

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: P243369

Luminaire Tested: S123DRP-H1165D840-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243369
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-H1165D840-X4F0-XX-UDD-D-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

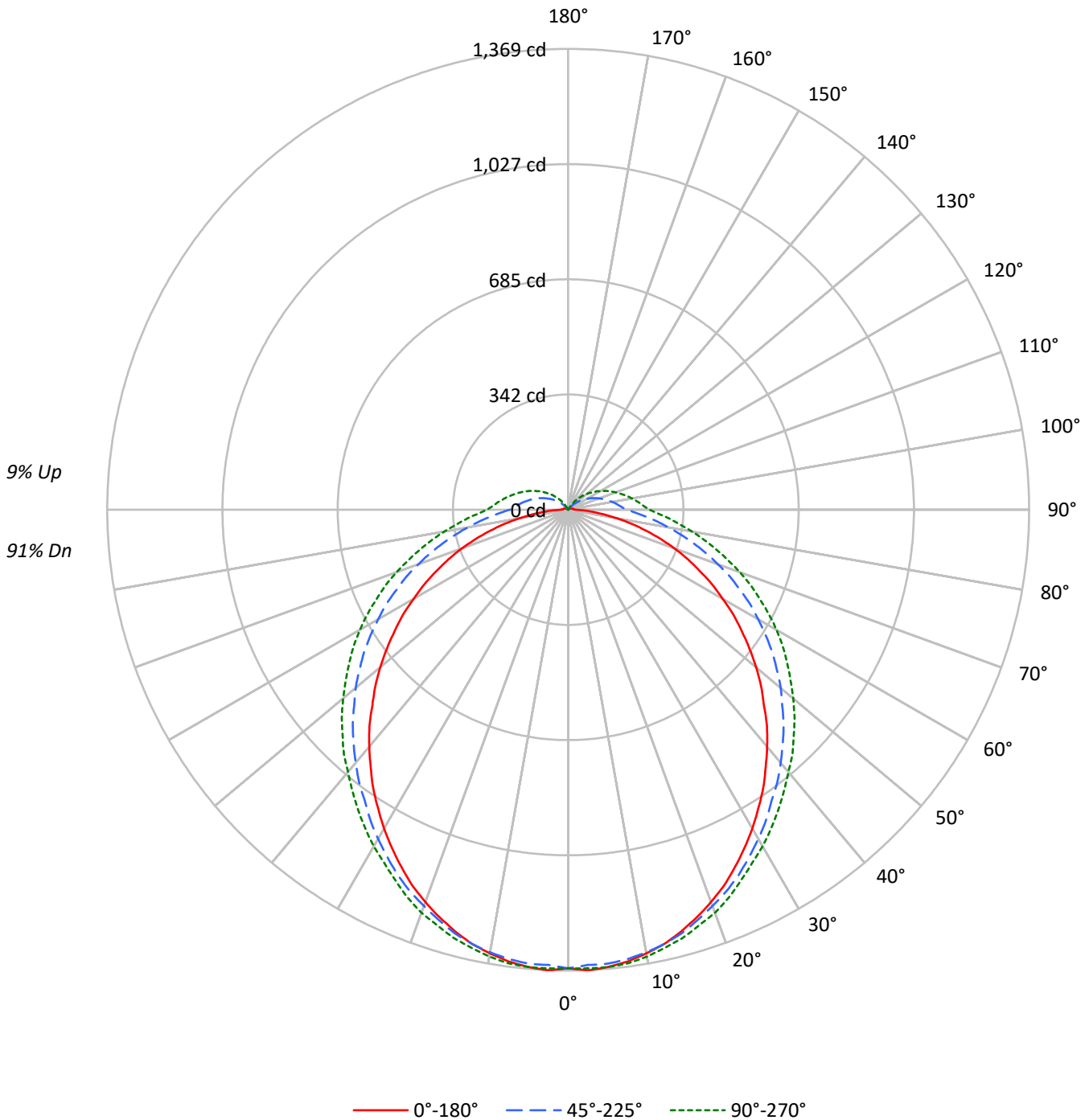
Lumens per Lamp: N/A
Luminaire Lumens: 4623.6 lumens
Efficiency: N/A
Efficacy: 122.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')
CIE Type: Direct

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										
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	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	94	94	94	91														
1	105	100	95	90	101	96	92	88	91	87	84	85	82	80	80	78	76	76	76	76	76	76	76	73														
2	95	86	79	72	91	83	77	71	78	73	68	74	69	65	69	66	62	62	62	62	62	62	62	60														
3	86	75	66	60	83	73	65	58	69	62	56	65	59	54	61	56	52	52	52	52	52	52	52	50														
4	79	66	57	50	76	64	56	49	61	53	48	57	51	46	54	49	45	45	45	45	45	45	45	42														
5	72	59	50	43	70	57	49	42	54	47	41	51	45	40	49	43	39	39	39	39	39	39	39	36														
6	67	53	44	37	64	52	43	37	49	41	36	46	40	35	44	38	34	34	34	34	34	34	34	31														
7	62	48	39	33	60	47	38	32	44	37	32	42	36	31	40	34	30	30	30	30	30	30	30	28														
8	57	44	35	29	55	43	34	29	41	33	28	39	32	27	37	31	27	27	27	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	24	24	24	22														
10	50	37	29	24	49	36	29	23	35	28	23	33	27	22	32	26	22	22	22	22	22	22	22	20														

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	16513	16513	16513
5°	16562	16088	16081
10°	16407	15682	15592
15°	16181	15234	15057
20°	15872	14704	14515
25°	15518	14211	13888
30°	15122	13659	13360
35°	14724	13099	12833
40°	14285	12643	12331
45°	13802	12192	11911
50°	13398	11730	11475
55°	12903	11261	11046
60°	12382	10740	10628
65°	11839	10185	10119
70°	11217	9589	9620
75°	10283	8942	9033
80°	9102	8301	8516
85°	8082	7781	8121

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 13802 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	129.3	2.8
10°-20°	368.7	8.0
20°-30°	552.2	11.9
30°-40°	660.8	14.3
40°-50°	692.9	15.0
50°-60°	651.4	14.1
60°-70°	545.2	11.8
70°-80°	391.2	8.5
80°-90°	234.3	5.1
90°-100°	148.6	3.2
100°-110°	109.5	2.4
110°-120°	73.3	1.6
120°-130°	42.3	0.9
130°-140°	19.5	0.4
140°-150°	4.5	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1050.3	22.7
0°-40°	1711.1	37.0
0°-60°	3055.4	66.1
0°-90°	4226.1	91.4
90°-120°	331.3	7.2
90°-150°	397.5	8.6
90°-180°	398.0	8.6
0°-180°	4623.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1362	1362	1362	1362	1362	
5°	1364	1362	1354	1365	1364	129
15°	1297	1305	1303	1320	1317	365
25°	1172	1188	1198	1216	1214	540
35°	1010	1034	1054	1081	1088	631
45°	822	864	905	936	948	636
55°	629	682	740	780	794	564
65°	432	496	562	612	628	429
75°	237	310	385	438	455	252
85°	72	148	230	283	301	74
90°	20	94	173	226	242	14
95°	16	77	151	199	214	13
105°	11	50	115	158	170	12
115°	7	26	81	118	131	8
125°	6	6	50	81	92	5
135°	3	1	21	47	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°	1362.3	1362.3	1362.3	1362.3	1362.3
2.5°	1369.4	1365.1	1353.7	1366.5	1363.7
5°	1363.7	1362.3	1353.7	1365.1	1363.7
7.5°	1353.7	1353.7	1346.6	1359.4	1359.4
10°	1338.1	1342.4	1335.3	1349.5	1348.0
12.5°	1321.1	1326.7	1321.1	1336.7	1332.4
15°	1296.9	1305.4	1302.6	1319.6	1316.8
17.5°	1269.9	1279.9	1278.4	1295.5	1294.1
20°	1240.1	1252.9	1252.9	1269.9	1274.2
22.5°	1208.8	1223.0	1227.3	1244.4	1247.2
25°	1171.9	1187.5	1197.5	1215.9	1214.5
27.5°	1133.6	1152.0	1163.4	1183.3	1183.3
30°	1093.8	1115.1	1129.3	1150.6	1154.9
32.5°	1051.2	1076.7	1093.8	1116.5	1122.2
35°	1010.0	1034.1	1054.0	1081.0	1088.1
37.5°	963.1	992.9	1019.9	1048.3	1052.6
40°	919.1	951.7	981.6	1011.4	1017.1
42.5°	873.6	907.7	943.2	973.0	985.8
45°	822.5	863.7	904.9	936.1	947.5
47.5°	777.0	818.2	862.2	899.2	912.0
50°	728.7	771.3	823.9	859.4	872.2
52.5°	679.0	725.9	781.3	819.6	832.4
55°	629.3	681.8	740.1	779.9	794.1
57.5°	582.4	635.0	696.0	740.1	755.7
60°	529.8	588.1	652.0	697.5	714.5
62.5°	483.0	542.6	609.4	654.8	671.9
65°	431.8	495.8	562.5	612.2	627.9
67.5°	385.0	447.5	519.9	569.6	586.7
70°	335.2	400.6	473.0	524.2	542.6
72.5°	285.5	355.1	429.0	481.5	497.2
75°	237.2	309.7	385.0	437.5	454.6
77.5°	191.8	264.2	342.3	394.9	413.4
80°	146.3	221.6	302.6	355.1	373.6
82.5°	106.5	183.2	265.6	316.8	333.8
85°	72.4	147.7	230.1	282.7	301.1
87.5°	42.6	119.3	198.9	251.4	267.1
90°	19.9	93.8	173.3	225.9	241.5
92.5°	18.5	83.8	160.5	210.2	225.9
95°	15.6	76.7	150.6	198.9	214.5
97.5°	15.6	69.6	142.0	188.9	203.1
100°	14.2	62.5	133.5	177.6	191.8
102.5°	12.8	55.4	123.6	167.6	181.8
105°	11.4	49.7	115.1	157.7	170.5
107.5°	9.9	42.6	106.5	147.7	160.5
110°	9.9	36.9	98.0	137.8	150.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	8.5	31.3	89.5	127.8	140.6
115°	7.1	25.6	81.0	117.9	130.7
117.5°	7.1	19.9	72.4	109.4	120.7
120°	7.1	15.6	65.3	99.4	110.8
122.5°	5.7	9.9	58.2	90.9	102.3
125°	5.7	5.7	49.7	81.0	92.3
127.5°	4.3	2.8	42.6	72.4	82.4
130°	4.3	2.8	35.5	63.9	73.9
132.5°	2.8	2.8	28.4	55.4	65.3
135°	2.8	1.4	21.3	46.9	55.4
137.5°	2.8	1.4	14.2	38.4	46.9
140°	1.4	1.4	7.1	29.8	38.4
142.5°	1.4	0.0	1.4	22.7	29.8
145°	1.4	0.0	0.0	14.2	19.9
147.5°	1.4	0.0	0.0	7.1	12.8
150°	1.4	0.0	0.0	0.0	4.3
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	18.78	20.28	19.27	20.76	21.29	20.85	22.35	21.34	22.83	23.35
	3H	20.33	21.70	20.84	22.19	22.76	23.24	24.61	23.75	25.11	25.67
	4H	20.86	22.15	21.38	22.67	23.24	24.36	25.66	24.88	26.17	26.74
	6H	21.20	22.40	21.73	22.93	23.52	25.48	26.69	26.02	27.22	27.81
	8H	21.28	22.44	21.83	22.99	23.58	26.05	27.20	26.60	27.75	28.35
	12H	21.33	22.44	21.89	22.98	23.61	26.66	27.77	27.22	28.31	28.94
4H	2H	19.69	20.99	20.22	21.50	22.08	21.30	22.59	21.82	23.11	23.68
	3H	21.49	22.60	22.03	23.15	23.75	23.91	25.01	24.45	25.57	26.16
	4H	22.16	23.18	22.72	23.74	24.37	25.18	26.19	25.74	26.76	27.39
	6H	22.63	23.53	23.21	24.12	24.76	26.48	27.38	27.06	27.97	28.61
	8H	22.77	23.61	23.35	24.20	24.85	27.14	27.98	27.73	28.57	29.23
	12H	22.85	23.62	23.46	24.23	24.89	27.87	28.63	28.48	29.25	29.91
8H	4H	22.81	23.65	23.39	24.24	24.89	25.41	26.25	25.99	26.83	27.49
	6H	23.46	24.18	24.08	24.81	25.47	26.86	27.58	27.48	28.21	28.87
	8H	23.70	24.34	24.33	24.98	25.65	27.65	28.29	28.28	28.93	29.60
	12H	23.87	24.44	24.50	25.07	25.81	28.55	29.12	29.18	29.75	30.48
12H	4H	22.97	23.73	23.57	24.35	25.01	25.42	26.18	26.02	26.79	27.45
	6H	23.71	24.36	24.34	25.00	25.67	26.91	27.55	27.53	28.19	28.86
	8H	24.04	24.61	24.67	25.24	25.98	27.76	28.33	28.39	28.96	29.69