

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: P242687

Luminaire Tested: S124DRP-S350D935-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242687  
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-S350D935-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: -

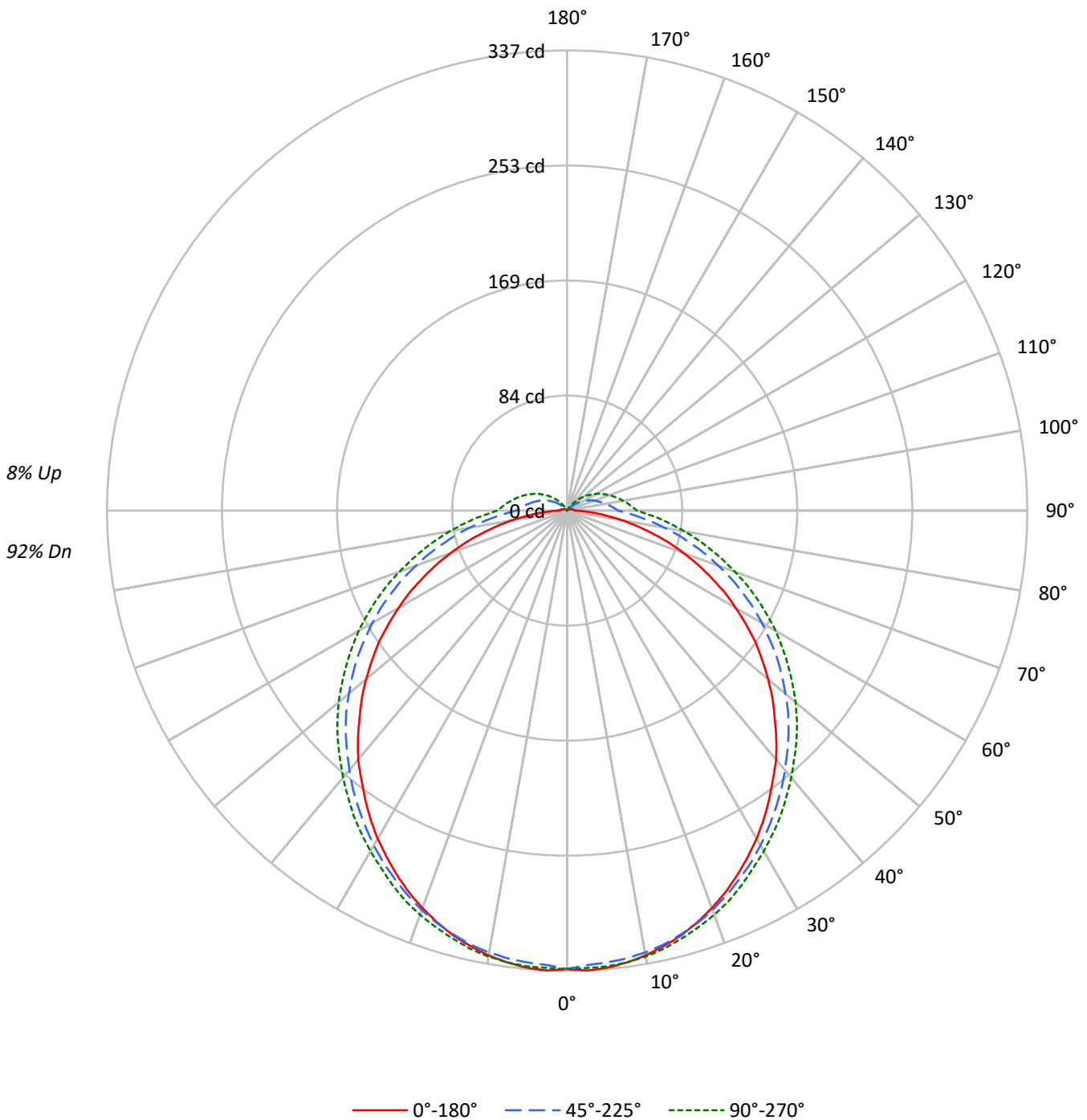
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1144.6 lumens  
Efficiency: N/A  
Efficacy: 98.7 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): 11.6  
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°	2984	2984	2984
5°	2993	2913	2921
10°	2975	2863	2859
15°	2948	2805	2786
20°	2908	2741	2716
25°	2862	2670	2640
30°	2812	2600	2562
35°	2757	2528	2493
40°	2713	2459	2421
45°	2646	2395	2358
50°	2590	2321	2292
55°	2532	2252	2215
60°	2442	2164	2144
65°	2342	2070	2058
70°	2223	1961	1956
75°	2057	1842	1864
80°	1871	1724	1769
85°	1629	1611	1706

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2646 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	31.8	2.8
10°-20°	91.1	8.0
20°-30°	137.8	12.0
30°-40°	166.7	14.6
40°-50°	176.2	15.4
50°-60°	165.9	14.5
60°-70°	137.6	12.0
70°-80°	96.6	8.4
80°-90°	54.5	4.8
90°-100°	32.4	2.8
100°-110°	24.0	2.1
110°-120°	16.1	1.4
120°-130°	9.1	0.8
130°-140°	3.9	0.3
140°-150°	0.8	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	260.7	22.8
0°-40°	427.5	37.3
0°-60°	769.6	67.2
0°-90°	1058.3	92.5
90°-120°	72.5	6.3
90°-150°	86.3	7.5
90°-180°	86.0	7.5
0°-180°	1144.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	336	336	336	336	336	
5°	336	335	332	335	335	32
15°	322	323	321	325	324	91
25°	295	297	298	302	303	136
35°	258	262	266	271	273	161
45°	215	222	229	236	238	166
55°	168	176	188	195	197	150
65°	116	129	141	151	154	116
75°	65	79	94	105	108	69
85°	20	36	53	64	68	21
90°	6	21	37	48	51	4
95°	5	17	33	43	46	4
105°	3	11	25	34	37	4
115°	2	6	18	26	29	2
125°	2	1	10	18	20	1
135°	1	1	3	9	12	1
145°	0	0	0	2	4	0
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°	335.7	335.7	335.7	335.7	335.7
2.5°	337.2	336.1	333.1	335.7	335.3
5°	336.1	335.0	332.3	335.3	335.0
7.5°	333.8	333.1	330.8	334.2	333.8
10°	330.8	330.4	328.6	331.9	331.6
12.5°	326.7	326.7	325.6	328.6	328.6
15°	322.2	322.6	321.4	324.8	324.4
17.5°	316.2	317.3	316.9	320.3	319.9
20°	309.8	310.9	311.3	315.0	315.0
22.5°	302.6	304.1	304.9	308.6	309.4
25°	294.7	297.0	298.1	302.2	302.6
27.5°	286.1	289.5	291.0	294.7	295.1
30°	277.4	280.4	283.1	287.2	288.0
32.5°	268.0	271.8	274.8	279.7	280.4
35°	257.9	262.4	266.2	271.4	272.6
37.5°	247.7	253.0	257.5	262.8	263.9
40°	238.0	242.9	248.1	253.8	255.3
42.5°	226.7	232.3	238.7	245.1	246.2
45°	215.0	222.2	229.3	235.7	237.6
47.5°	204.1	211.3	219.5	225.9	228.2
50°	192.1	200.4	208.6	216.2	218.4
52.5°	180.1	188.3	198.1	205.6	207.9
55°	168.4	176.3	187.6	195.1	197.4
57.5°	155.3	165.0	175.9	185.0	186.8
60°	142.5	152.3	164.7	173.3	176.3
62.5°	130.1	141.0	153.4	162.0	165.0
65°	116.5	128.6	141.4	150.7	153.8
67.5°	103.8	116.5	130.1	139.5	142.5
70°	90.6	103.4	117.7	127.8	130.4
72.5°	77.8	91.0	106.4	116.2	119.2
75°	64.7	78.6	94.4	104.9	108.3
77.5°	52.3	66.9	83.5	94.0	97.7
80°	41.0	56.0	72.6	83.8	86.8
82.5°	29.7	45.5	62.0	73.7	77.1
85°	19.9	35.7	52.6	63.9	67.7
87.5°	12.4	27.8	44.4	55.3	58.6
90°	6.0	21.1	37.2	48.1	51.1
92.5°	5.6	18.8	35.0	45.5	48.5
95°	4.9	17.3	32.7	42.9	46.2
97.5°	4.5	15.4	30.8	40.6	44.0
100°	4.1	13.9	28.6	38.7	41.4
102.5°	4.1	12.4	26.7	36.5	39.5
105°	3.4	10.9	24.8	34.2	37.2
107.5°	3.4	9.8	22.9	32.3	35.0
110°	3.0	8.3	21.4	30.1	33.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	2.6	7.1	19.5	27.8	30.8
115°	2.3	5.6	17.7	25.9	28.6
117.5°	2.3	4.5	15.8	23.7	26.7
120°	1.9	3.0	13.9	21.4	24.4
122.5°	1.9	1.9	12.0	19.5	22.2
125°	1.5	1.1	10.5	17.7	19.9
127.5°	1.5	1.1	8.6	15.4	18.0
130°	1.1	0.8	6.8	13.5	15.8
132.5°	1.1	0.8	5.3	11.7	13.9
135°	0.8	0.8	3.4	9.4	11.7
137.5°	0.8	0.4	1.9	7.5	9.4
140°	0.8	0.4	0.8	5.6	7.5
142.5°	0.4	0.4	0.0	4.1	5.6
145°	0.4	0.0	0.0	2.3	3.8
147.5°	0.4	0.0	0.0	0.4	1.9
150°	0.4	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	13.59	15.11	14.07	15.58	16.08	15.14	16.67	15.62	17.13	17.63
	3H	15.23	16.62	15.72	17.09	17.63	17.45	18.84	17.94	19.31	19.85
	4H	15.80	17.11	16.31	17.60	18.16	18.51	19.83	19.02	20.32	20.87
	6H	16.18	17.40	16.70	17.91	18.48	19.56	20.79	20.09	21.29	21.86
	8H	16.28	17.46	16.82	17.99	18.56	20.08	21.25	20.62	21.78	22.36
	12H	16.35	17.47	16.89	17.99	18.60	20.63	21.76	21.18	22.28	22.89
4H	2H	14.44	15.75	14.95	16.25	16.80	15.64	16.96	16.15	17.45	18.00
	3H	16.32	17.44	16.84	17.97	18.55	18.17	19.29	18.69	19.83	20.40
	4H	17.02	18.05	17.57	18.59	19.20	19.39	20.41	19.93	20.96	21.57
	6H	17.54	18.44	18.10	19.02	19.63	20.62	21.52	21.18	22.09	22.71
	8H	17.70	18.55	18.27	19.12	19.75	21.23	22.08	21.80	22.65	23.28
	12H	17.80	18.57	18.39	19.17	19.80	21.89	22.66	22.48	23.26	23.90
8H	4H	17.60	18.45	18.17	19.02	19.66	19.64	20.49	20.21	21.06	21.70
	6H	18.30	19.01	18.90	19.63	20.27	21.04	21.75	21.64	22.37	23.01
	8H	18.55	19.20	19.16	19.82	20.47	21.78	22.42	22.39	23.05	23.70
	12H	18.73	19.31	19.35	19.92	20.64	22.60	23.18	23.22	23.79	24.51
12H	4H	17.74	18.51	18.33	19.11	19.75	19.66	20.43	20.25	21.03	21.67
	6H	18.51	19.16	19.12	19.78	20.43	21.08	21.73	21.70	22.36	23.01
	8H	18.85	19.42	19.46	20.04	20.75	21.89	22.47	22.51	23.08	23.80