

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: P243533

Luminaire Tested: S124DRP-H350D835-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243533
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-H350D835-X4F0-XX-UDD-D-W
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

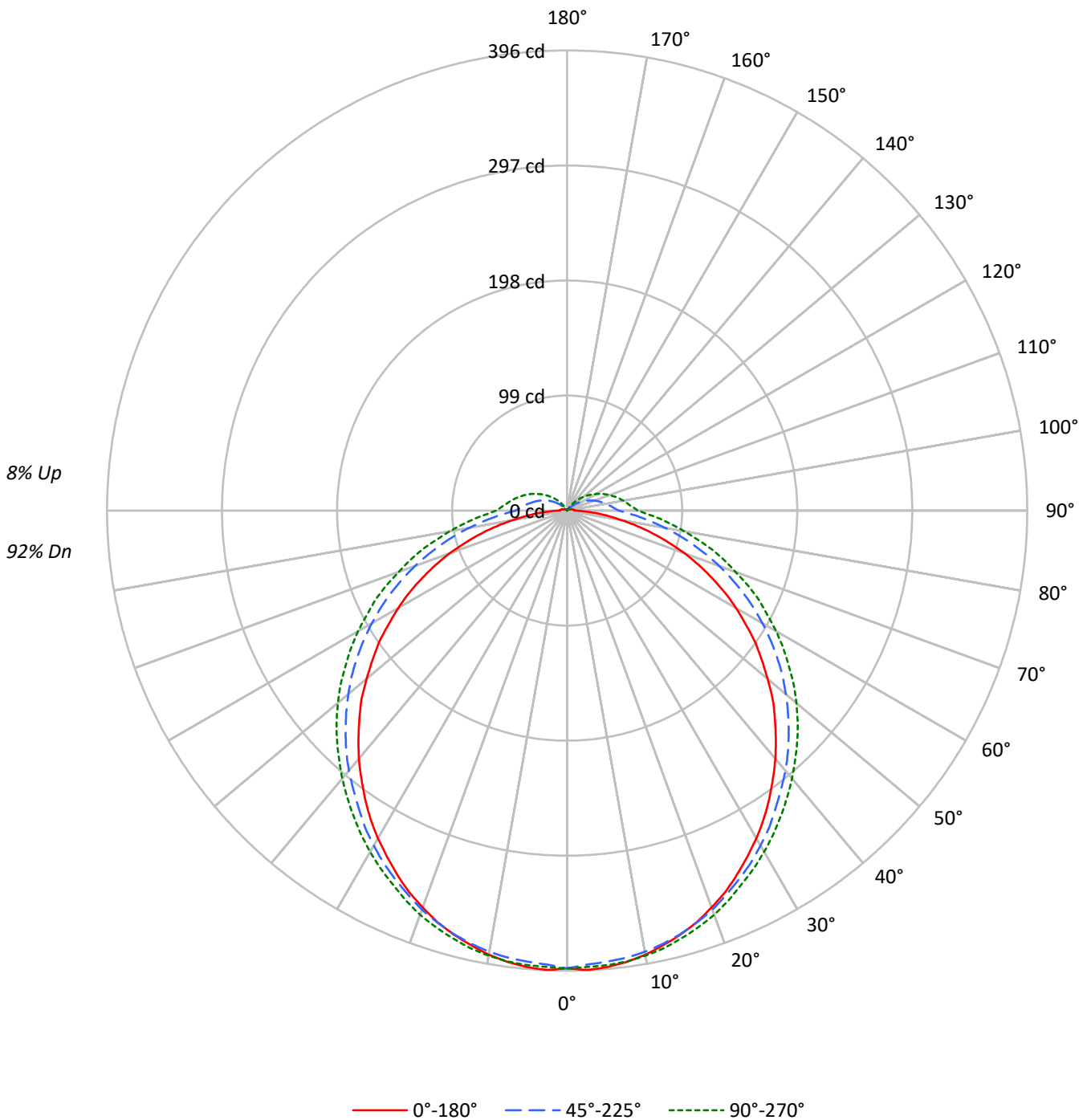
Lumens per Lamp: N/A
Luminaire Lumens: 1346.5 lumens
Efficiency: N/A
Efficacy: 120.2 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.31' x L: 3.88' x H: 0.08')
CIE Type: Direct

Input Watts (W): 11.2
Input Voltage (V): 120
Input Current (A_{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°	3501	3501	3501
5°	3513	3416	3424
10°	3490	3360	3353
15°	3455	3291	3272
20°	3411	3219	3191
25°	3358	3135	3097
30°	3302	3056	3016
35°	3240	2970	2932
40°	3178	2896	2854
45°	3112	2815	2780
50°	3036	2734	2702
55°	2971	2648	2613
60°	2878	2552	2525
65°	2769	2444	2437
70°	2640	2323	2311
75°	2435	2173	2219
80°	2158	2028	2091
85°	1957	1912	2016

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3112 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.3	2.8
10°-20°	106.9	7.9
20°-30°	161.9	12.0
30°-40°	196.0	14.6
40°-50°	207.3	15.4
50°-60°	195.3	14.5
60°-70°	162.3	12.1
70°-80°	114.1	8.5
80°-90°	64.3	4.8
90°-100°	38.1	2.8
100°-110°	28.2	2.1
110°-120°	18.8	1.4
120°-130°	10.6	0.8
130°-140°	4.5	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°	306.1	22.7
0°-40°	502.1	37.3
0°-60°	904.7	67.2
0°-90°	1245.3	92.5
90°-120°	85.2	6.3
90°-150°	101.2	7.5
90°-180°	101.0	7.5
0°-180°	1346.5	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	381	106
25°	346	349	350	355	355	159
35°	303	308	313	319	321	190
45°	253	261	270	278	280	195
55°	198	208	221	230	233	176
65°	138	152	167	178	182	136
75°	77	93	111	124	129	81
85°	24	42	62	76	80	25
90°	7	25	44	56	61	5
95°	6	20	38	51	54	5
105°	4	13	29	40	44	4
115°	3	7	20	30	34	3
125°	2	1	12	20	23	2
135°	1	1	4	11	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°	393.9	393.9	393.9	393.9	393.9
2.5°	395.6	394.4	391.0	393.5	393.1
5°	394.4	392.7	389.7	393.1	392.7
7.5°	391.8	390.6	388.1	391.8	391.4
10°	388.1	387.2	385.6	388.9	388.9
12.5°	383.0	383.0	381.8	385.6	385.6
15°	377.6	378.4	377.2	381.4	381.0
17.5°	371.3	372.2	371.7	375.9	375.9
20°	363.4	364.6	365.5	370.1	370.1
22.5°	355.4	357.1	357.9	363.0	363.0
25°	345.8	348.7	350.0	355.0	355.0
27.5°	335.7	339.5	342.0	346.6	347.5
30°	325.7	329.9	332.8	337.8	339.1
32.5°	314.8	319.0	323.6	328.6	330.3
35°	303.1	308.1	312.7	319.4	320.7
37.5°	290.9	296.8	302.3	309.4	311.0
40°	278.8	285.9	292.2	298.9	301.0
42.5°	265.8	272.9	281.3	288.4	290.5
45°	252.9	260.8	269.6	277.6	280.1
47.5°	239.9	248.2	257.9	266.2	269.2
50°	225.2	234.4	245.7	254.1	257.5
52.5°	211.0	221.0	233.6	242.0	245.7
55°	197.6	208.1	220.6	230.2	232.8
57.5°	182.1	193.8	207.6	218.1	220.6
60°	167.9	179.6	194.2	204.7	207.6
62.5°	153.2	165.8	180.8	191.3	194.2
65°	137.7	151.5	167.0	177.5	182.1
67.5°	122.7	136.5	152.8	164.5	168.3
70°	107.6	121.8	139.4	151.1	154.1
72.5°	91.7	107.2	125.2	137.3	141.5
75°	76.6	92.9	111.4	123.9	128.9
77.5°	62.0	79.1	98.4	111.4	114.7
80°	47.3	66.1	85.4	98.4	102.6
82.5°	35.6	53.2	73.3	87.1	90.4
85°	23.9	42.3	62.4	75.8	80.0
87.5°	14.2	33.1	52.3	64.9	69.1
90°	7.1	24.7	44.4	56.5	60.7
92.5°	6.3	22.2	41.0	53.2	57.4
95°	5.9	20.1	38.5	50.7	54.0
97.5°	5.4	18.4	36.0	47.7	51.5
100°	5.0	16.3	33.9	45.2	49.0
102.5°	4.6	14.7	31.4	42.7	46.5
105°	4.2	13.0	29.3	40.2	44.0
107.5°	3.8	11.3	27.2	37.7	41.4
110°	3.3	9.6	25.1	35.2	38.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.9	8.4	22.6	32.7	36.4
115°	2.9	6.7	20.5	30.1	33.9
117.5°	2.5	5.0	18.4	27.6	31.0
120°	2.5	3.8	16.3	25.1	28.5
122.5°	2.1	2.5	14.2	23.0	26.0
125°	1.7	1.3	12.1	20.5	23.4
127.5°	1.7	1.3	10.0	18.0	20.9
130°	1.3	1.3	8.0	15.5	18.4
132.5°	1.3	0.8	5.9	13.4	15.9
135°	0.8	0.8	3.8	10.9	13.4
137.5°	0.8	0.4	2.5	8.8	11.3
140°	0.8	0.4	0.8	6.7	8.8
142.5°	0.4	0.4	0.0	4.6	6.3
145°	0.4	0.0	0.0	2.5	4.2
147.5°	0.4	0.0	0.0	0.4	2.1
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	14.14	15.67	14.62	16.13	16.63	15.72	17.25	16.20	17.72	18.21
	3H	15.79	17.18	16.28	17.66	18.20	18.03	19.43	18.52	19.90	20.44
	4H	16.36	17.68	16.87	18.17	18.73	19.11	20.42	19.62	20.92	21.47
	6H	16.75	17.97	17.27	18.48	19.05	20.15	21.38	20.68	21.88	22.45
	8H	16.85	18.03	17.39	18.56	19.13	20.67	21.84	21.20	22.37	22.94
	12H	16.92	18.04	17.46	18.57	19.17	21.22	22.35	21.76	22.87	23.47
4H	2H	15.00	16.32	15.51	16.81	17.36	16.23	17.54	16.74	18.04	18.59
	3H	16.89	18.01	17.41	18.54	19.12	18.76	19.88	19.28	20.42	20.99
	4H	17.60	18.62	18.14	19.17	19.78	19.98	21.01	20.53	21.56	22.16
	6H	18.12	19.02	18.68	19.59	20.21	21.21	22.11	21.77	22.68	23.30
	8H	18.27	19.12	18.84	19.69	20.32	21.82	22.67	22.39	23.24	23.87
	12H	18.38	19.15	18.97	19.75	20.38	22.48	23.25	23.07	23.85	24.49
8H	4H	18.18	19.03	18.75	19.60	20.23	20.24	21.09	20.81	21.66	22.29
	6H	18.87	19.59	19.47	20.21	20.84	21.62	22.34	22.22	22.96	23.59
	8H	19.12	19.77	19.74	20.40	21.05	22.36	23.01	22.98	23.63	24.28
	12H	19.31	19.89	19.93	20.50	21.22	23.19	23.77	23.80	24.38	25.09
12H	4H	18.32	19.09	18.91	19.69	20.32	20.26	21.03	20.85	21.63	22.26
	6H	19.09	19.73	19.70	20.36	21.01	21.67	22.32	22.29	22.95	23.60
	8H	19.42	20.00	20.04	20.61	21.33	22.48	23.06	23.09	23.67	24.39