

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: P243528

Luminaire Tested: S124DRP-H350D830-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243528
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-H350D830-X4F0-XX-UDD-D-W
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

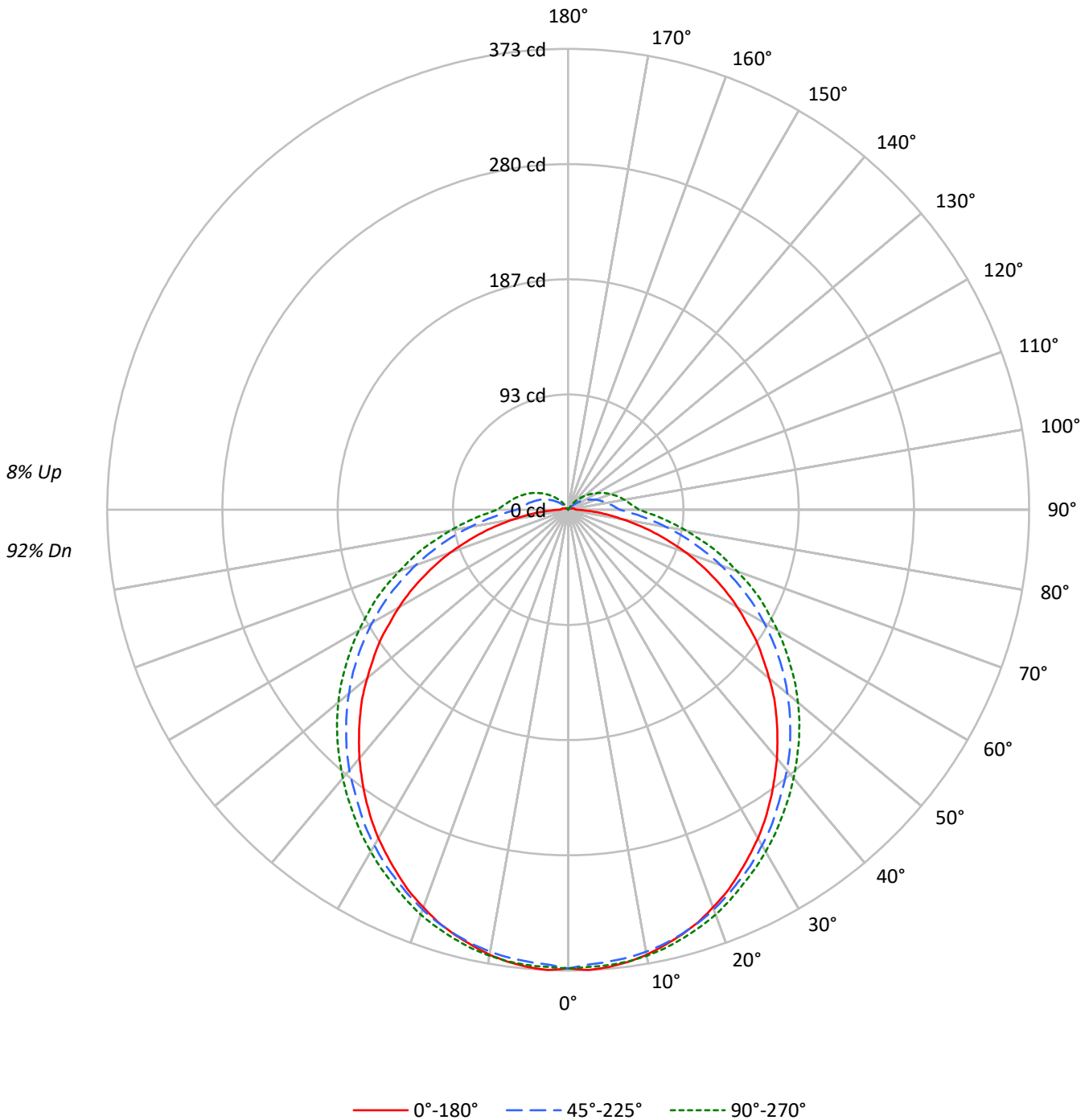
Lumens per Lamp: N/A
Luminaire Lumens: 1269.2 lumens
Efficiency: N/A
Efficacy: 113.3 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.31' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (A_{in}): 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	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°	3300	3300	3300
5°	3310	3221	3227
10°	3289	3166	3160
15°	3256	3102	3084
20°	3215	3034	3008
25°	3165	2955	2919
30°	3112	2881	2843
35°	3054	2799	2763
40°	2995	2729	2690
45°	2933	2654	2620
50°	2862	2577	2547
55°	2800	2496	2462
60°	2711	2406	2380
65°	2610	2304	2296
70°	2488	2189	2178
75°	2295	2048	2091
80°	2035	1912	1970
85°	1842	1801	1900

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2933 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.2	2.8
10°-20°	100.8	7.9
20°-30°	152.6	12.0
30°-40°	184.7	14.6
40°-50°	195.4	15.4
50°-60°	184.1	14.5
60°-70°	153.0	12.1
70°-80°	107.5	8.5
80°-90°	60.6	4.8
90°-100°	35.9	2.8
100°-110°	26.6	2.1
110°-120°	17.8	1.4
120°-130°	10.0	0.8
130°-140°	4.3	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°	288.5	22.7
0°-40°	473.3	37.3
0°-60°	852.8	67.2
0°-90°	1173.8	92.5
90°-120°	80.3	6.3
90°-150°	95.4	7.5
90°-180°	95.0	7.5
0°-180°	1269.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	371	371	371	371	371	
5°	372	370	367	370	370	35
15°	356	357	356	360	359	100
25°	326	329	330	335	335	150
35°	286	290	295	301	302	179
45°	238	246	254	262	264	184
55°	186	196	208	217	219	166
65°	130	143	157	167	172	129
75°	72	88	105	117	122	76
85°	22	40	59	71	75	23
90°	7	23	42	53	57	4
95°	6	19	36	48	51	4
105°	4	12	28	38	41	4
115°	3	6	19	28	32	3
125°	2	1	11	19	22	2
135°	1	1	4	10	13	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°	371.3	371.3	371.3	371.3	371.3
2.5°	372.9	371.7	368.5	370.9	370.5
5°	371.7	370.1	367.4	370.5	370.1
7.5°	369.3	368.1	365.8	369.3	368.9
10°	365.8	365.0	363.4	366.6	366.6
12.5°	361.0	361.0	359.9	363.4	363.4
15°	355.9	356.7	355.5	359.5	359.1
17.5°	350.0	350.8	350.4	354.3	354.3
20°	342.5	343.7	344.5	348.8	348.8
22.5°	335.0	336.6	337.4	342.1	342.1
25°	325.9	328.7	329.9	334.6	334.6
27.5°	316.5	320.0	322.4	326.7	327.5
30°	307.0	310.9	313.7	318.4	319.6
32.5°	296.7	300.7	305.0	309.7	311.3
35°	285.7	290.4	294.7	301.1	302.2
37.5°	274.2	279.8	284.9	291.6	293.2
40°	262.8	269.5	275.4	281.7	283.7
42.5°	250.6	257.3	265.2	271.9	273.8
45°	238.3	245.8	254.1	261.6	264.0
47.5°	226.1	234.0	243.1	251.0	253.7
50°	212.3	221.0	231.6	239.5	242.7
52.5°	198.9	208.3	220.2	228.1	231.6
55°	186.2	196.1	207.9	217.0	219.4
57.5°	171.6	182.7	195.7	205.6	207.9
60°	158.2	169.3	183.1	192.9	195.7
62.5°	144.4	156.3	170.5	180.3	183.1
65°	129.8	142.8	157.4	167.3	171.6
67.5°	115.6	128.6	144.0	155.1	158.6
70°	101.4	114.8	131.4	142.4	145.2
72.5°	86.4	101.0	118.0	129.4	133.4
75°	72.2	87.6	105.0	116.8	121.5
77.5°	58.4	74.6	92.7	105.0	108.1
80°	44.6	62.3	80.5	92.7	96.7
82.5°	33.5	50.1	69.1	82.1	85.2
85°	22.5	39.9	58.8	71.4	75.4
87.5°	13.4	31.2	49.3	61.2	65.1
90°	6.7	23.3	41.8	53.3	57.2
92.5°	5.9	20.9	38.7	50.1	54.1
95°	5.5	18.9	36.3	47.7	50.9
97.5°	5.1	17.4	33.9	45.0	48.5
100°	4.7	15.4	32.0	42.6	46.2
102.5°	4.3	13.8	29.6	40.2	43.8
105°	3.9	12.2	27.6	37.9	41.4
107.5°	3.6	10.7	25.6	35.5	39.1
110°	3.2	9.1	23.7	33.1	36.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.8	7.9	21.3	30.8	34.3
115°	2.8	6.3	19.3	28.4	32.0
117.5°	2.4	4.7	17.4	26.0	29.2
120°	2.4	3.6	15.4	23.7	26.8
122.5°	2.0	2.4	13.4	21.7	24.5
125°	1.6	1.2	11.4	19.3	22.1
127.5°	1.6	1.2	9.5	17.0	19.7
130°	1.2	1.2	7.5	14.6	17.4
132.5°	1.2	0.8	5.5	12.6	15.0
135°	0.8	0.8	3.6	10.3	12.6
137.5°	0.8	0.4	2.4	8.3	10.7
140°	0.8	0.4	0.8	6.3	8.3
142.5°	0.4	0.4	0.0	4.3	5.9
145°	0.4	0.0	0.0	2.4	3.9
147.5°	0.4	0.0	0.0	0.4	2.0
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	13.94	15.46	14.41	15.93	16.43	15.52	17.05	16.00	17.51	18.01
	3H	15.59	16.98	16.08	17.45	17.99	17.83	19.22	18.32	19.70	20.23
	4H	16.16	17.48	16.67	17.97	18.52	18.90	20.22	19.41	20.71	21.26
	6H	16.54	17.77	17.06	18.27	18.84	19.95	21.17	20.47	21.68	22.25
	8H	16.65	17.82	17.18	18.35	18.92	20.46	21.64	21.00	22.17	22.74
	12H	16.71	17.84	17.25	18.36	18.96	21.01	22.14	21.56	22.66	23.27
4H	2H	14.79	16.11	15.31	16.60	17.16	16.02	17.34	16.53	17.83	18.38
	3H	16.68	17.80	17.21	18.34	18.91	18.55	19.67	19.08	20.21	20.78
	4H	17.39	18.42	17.94	18.96	19.57	19.78	20.80	20.32	21.35	21.96
	6H	17.91	18.81	18.47	19.39	20.00	21.00	21.91	21.57	22.48	23.10
	8H	18.07	18.92	18.63	19.49	20.12	21.61	22.46	22.18	23.03	23.66
	12H	18.17	18.94	18.76	19.54	20.18	22.27	23.04	22.86	23.64	24.28
8H	4H	17.97	18.82	18.54	19.40	20.03	20.03	20.88	20.60	21.45	22.09
	6H	18.67	19.39	19.27	20.00	20.64	21.42	22.14	22.02	22.75	23.39
	8H	18.92	19.57	19.53	20.19	20.84	22.16	22.80	22.77	23.43	24.08
	12H	19.11	19.68	19.72	20.30	21.01	22.98	23.56	23.60	24.17	24.89
12H	4H	18.11	18.88	18.70	19.48	20.12	20.05	20.82	20.64	21.42	22.06
	6H	18.88	19.53	19.49	20.15	20.80	21.47	22.12	22.08	22.74	23.39
	8H	19.22	19.80	19.83	20.41	21.12	22.27	22.85	22.89	23.46	24.18