

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: P242675

Luminaire Tested: S124DRP-S1020D835-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242675
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-16)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124DRP-S1020D835-X4F0-XX-UDD-D-W
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

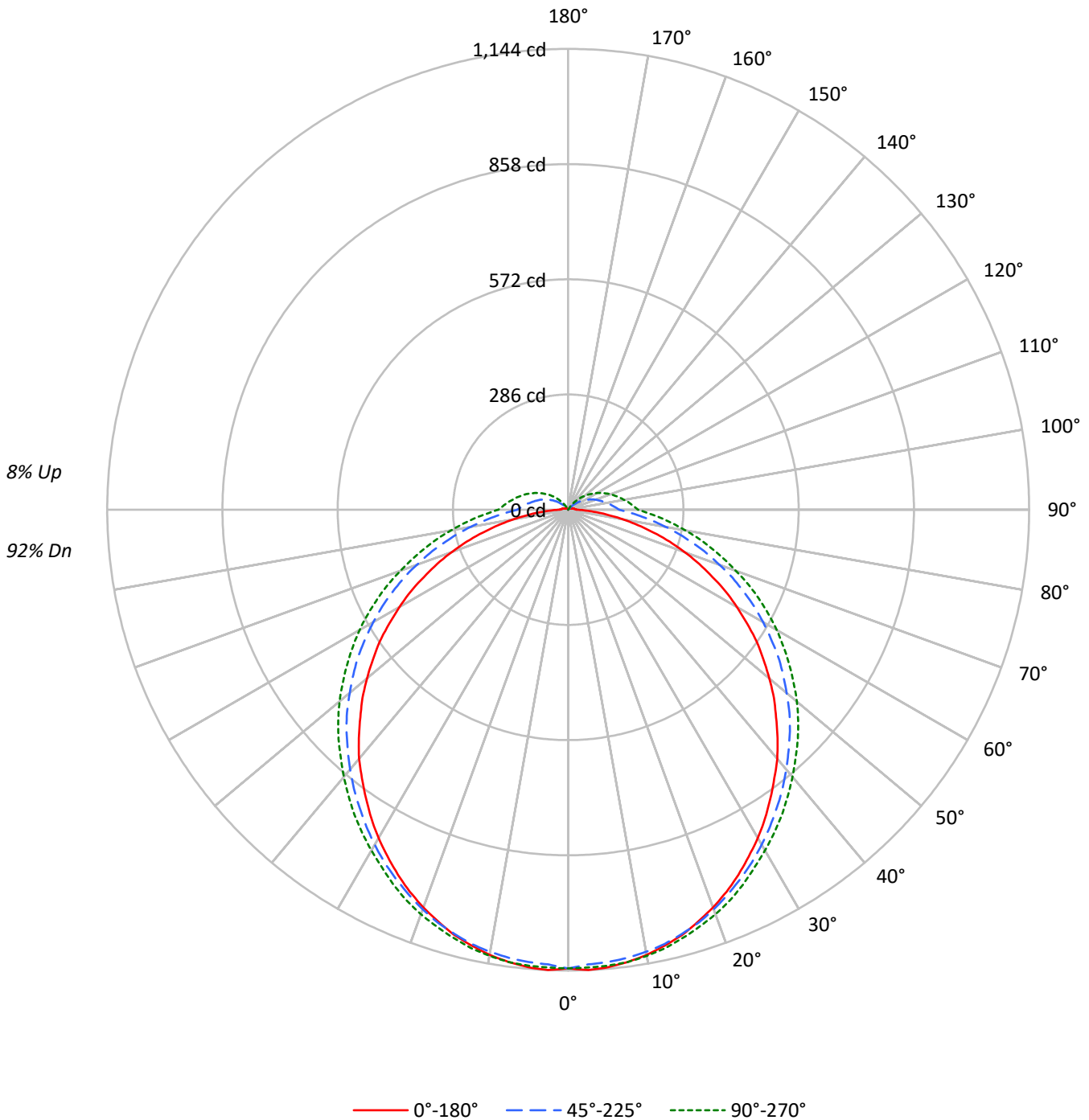
Lumens per Lamp: N/A
Luminaire Lumens: 3882.6 lumens
Efficiency: N/A
Efficacy: 111.6 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.31' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 34.8
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	0
RCR																		
0	117	117	117	117	114	114	114	114	107	107	107	101	101	101	95	95	95	92
1	105	100	95	91	102	97	93	89	91	88	84	86	83	80	81	79	77	74
2	95	86	79	73	92	84	77	71	79	73	68	74	70	66	70	67	63	60
3	87	75	67	60	83	73	65	59	69	62	57	65	60	55	62	57	53	50
4	79	66	57	50	76	65	56	49	61	54	48	58	52	47	55	49	45	43
5	73	59	50	43	70	58	49	42	55	47	41	52	45	40	49	44	39	37
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	45	39	34	32
7	62	48	39	33	60	47	38	32	45	37	32	43	36	31	41	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	38	30	25	36	29	25	34	29	24	22
10	50	37	29	24	49	36	29	23	35	28	23	33	27	23	32	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10123	10123	10123
5°	10154	9883	9907
10°	10091	9712	9697
15°	10000	9514	9452
20°	9863	9299	9215
25°	9709	9058	8955
30°	9541	8819	8688
35°	9352	8574	8455
40°	9200	8341	8210
45°	8976	8124	7999
50°	8787	7876	7775
55°	8590	7638	7514
60°	8283	7340	7274
65°	7948	7018	6980
70°	7541	6651	6637
75°	6972	6245	6323
80°	6342	5844	6003
85°	5534	5469	5782

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 8976 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	107.9	2.8
10°-20°	309.2	8.0
20°-30°	467.5	12.0
30°-40°	565.5	14.6
40°-50°	597.9	15.4
50°-60°	562.7	14.5
60°-70°	466.9	12.0
70°-80°	327.7	8.4
80°-90°	184.7	4.8
90°-100°	110.0	2.8
100°-110°	81.4	2.1
110°-120°	54.6	1.4
120°-130°	30.8	0.8
130°-140°	13.3	0.3
140°-150°	2.6	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	884.5	22.8
0°-40°	1450.0	37.3
0°-60°	2610.6	67.2
0°-90°	3589.8	92.5
90°-120°	246.1	6.3
90°-150°	292.8	7.5
90°-180°	293.0	7.5
0°-180°	3882.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1139	1139	1139	1139	1139	
5°	1140	1136	1127	1138	1136	108
15°	1093	1094	1090	1102	1100	308
25°	1000	1007	1011	1025	1027	461
35°	875	890	903	921	925	548
45°	729	754	778	800	806	564
55°	571	598	636	662	670	509
65°	395	436	480	511	522	392
75°	219	266	320	356	367	233
85°	68	121	178	217	230	70
90°	20	71	126	163	173	14
95°	17	59	111	145	157	13
105°	12	37	84	116	126	13
115°	8	19	60	88	97	8
125°	5	4	36	60	68	5
135°	3	3	12	32	40	2
145°	1	0	0	8	13	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°	1138.8	1138.8	1138.8	1138.8	1138.8
2.5°	1143.9	1140.1	1129.9	1138.8	1137.5
5°	1140.1	1136.2	1127.3	1137.5	1136.2
7.5°	1132.4	1129.9	1122.2	1133.7	1132.4
10°	1122.2	1120.9	1114.6	1126.0	1124.8
12.5°	1108.2	1108.2	1104.4	1114.6	1114.6
15°	1092.9	1094.2	1090.3	1101.8	1100.5
17.5°	1072.5	1076.3	1075.0	1086.5	1085.2
20°	1050.8	1054.6	1055.9	1068.7	1068.7
22.5°	1026.6	1031.7	1034.2	1047.0	1049.5
25°	999.8	1007.4	1011.3	1025.3	1026.6
27.5°	970.5	981.9	987.0	999.8	1001.1
30°	941.1	951.3	960.3	974.3	976.8
32.5°	909.2	922.0	932.2	948.8	951.3
35°	874.8	890.1	902.9	920.7	924.6
37.5°	840.4	858.2	873.5	891.4	895.2
40°	807.2	823.8	841.7	860.8	865.9
42.5°	769.0	788.1	809.8	831.5	835.3
45°	729.4	753.7	777.9	799.6	806.0
47.5°	692.5	716.7	744.7	766.4	774.1
50°	651.7	679.7	707.8	733.3	740.9
52.5°	610.8	638.9	672.1	697.6	705.2
55°	571.3	598.1	636.3	661.9	669.5
57.5°	526.7	559.8	596.8	627.4	633.8
60°	483.3	516.5	558.6	587.9	598.1
62.5°	441.2	478.2	520.3	549.6	559.8
65°	395.3	436.1	479.5	511.4	521.6
67.5°	352.0	395.3	441.2	473.1	483.3
70°	307.3	350.7	399.2	433.6	442.5
72.5°	264.0	308.6	360.9	394.1	404.3
75°	219.3	266.5	320.1	355.8	367.3
77.5°	177.3	227.0	283.1	318.8	331.6
80°	139.0	190.0	246.1	284.4	294.6
82.5°	100.7	154.3	210.4	249.9	261.4
85°	67.6	121.1	178.5	216.8	229.5
87.5°	42.1	94.4	150.5	187.5	198.9
90°	20.4	71.4	126.2	163.2	173.4
92.5°	19.1	63.8	118.6	154.3	164.5
95°	16.6	58.7	110.9	145.4	156.9
97.5°	15.3	52.3	104.6	137.7	149.2
100°	14.0	47.2	96.9	131.4	140.3
102.5°	14.0	42.1	90.5	123.7	133.9
105°	11.5	37.0	84.2	116.0	126.2
107.5°	11.5	33.2	77.8	109.7	118.6
110°	10.2	28.1	72.7	102.0	112.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	8.9	24.2	66.3	94.4	104.6
115°	7.7	19.1	59.9	88.0	96.9
117.5°	7.7	15.3	53.6	80.3	90.5
120°	6.4	10.2	47.2	72.7	82.9
122.5°	6.4	6.4	40.8	66.3	75.2
125°	5.1	3.8	35.7	59.9	67.6
127.5°	5.1	3.8	29.3	52.3	61.2
130°	3.8	2.6	23.0	45.9	53.6
132.5°	3.8	2.6	17.9	39.5	47.2
135°	2.6	2.6	11.5	31.9	39.5
137.5°	2.6	1.3	6.4	25.5	31.9
140°	2.6	1.3	2.6	19.1	25.5
142.5°	1.3	1.3	0.0	14.0	19.1
145°	1.3	0.0	0.0	7.7	12.8
147.5°	1.3	0.0	0.0	1.3	6.4
150°	1.3	0.0	0.0	0.0	0.0
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	17.83	19.36	18.31	19.82	20.32	19.39	20.91	19.86	21.38	21.87
	3H	19.47	20.86	19.96	21.34	21.88	21.69	23.08	22.18	23.56	24.10
	4H	20.04	21.36	20.55	21.85	22.40	22.75	24.07	23.26	24.56	25.11
	6H	20.42	21.65	20.95	22.15	22.72	23.81	25.03	24.33	25.54	26.11
	8H	20.53	21.70	21.06	22.23	22.80	24.32	25.50	24.86	26.03	26.60
	12H	20.59	21.71	21.13	22.24	22.84	24.88	26.00	25.42	26.53	27.13
4H	2H	18.68	20.00	19.19	20.49	21.04	19.89	21.20	20.40	21.69	22.25
	3H	20.56	21.68	21.08	22.22	22.79	22.41	23.53	22.94	24.07	24.64
	4H	21.27	22.29	21.81	22.84	23.44	23.63	24.66	24.18	25.20	25.81
	6H	21.78	22.69	22.35	23.26	23.88	24.86	25.77	25.43	26.34	26.96
	8H	21.94	22.79	22.51	23.36	23.99	25.47	26.32	26.04	26.90	27.53
	12H	22.04	22.81	22.63	23.41	24.05	26.14	26.91	26.73	27.51	28.14
8H	4H	21.85	22.69	22.42	23.27	23.90	23.89	24.74	24.46	25.31	25.94
	6H	22.54	23.26	23.14	23.87	24.51	25.28	26.00	25.88	26.61	27.25
	8H	22.79	23.44	23.41	24.06	24.71	26.02	26.67	26.63	27.29	27.94
	12H	22.98	23.55	23.59	24.17	24.88	26.85	27.42	27.46	28.03	28.75
12H	4H	21.98	22.75	22.57	23.35	23.99	23.90	24.67	24.50	25.27	25.91
	6H	22.75	23.40	23.37	24.02	24.67	25.33	25.98	25.94	26.60	27.25
	8H	23.09	23.67	23.71	24.28	25.00	26.14	26.71	26.75	27.33	28.04