

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: P242677

Luminaire Tested: S124DRP-S350D840-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242677
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-S350D840-X4F0-XX-UDD-D-W
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

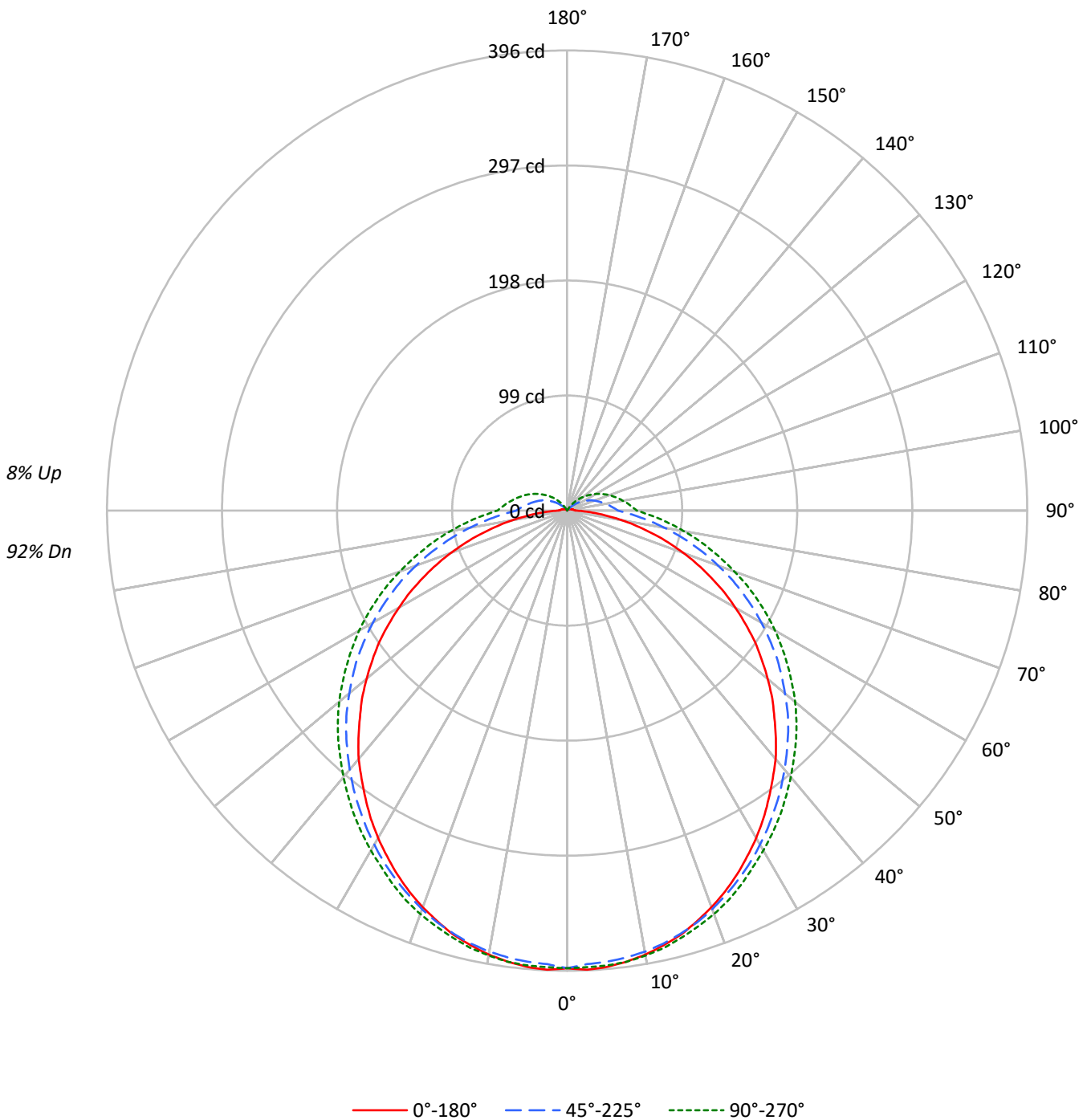
Lumens per Lamp: N/A
Luminaire Lumens: 1342.5 lumens
Efficiency: N/A
Efficacy: 115.7 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.31' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{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	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°	3500	3500	3500
5°	3511	3417	3426
10°	3489	3358	3353
15°	3458	3290	3268
20°	3410	3215	3186
25°	3357	3132	3096
30°	3299	3049	3005
35°	3234	2965	2923
40°	3181	2884	2839
45°	3104	2809	2766
50°	3038	2723	2689
55°	2970	2641	2598
60°	2864	2537	2515
65°	2748	2427	2413
70°	2609	2299	2295
75°	2410	2160	2186
80°	2195	2021	2076
85°	1916	1890	2001

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3104 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.3	2.8
10°-20°	106.9	8.0
20°-30°	161.6	12.0
30°-40°	195.5	14.6
40°-50°	206.7	15.4
50°-60°	194.5	14.5
60°-70°	161.4	12.0
70°-80°	113.3	8.4
80°-90°	63.9	4.8
90°-100°	38.0	2.8
100°-110°	28.2	2.1
110°-120°	18.9	1.4
120°-130°	10.6	0.8
130°-140°	4.6	0.3
140°-150°	0.9	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	305.8	22.8
0°-40°	501.4	37.3
0°-60°	902.6	67.2
0°-90°	1241.2	92.5
90°-120°	85.1	6.3
90°-150°	101.2	7.5
90°-180°	101.0	7.5
0°-180°	1342.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	394	394	394	394	394	
5°	394	393	390	393	393	37
15°	378	378	377	381	380	106
25°	346	348	350	354	355	159
35°	302	308	312	318	320	189
45°	252	261	269	276	279	195
55°	198	207	220	229	232	176
65°	137	151	166	177	180	136
75°	76	92	111	123	127	81
85°	23	42	62	75	79	24
90°	7	25	44	56	60	5
95°	6	20	38	50	54	5
105°	4	13	29	40	44	5
115°	3	7	21	30	34	3
125°	2	1	12	21	23	2
135°	1	1	4	11	14	1
145°	0	0	0	3	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°	393.8	393.8	393.8	393.8	393.8
2.5°	395.5	394.2	390.7	393.8	393.3
5°	394.2	392.9	389.8	393.3	392.9
7.5°	391.5	390.7	388.0	392.0	391.5
10°	388.0	387.6	385.4	389.3	388.9
12.5°	383.2	383.2	381.8	385.4	385.4
15°	377.9	378.3	377.0	381.0	380.5
17.5°	370.8	372.1	371.7	375.7	375.2
20°	363.3	364.6	365.1	369.5	369.5
22.5°	354.9	356.7	357.6	362.0	362.9
25°	345.7	348.3	349.7	354.5	354.9
27.5°	335.5	339.5	341.3	345.7	346.1
30°	325.4	328.9	332.0	336.9	337.8
32.5°	314.4	318.8	322.3	328.1	328.9
35°	302.5	307.8	312.2	318.4	319.7
37.5°	290.6	296.7	302.0	308.2	309.5
40°	279.1	284.8	291.0	297.6	299.4
42.5°	265.9	272.5	280.0	287.5	288.8
45°	252.2	260.6	269.0	276.5	278.7
47.5°	239.4	247.8	257.5	265.0	267.6
50°	225.3	235.0	244.7	253.5	256.2
52.5°	211.2	220.9	232.4	241.2	243.8
55°	197.5	206.8	220.0	228.8	231.5
57.5°	182.1	193.6	206.4	216.9	219.1
60°	167.1	178.6	193.1	203.3	206.8
62.5°	152.6	165.3	179.9	190.0	193.6
65°	136.7	150.8	165.8	176.8	180.3
67.5°	121.7	136.7	152.6	163.6	167.1
70°	106.3	121.3	138.0	149.9	153.0
72.5°	91.3	106.7	124.8	136.2	139.8
75°	75.8	92.2	110.7	123.0	127.0
77.5°	61.3	78.5	97.9	110.2	114.6
80°	48.1	65.7	85.1	98.3	101.9
82.5°	34.8	53.4	72.8	86.4	90.4
85°	23.4	41.9	61.7	75.0	79.4
87.5°	14.6	32.6	52.0	64.8	68.8
90°	7.1	24.7	43.7	56.4	60.0
92.5°	6.6	22.0	41.0	53.4	56.9
95°	5.7	20.3	38.4	50.3	54.2
97.5°	5.3	18.1	36.2	47.6	51.6
100°	4.9	16.3	33.5	45.4	48.5
102.5°	4.9	14.6	31.3	42.8	46.3
105°	4.0	12.8	29.1	40.1	43.7
107.5°	4.0	11.5	26.9	37.9	41.0
110°	3.5	9.7	25.1	35.3	38.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.1	8.4	22.9	32.6	36.2
115°	2.6	6.6	20.7	30.4	33.5
117.5°	2.6	5.3	18.5	27.8	31.3
120°	2.2	3.5	16.3	25.1	28.7
122.5°	2.2	2.2	14.1	22.9	26.0
125°	1.8	1.3	12.3	20.7	23.4
127.5°	1.8	1.3	10.1	18.1	21.2
130°	1.3	0.9	7.9	15.9	18.5
132.5°	1.3	0.9	6.2	13.7	16.3
135°	0.9	0.9	4.0	11.0	13.7
137.5°	0.9	0.4	2.2	8.8	11.0
140°	0.9	0.4	0.9	6.6	8.8
142.5°	0.4	0.4	0.0	4.9	6.6
145°	0.4	0.0	0.0	2.6	4.4
147.5°	0.4	0.0	0.0	0.4	2.2
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	14.15	15.67	14.62	16.14	16.63	15.69	17.22	16.17	17.69	18.18
	3H	15.78	17.17	16.27	17.65	18.19	18.00	19.39	18.49	19.87	20.40
	4H	16.35	17.67	16.86	18.16	18.71	19.06	20.38	19.57	20.87	21.42
	6H	16.73	17.96	17.26	18.46	19.03	20.12	21.34	20.64	21.85	22.41
	8H	16.84	18.01	17.38	18.54	19.12	20.63	21.81	21.17	22.34	22.91
	12H	16.90	18.03	17.44	18.55	19.15	21.19	22.31	21.73	22.84	23.44
4H	2H	14.99	16.31	15.50	16.80	17.35	16.19	17.51	16.71	18.00	18.56
	3H	16.87	17.99	17.40	18.53	19.10	18.72	19.84	19.25	20.38	20.95
	4H	17.58	18.60	18.12	19.15	19.75	19.94	20.97	20.49	21.51	22.12
	6H	18.09	19.00	18.66	19.57	20.19	21.17	22.07	21.74	22.65	23.27
	8H	18.25	19.10	18.82	19.67	20.30	21.78	22.63	22.35	23.20	23.84
	12H	18.35	19.12	18.94	19.72	20.36	22.45	23.22	23.04	23.82	24.45
8H	4H	18.16	19.01	18.73	19.58	20.21	20.20	21.05	20.77	21.62	22.25
	6H	18.85	19.57	19.45	20.18	20.82	21.59	22.31	22.19	22.92	23.56
	8H	19.10	19.75	19.72	20.37	21.02	22.33	22.98	22.94	23.60	24.25
	12H	19.29	19.87	19.90	20.48	21.20	23.16	23.73	23.77	24.34	25.06
12H	4H	18.29	19.06	18.88	19.66	20.30	20.21	20.98	20.80	21.58	22.22
	6H	19.06	19.71	19.68	20.34	20.99	21.64	22.29	22.25	22.91	23.56
	8H	19.40	19.98	20.02	20.59	21.31	22.45	23.02	23.06	23.64	24.35