

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: P242691

Luminaire Tested: S124DRP-S1195D935-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242691  
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-S1195D935-X4F0-XX-UDD-D-W  
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: -

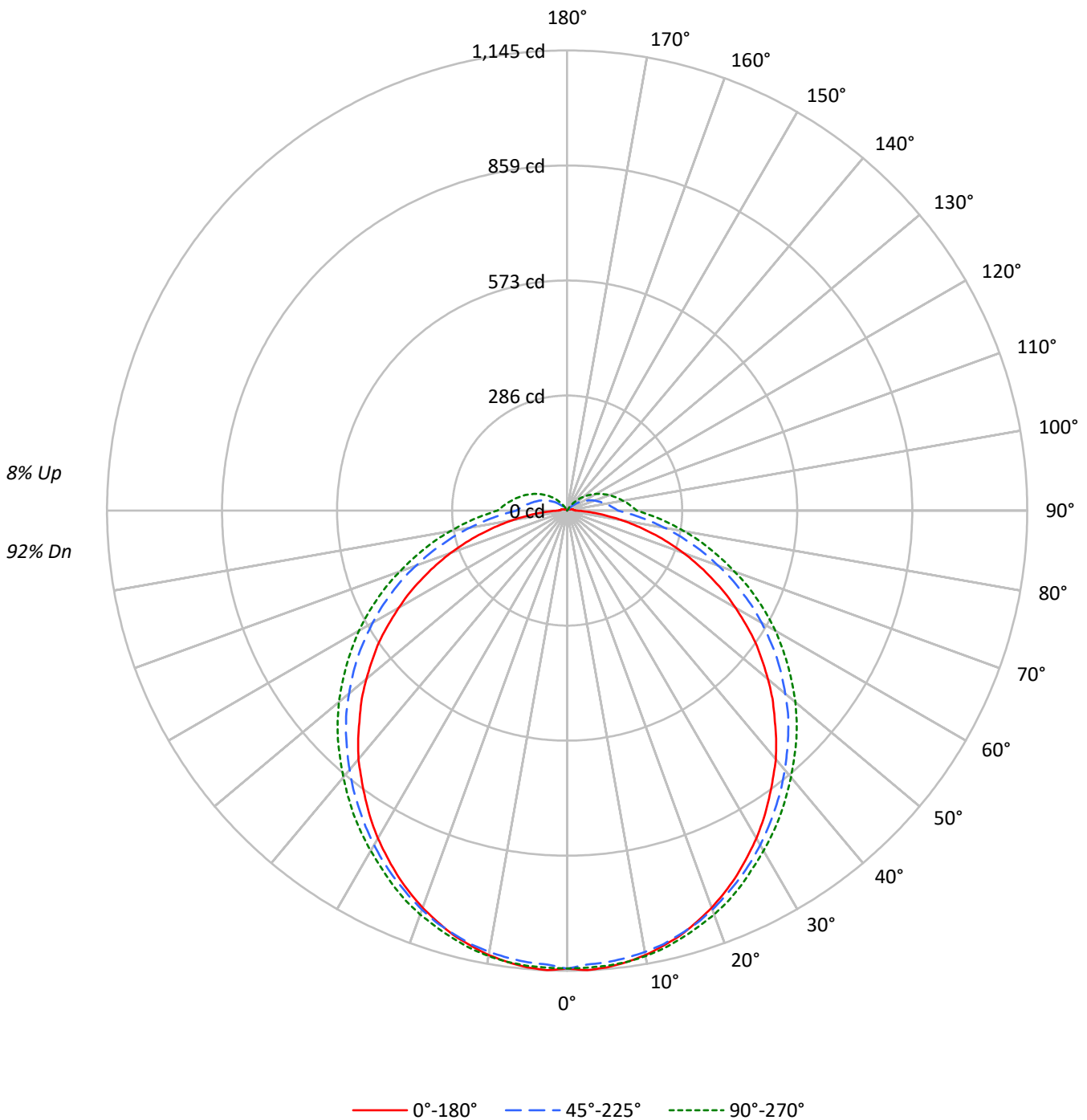
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3885.1 lumens  
Efficiency: N/A  
Efficacy: 94.5 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 (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°	10129	10129	10129
5°	10160	9889	9914
10°	10097	9718	9703
15°	10006	9520	9458
20°	9869	9305	9220
25°	9714	9063	8960
30°	9547	8825	8695
35°	9358	8580	8459
40°	9207	8346	8215
45°	8982	8129	8004
50°	8792	7880	7780
55°	8596	7644	7518
60°	8289	7344	7278
65°	7954	7023	6984
70°	7546	6655	6642
75°	6978	6249	6326
80°	6346	5849	6007
85°	5534	5472	5787

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8982 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	108.0	2.8
10°-20°	309.4	8.0
20°-30°	467.8	12.0
30°-40°	565.9	14.6
40°-50°	598.2	15.4
50°-60°	563.0	14.5
60°-70°	467.2	12.0
70°-80°	327.9	8.4
80°-90°	184.8	4.8
90°-100°	110.0	2.8
100°-110°	81.5	2.1
110°-120°	54.7	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°	885.1	22.8
0°-40°	1451.0	37.3
0°-60°	2612.2	67.2
0°-90°	3592.1	92.5
90°-120°	246.2	6.3
90°-150°	293.0	7.5
90°-180°	293.0	7.5
0°-180°	3885.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1140	1140	1140	1140	1140	
5°	1141	1137	1128	1138	1137	108
15°	1094	1095	1091	1102	1101	308
25°	1000	1008	1012	1026	1027	461
35°	875	891	904	921	925	548
45°	730	754	778	800	806	564
55°	572	598	637	662	670	509
65°	396	436	480	512	522	392
75°	220	267	320	356	368	233
85°	68	121	179	217	230	70
90°	20	72	126	163	174	14
95°	17	59	111	146	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°	1139.5	1139.5	1139.5	1139.5	1139.5
2.5°	1144.6	1140.8	1130.6	1139.5	1138.3
5°	1140.8	1137.0	1128.0	1138.3	1137.0
7.5°	1133.1	1130.6	1122.9	1134.4	1133.1
10°	1122.9	1121.7	1115.3	1126.8	1125.5
12.5°	1108.9	1108.9	1105.1	1115.3	1115.3
15°	1093.6	1094.9	1091.0	1102.5	1101.2
17.5°	1073.2	1077.0	1075.7	1087.2	1085.9
20°	1051.5	1055.3	1056.6	1069.3	1069.3
22.5°	1027.2	1032.3	1034.9	1047.7	1050.2
25°	1000.4	1008.1	1011.9	1026.0	1027.2
27.5°	971.1	982.6	987.7	1000.4	1001.7
30°	941.7	951.9	960.9	974.9	977.5
32.5°	909.8	922.6	932.8	949.4	951.9
35°	875.4	890.7	903.5	921.3	925.1
37.5°	840.9	858.8	874.1	892.0	895.8
40°	807.8	824.3	842.2	861.3	866.4
42.5°	769.5	788.6	810.3	832.0	835.8
45°	729.9	754.2	778.4	800.1	806.5
47.5°	692.9	717.1	745.2	766.9	774.6
50°	652.1	680.1	708.2	733.7	741.4
52.5°	611.2	639.3	672.5	698.0	705.7
55°	571.7	598.5	636.8	662.3	669.9
57.5°	527.0	560.2	597.2	627.8	634.2
60°	483.6	516.8	558.9	588.3	598.5
62.5°	441.5	478.5	520.6	550.0	560.2
65°	395.6	436.4	479.8	511.7	521.9
67.5°	352.2	395.6	441.5	473.4	483.6
70°	307.5	350.9	399.4	433.9	442.8
72.5°	264.1	308.8	361.1	394.3	404.5
75°	219.5	266.7	320.3	356.0	367.5
77.5°	177.4	227.1	283.3	319.0	331.8
80°	139.1	190.1	246.3	284.6	294.8
82.5°	100.8	154.4	210.6	250.1	261.6
85°	67.6	121.2	178.6	216.9	229.7
87.5°	42.1	94.4	150.6	187.6	199.1
90°	20.4	71.5	126.3	163.3	173.5
92.5°	19.1	63.8	118.7	154.4	164.6
95°	16.6	58.7	111.0	145.5	157.0
97.5°	15.3	52.3	104.6	137.8	149.3
100°	14.0	47.2	97.0	131.4	140.4
102.5°	14.0	42.1	90.6	123.8	134.0
105°	11.5	37.0	84.2	116.1	126.3
107.5°	11.5	33.2	77.8	109.7	118.7
110°	10.2	28.1	72.7	102.1	112.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	8.9	24.2	66.4	94.4	104.6
115°	7.7	19.1	60.0	88.0	97.0
117.5°	7.7	15.3	53.6	80.4	90.6
120°	6.4	10.2	47.2	72.7	82.9
122.5°	6.4	6.4	40.8	66.4	75.3
125°	5.1	3.8	35.7	60.0	67.6
127.5°	5.1	3.8	29.3	52.3	61.3
130°	3.8	2.6	23.0	45.9	53.6
132.5°	3.8	2.6	17.9	39.6	47.2
135°	2.6	2.6	11.5	31.9	39.6
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	17.84	19.36	18.31	19.83	20.32	19.39	20.91	19.87	21.38	21.88
	3H	19.48	20.86	19.97	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	22.16	22.72	23.81	25.03	24.33	25.54	26.11
	8H	20.53	21.70	21.07	22.23	22.81	24.33	25.50	24.86	26.03	26.60
	12H	20.59	21.72	21.13	22.24	22.84	24.88	26.01	25.42	26.53	27.13
4H	2H	18.68	20.00	19.19	20.49	21.04	19.89	21.20	20.40	21.70	22.25
	3H	20.56	21.68	21.09	22.22	22.79	22.42	23.54	22.94	24.07	24.65
	4H	21.27	22.29	21.81	22.84	23.44	23.63	24.66	24.18	25.20	25.81
	6H	21.79	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	25.48	26.33	26.05	26.90	27.53
	12H	22.04	22.81	22.63	23.41	24.05	26.14	26.91	26.73	27.51	28.15
8H	4H	21.85	22.70	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	24.72	26.02	26.67	26.64	27.29	27.94
	12H	22.98	23.56	23.60	24.17	24.89	26.85	27.42	27.46	28.04	28.75
12H	4H	21.98	22.75	22.57	23.35	23.99	23.91	24.68	24.50	25.28	25.91
	6H	22.75	23.40	23.37	24.03	24.68	25.33	25.98	25.94	26.60	27.25
	8H	23.09	23.67	23.71	24.28	25.00	26.14	26.72	26.75	27.33	28.05