

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: P243523

Luminaire Tested: S124DRP-H350D927-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243523  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-55)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124DRP-H350D927-X4F0-XX-UDD-D-W  
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: -

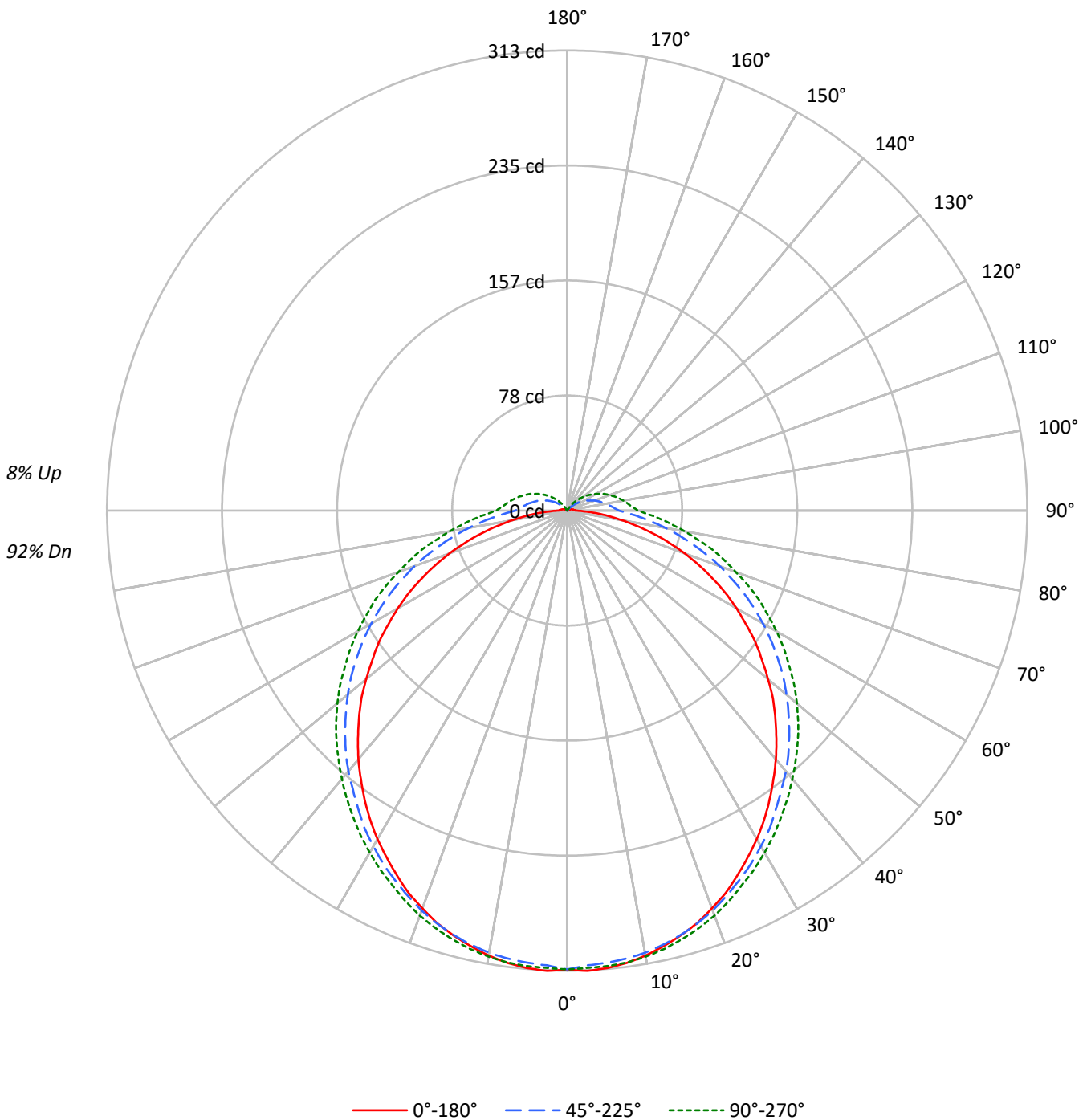
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1066.7 lumens  
Efficiency: N/A  
Efficacy: 95.2 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): 11.2  
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	86	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	46	55	49	45	43
5	72	59	50	43	70	58	49	42	55	47	41	52	45	40	49	43	39	37
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	44	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	37	30	25	36	29	25	34	29	24	22
10	50	37	29	24	49	36	29	23	35	28	23	33	27	22	32	26	22	20

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2774	2774	2774
5°	2782	2706	2713
10°	2764	2661	2656
15°	2737	2607	2592
20°	2702	2549	2528
25°	2660	2483	2453
30°	2616	2421	2389
35°	2567	2352	2323
40°	2518	2294	2261
45°	2465	2231	2202
50°	2405	2166	2141
55°	2353	2098	2070
60°	2280	2022	2000
65°	2194	1936	1931
70°	2091	1839	1830
75°	1930	1721	1758
80°	1711	1608	1654
85°	1547	1513	1595

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2465 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	29.5	2.8
10°-20°	84.7	7.9
20°-30°	128.2	12.0
30°-40°	155.3	14.6
40°-50°	164.2	15.4
50°-60°	154.7	14.5
60°-70°	128.6	12.1
70°-80°	90.4	8.5
80°-90°	50.9	4.8
90°-100°	30.2	2.8
100°-110°	22.4	2.1
110°-120°	14.9	1.4
120°-130°	8.4	0.8
130°-140°	3.6	0.3
140°-150°	0.7	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	242.5	22.7
0°-40°	397.8	37.3
0°-60°	716.7	67.2
0°-90°	986.5	92.5
90°-120°	67.5	6.3
90°-150°	80.2	7.5
90°-180°	80.0	7.5
0°-180°	1066.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	312	312	312	312	312	
5°	312	311	309	311	311	30
15°	299	300	299	302	302	84
25°	274	276	277	281	281	126
35°	240	244	248	253	254	150
45°	200	207	214	220	222	155
55°	156	165	175	182	184	139
65°	109	120	132	141	144	108
75°	61	74	88	98	102	64
85°	19	34	49	60	63	19
90°	6	20	35	45	48	4
95°	5	16	30	40	43	4
105°	3	10	23	32	35	4
115°	2	5	16	24	27	2
125°	1	1	10	16	19	1
135°	1	1	3	9	11	1
145°	0	0	0	2	3	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°	312.1	312.1	312.1	312.1	312.1
2.5°	313.4	312.4	309.7	311.7	311.4
5°	312.4	311.1	308.7	311.4	311.1
7.5°	310.4	309.4	307.4	310.4	310.1
10°	307.4	306.8	305.4	308.1	308.1
12.5°	303.4	303.4	302.4	305.4	305.4
15°	299.1	299.8	298.8	302.1	301.8
17.5°	294.2	294.8	294.5	297.8	297.8
20°	287.9	288.9	289.5	293.2	293.2
22.5°	281.6	282.9	283.5	287.5	287.5
25°	273.9	276.2	277.2	281.2	281.2
27.5°	266.0	269.0	270.9	274.6	275.3
30°	258.0	261.3	263.6	267.6	268.6
32.5°	249.4	252.7	256.4	260.3	261.7
35°	240.1	244.1	247.7	253.0	254.0
37.5°	230.5	235.1	239.4	245.1	246.4
40°	220.9	226.5	231.5	236.8	238.4
42.5°	210.6	216.2	222.9	228.5	230.2
45°	200.3	206.6	213.6	219.9	221.9
47.5°	190.0	196.7	204.3	210.9	213.2
50°	178.4	185.7	194.7	201.3	204.0
52.5°	167.1	175.1	185.1	191.7	194.7
55°	156.5	164.8	174.8	182.4	184.4
57.5°	144.3	153.5	164.5	172.8	174.8
60°	133.0	142.3	153.9	162.2	164.5
62.5°	121.4	131.3	143.3	151.6	153.9
65°	109.1	120.1	132.3	140.6	144.3
67.5°	97.2	108.1	121.0	130.3	133.3
70°	85.2	96.5	110.4	119.7	122.0
72.5°	72.6	84.9	99.2	108.8	112.1
75°	60.7	73.6	88.2	98.2	102.1
77.5°	49.1	62.7	77.9	88.2	90.9
80°	37.5	52.4	67.7	77.9	81.2
82.5°	28.2	42.1	58.0	69.0	71.6
85°	18.9	33.5	49.4	60.0	63.3
87.5°	11.3	26.2	41.5	51.4	54.7
90°	5.6	19.6	35.2	44.8	48.1
92.5°	5.0	17.6	32.5	42.1	45.4
95°	4.6	15.9	30.5	40.1	42.8
97.5°	4.3	14.6	28.5	37.8	40.8
100°	4.0	12.9	26.9	35.8	38.8
102.5°	3.6	11.6	24.9	33.8	36.8
105°	3.3	10.3	23.2	31.8	34.8
107.5°	3.0	9.0	21.6	29.8	32.8
110°	2.7	7.6	19.9	27.9	30.8



TEST NUMBER: P243523

CATALOG NUMBER: S124DRP-H350D927-X4F0-XX-UDD-D-W

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	2.3	6.6	17.9	25.9	28.9
115°	2.3	5.3	16.2	23.9	26.9
117.5°	2.0	4.0	14.6	21.9	24.5
120°	2.0	3.0	12.9	19.9	22.6
122.5°	1.7	2.0	11.3	18.2	20.6
125°	1.3	1.0	9.6	16.2	18.6
127.5°	1.3	1.0	8.0	14.3	16.6
130°	1.0	1.0	6.3	12.3	14.6
132.5°	1.0	0.7	4.6	10.6	12.6
135°	0.7	0.7	3.0	8.6	10.6
137.5°	0.7	0.3	2.0	7.0	9.0
140°	0.7	0.3	0.7	5.3	7.0
142.5°	0.3	0.3	0.0	3.6	5.0
145°	0.3	0.0	0.0	2.0	3.3
147.5°	0.3	0.0	0.0	0.3	1.7
150°	0.0	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	13.33	14.86	13.81	15.32	15.82	14.92	16.44	15.39	16.91	17.40
	3H	14.98	16.37	15.47	16.85	17.39	17.23	18.62	17.71	19.09	19.63
	4H	15.55	16.87	16.06	17.36	17.92	18.30	19.61	18.81	20.11	20.66
	6H	15.94	17.16	16.46	17.67	18.24	19.34	20.57	19.87	21.07	21.64
	8H	16.04	17.22	16.58	17.75	18.32	19.86	21.03	20.39	21.56	22.13
	12H	16.11	17.23	16.65	17.76	18.36	20.41	21.54	20.95	22.06	22.66
4H	2H	14.19	15.51	14.70	16.00	16.55	15.42	16.74	15.93	17.23	17.78
	3H	16.08	17.20	16.60	17.73	18.31	17.95	19.07	18.47	19.61	20.18
	4H	16.79	17.81	17.33	18.36	18.97	19.18	20.20	19.72	20.75	21.35
	6H	17.31	18.21	17.87	18.78	19.40	20.40	21.30	20.96	21.87	22.49
	8H	17.46	18.31	18.03	18.88	19.52	21.01	21.86	21.58	22.43	23.06
	12H	17.57	18.34	18.16	18.94	19.57	21.67	22.44	22.26	23.04	23.67
8H	4H	17.37	18.22	17.94	18.79	19.42	19.43	20.28	20.00	20.85	21.48
	6H	18.06	18.78	18.66	19.40	20.03	20.81	21.53	21.41	22.15	22.78
	8H	18.31	18.96	18.93	19.59	20.24	21.55	22.20	22.16	22.82	23.47
	12H	18.50	19.08	19.12	19.69	20.41	22.38	22.95	22.99	23.57	24.28
12H	4H	17.51	18.28	18.10	18.88	19.51	19.45	20.22	20.04	20.82	21.45
	6H	18.28	18.93	18.89	19.55	20.20	20.86	21.51	21.48	22.14	22.79
	8H	18.61	19.19	19.23	19.80	20.52	21.67	22.25	22.28	22.86	23.57