.8	182.6	261.9	312.8	327.8
85°	73.3	148.2	227.5	278.4	293.4
87.5°	44.9	119.7	196.1	247.0	261.9
90°	19.5	92.8	169.1	220.0	235.0
92.5°	18.0	82.3	157.2	206.5	220.0
95°	16.5	74.8	148.2	194.6	209.5
97.5°	15.0	68.8	139.2	184.1	199.1
100°	13.5	61.4	130.2	173.6	188.6
102.5°	12.0	53.9	121.2	163.1	178.1
105°	12.0	47.9	112.3	154.2	167.6
107.5°	10.5	41.9	103.3	143.7	157.2
110°	9.0	35.9	95.8	134.7	146.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	9.0	29.9	86.8	124.2	137.7
115°	7.5	25.4	79.3	115.2	127.2
117.5°	7.5	19.5	70.3	106.3	118.2
120°	6.0	13.5	62.9	97.3	107.8
122.5°	6.0	9.0	55.4	88.3	98.8
125°	4.5	4.5	47.9	79.3	89.8
127.5°	4.5	3.0	40.4	70.3	80.8
130°	4.5	3.0	32.9	61.4	70.3
132.5°	3.0	3.0	25.4	52.4	62.9
135°	3.0	1.5	18.0	44.9	52.4
137.5°	3.0	1.5	12.0	35.9	43.4
140°	1.5	1.5	6.0	28.4	35.9
142.5°	1.5	0.0	0.0	19.5	26.9
145°	1.5	0.0	0.0	12.0	18.0
147.5°	0.0	0.0	0.0	4.5	10.5
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	18.82	20.33	19.31	20.81	21.33	20.82	22.33	21.31	22.81	23.32
	3H	20.38	21.75	20.88	22.24	22.80	23.20	24.57	23.70	25.06	25.62
	4H	20.90	22.20	21.42	22.71	23.28	24.31	25.61	24.83	26.12	26.69
	6H	21.25	22.46	21.78	22.98	23.56	25.42	26.63	25.96	27.15	27.74
	8H	21.33	22.49	21.88	23.04	23.63	25.98	27.13	26.52	27.68	28.27
	12H	21.38	22.49	21.94	23.03	23.65	26.58	27.69	27.14	28.23	28.85
4H	2H	19.73	21.03	20.25	21.54	22.11	21.28	22.58	21.80	23.09	23.66
	3H	21.53	22.64	22.07	23.19	23.78	23.87	24.98	24.41	25.53	26.12
	4H	22.20	23.21	22.75	23.77	24.39	25.14	26.15	25.70	26.71	27.34
	6H	22.67	23.57	23.25	24.15	24.79	26.43	27.32	27.00	27.90	28.54
	8H	22.81	23.65	23.39	24.23	24.88	27.08	27.92	27.66	28.50	29.15
	12H	22.89	23.66	23.50	24.27	24.92	27.79	28.55	28.39	29.17	29.82
8H	4H	22.83	23.67	23.41	24.26	24.91	25.37	26.21	25.95	26.79	27.44
	6H	23.49	24.20	24.10	24.83	25.48	26.81	27.52	27.42	28.15	28.80
	8H	23.72	24.36	24.35	25.00	25.67	27.58	28.23	28.21	28.86	29.53
	12H	23.89	24.46	24.52	25.09	25.82	28.47	29.04	29.09	29.66	30.40
12H	4H	22.99	23.75	23.59	24.36	25.02	25.38	26.14	25.98	26.75	27.41
	6H	23.73	24.37	24.35	25.01	25.68	26.85	27.49	27.47	28.13	28.79
	8H	24.05	24.62	24.68	25.25	25.98	27.69	28.26	28.32	28.89	29.62