

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: P242672

Luminaire Tested: S124DRP-S1195D830-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242672  
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-S1195D830-X4F0-XX-UDD-D-W  
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

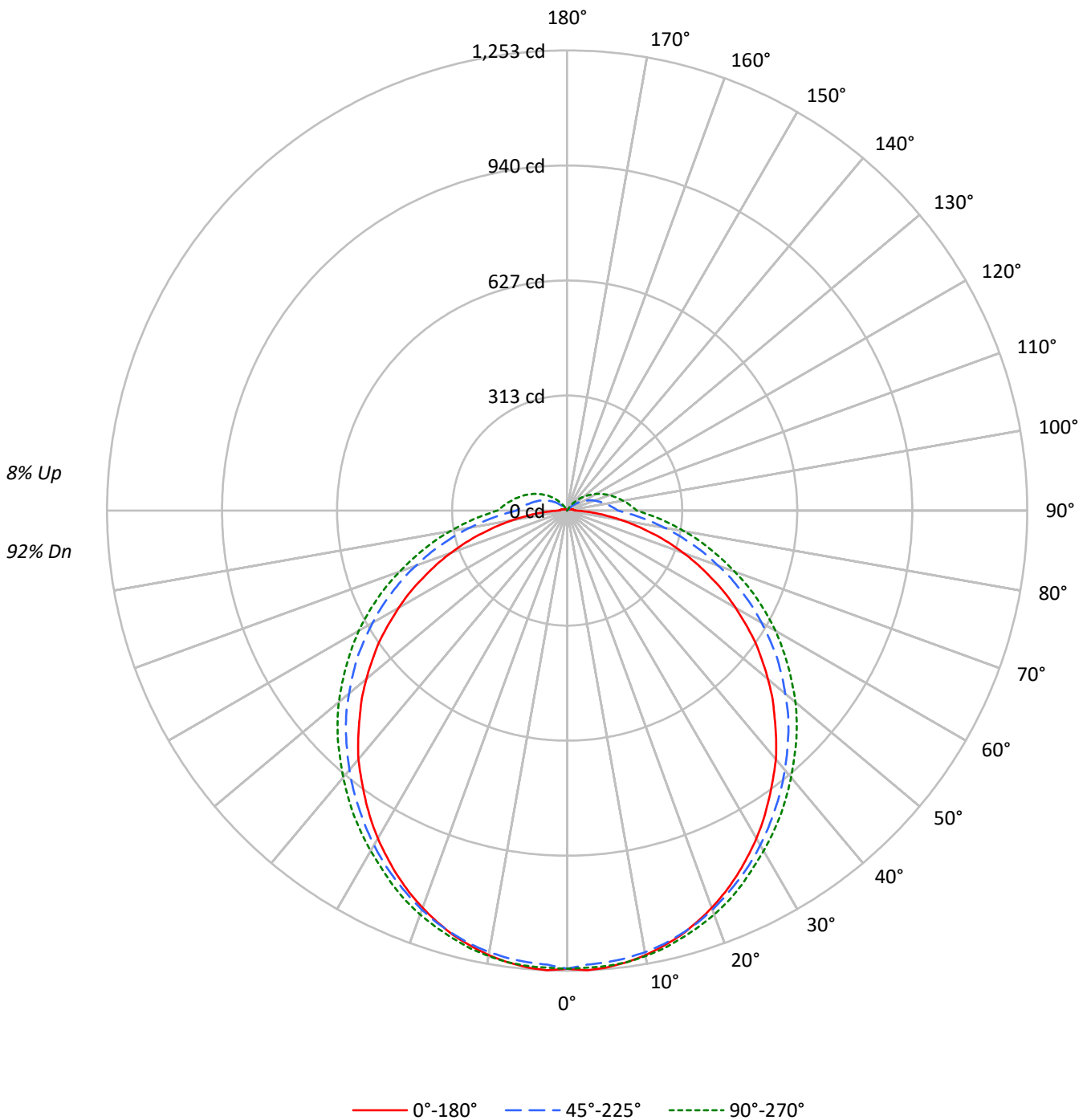
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4253.1 lumens  
Efficiency: N/A  
Efficacy: 103.5 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): 41.1  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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°	11088	11088	11088
5°	11122	10826	10853
10°	11054	10638	10622
15°	10954	10422	10354
20°	10804	10185	10094
25°	10635	9922	9809
30°	10451	9660	9517
35°	10245	9392	9261
40°	10079	9136	8994
45°	9833	8898	8762
50°	9624	8627	8517
55°	9409	8368	8231
60°	9074	8041	7968
65°	8706	7687	7645
70°	8262	7285	7270
75°	7640	6840	6925
80°	6949	6402	6575
85°	6058	5993	6334

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9833 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	118.2	2.8
10°-20°	338.7	8.0
20°-30°	512.1	12.0
30°-40°	619.5	14.6
40°-50°	654.9	15.4
50°-60°	616.4	14.5
60°-70°	511.4	12.0
70°-80°	358.9	8.4
80°-90°	202.3	4.8
90°-100°	120.5	2.8
100°-110°	89.2	2.1
110°-120°	59.9	1.4
120°-130°	33.7	0.8
130°-140°	14.6	0.3
140°-150°	2.9	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	968.9	22.8
0°-40°	1588.4	37.3
0°-60°	2859.6	67.2
0°-90°	3932.3	92.5
90°-120°	269.5	6.3
90°-150°	320.7	7.5
90°-180°	321.0	7.5
0°-180°	4253.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1247	1247	1247	1247	1247	
5°	1249	1245	1235	1246	1245	119
15°	1197	1199	1194	1207	1206	337
25°	1095	1104	1108	1123	1124	504
35°	958	975	989	1009	1013	600
45°	799	826	852	876	883	618
55°	626	655	697	725	733	558
65°	433	478	525	560	571	429
75°	240	292	351	390	402	255
85°	74	133	196	238	251	77
90°	22	78	138	179	190	15
95°	18	64	122	159	172	14
105°	13	40	92	127	138	14
115°	8	21	66	96	106	9
125°	6	4	39	66	74	5
135°	3	3	13	35	43	3
145°	1	0	0	8	14	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°	1247.4	1247.4	1247.4	1247.4	1247.4
2.5°	1253.0	1248.8	1237.7	1247.4	1246.1
5°	1248.8	1244.7	1234.9	1246.1	1244.7
7.5°	1240.5	1237.7	1229.3	1241.9	1240.5
10°	1229.3	1227.9	1220.9	1233.5	1232.1
12.5°	1213.9	1213.9	1209.7	1220.9	1220.9
15°	1197.2	1198.6	1194.4	1206.9	1205.5
17.5°	1174.8	1179.0	1177.6	1190.2	1188.8
20°	1151.1	1155.3	1156.6	1170.6	1170.6
22.5°	1124.5	1130.1	1132.9	1146.9	1149.7
25°	1095.2	1103.6	1107.8	1123.1	1124.5
27.5°	1063.1	1075.6	1081.2	1095.2	1096.6
30°	1030.9	1042.1	1051.9	1067.2	1070.0
32.5°	996.0	1010.0	1021.1	1039.3	1042.1
35°	958.3	975.0	989.0	1008.6	1012.8
37.5°	920.6	940.1	956.9	976.4	980.6
40°	884.3	902.4	922.0	942.9	948.5
42.5°	842.3	863.3	887.0	910.8	915.0
45°	799.0	825.6	852.1	875.9	882.9
47.5°	758.5	785.1	815.8	839.5	847.9
50°	713.8	744.6	775.3	803.2	811.6
52.5°	669.1	699.9	736.2	764.1	772.5
55°	625.8	655.2	697.1	725.0	733.4
57.5°	576.9	613.2	653.8	687.3	694.3
60°	529.4	565.8	611.9	644.0	655.2
62.5°	483.3	523.8	569.9	602.1	613.2
65°	433.0	477.7	525.2	560.2	571.3
67.5°	385.5	433.0	483.3	518.3	529.4
70°	336.7	384.2	437.2	475.0	484.7
72.5°	289.2	338.1	395.3	431.6	442.8
75°	240.3	292.0	350.6	389.7	402.3
77.5°	194.2	248.7	310.1	349.2	363.2
80°	152.3	208.1	269.6	311.5	322.7
82.5°	110.4	169.0	230.5	273.8	286.4
85°	74.0	132.7	195.6	237.5	251.4
87.5°	46.1	103.4	164.8	205.3	217.9
90°	22.4	78.2	138.3	178.8	190.0
92.5°	21.0	69.8	129.9	169.0	180.2
95°	18.2	64.3	121.5	159.2	171.8
97.5°	16.8	57.3	114.5	150.9	163.4
100°	15.4	51.7	106.2	143.9	153.7
102.5°	15.4	46.1	99.2	135.5	146.7
105°	12.6	40.5	92.2	127.1	138.3
107.5°	12.6	36.3	85.2	120.1	129.9
110°	11.2	30.7	79.6	111.8	122.9



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	9.8	26.5	72.6	103.4	114.5
115°	8.4	21.0	65.7	96.4	106.2
117.5°	8.4	16.8	58.7	88.0	99.2
120°	7.0	11.2	51.7	79.6	90.8
122.5°	7.0	7.0	44.7	72.6	82.4
125°	5.6	4.2	39.1	65.7	74.0
127.5°	5.6	4.2	32.1	57.3	67.1
130°	4.2	2.8	25.1	50.3	58.7
132.5°	4.2	2.8	19.6	43.3	51.7
135°	2.8	2.8	12.6	34.9	43.3
137.5°	2.8	1.4	7.0	27.9	34.9
140°	2.8	1.4	2.8	21.0	27.9
142.5°	1.4	1.4	0.0	15.4	21.0
145°	1.4	0.0	0.0	8.4	14.0
147.5°	1.4	0.0	0.0	1.4	7.0
150°	1.4	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	18.15	19.68	18.63	20.14	20.64	19.70	21.23	20.18	21.69	22.19
	3H	19.79	21.18	20.28	21.65	22.19	22.01	23.40	22.50	23.87	24.41
	4H	20.36	21.67	20.87	22.17	22.72	23.07	24.39	23.58	24.88	25.43
	6H	20.74	21.96	21.26	22.47	23.04	24.12	25.35	24.65	25.85	26.42
	8H	20.84	22.02	21.38	22.55	23.12	24.64	25.81	25.18	26.34	26.92
	12H	20.91	22.03	21.45	22.55	23.16	25.19	26.32	25.74	26.84	27.45
4H	2H	19.00	20.31	19.51	20.81	21.36	20.20	21.52	20.71	22.01	22.56
	3H	20.88	22.00	21.40	22.53	23.11	22.73	23.85	23.25	24.39	24.96
	4H	21.58	22.61	22.13	23.15	23.76	23.95	24.97	24.49	25.52	26.12
	6H	22.10	23.00	22.66	23.57	24.19	25.18	26.08	25.74	26.65	27.27
	8H	22.26	23.11	22.83	23.68	24.31	25.79	26.64	26.36	27.21	27.84
	12H	22.36	23.13	22.95	23.73	24.36	26.45	27.22	27.04	27.82	28.46
8H	4H	22.16	23.01	22.73	23.58	24.22	24.20	25.05	24.77	25.62	26.26
	6H	22.86	23.57	23.46	24.19	24.83	25.60	26.31	26.20	26.93	27.57
	8H	23.11	23.76	23.72	24.38	25.03	26.34	26.98	26.95	27.61	28.26
	12H	23.29	23.87	23.91	24.48	25.20	27.16	27.74	27.78	28.35	29.07
12H	4H	22.30	23.07	22.89	23.67	24.31	24.22	24.99	24.81	25.59	26.23
	6H	23.07	23.72	23.68	24.34	24.99	25.65	26.29	26.26	26.92	27.57
	8H	23.41	23.98	24.02	24.60	25.31	26.45	27.03	27.07	27.64	28.36