

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: P243538

Luminaire Tested: S124DRP-H575D840-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243538  
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-H575D840-X4F0-XX-UDD-D-W  
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

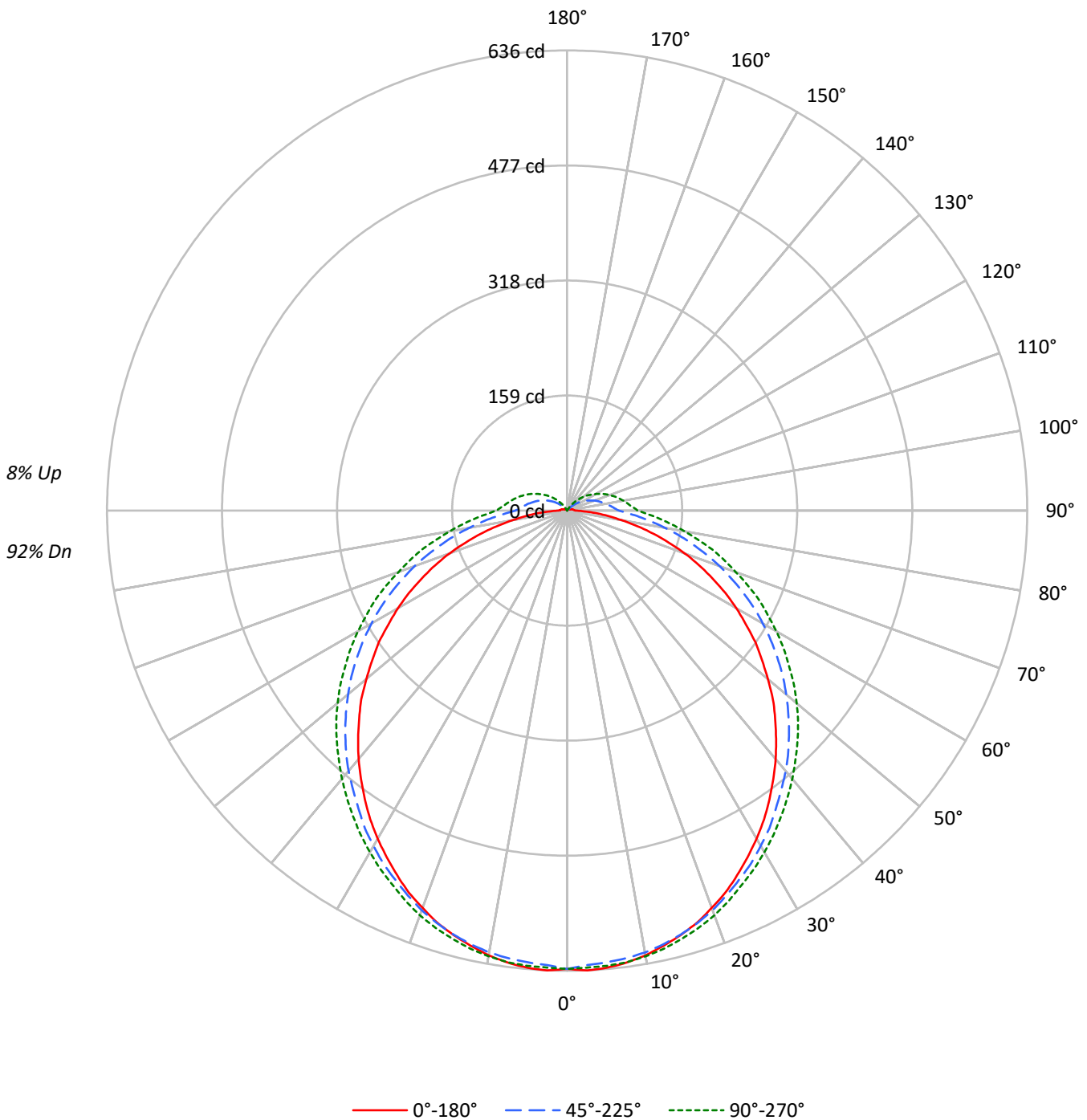
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2165.6 lumens  
Efficiency: N/A  
Efficacy: 125.9 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): 17.2  
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°	5631	5631	5631
5°	5648	5495	5506
10°	5612	5403	5392
15°	5557	5293	5262
20°	5485	5176	5132
25°	5400	5041	4980
30°	5310	4915	4850
35°	5210	4776	4716
40°	5111	4656	4590
45°	5004	4528	4470
50°	4884	4397	4346
55°	4778	4259	4201
60°	4628	4105	4061
65°	4453	3932	3919
70°	4245	3736	3717
75°	3917	3494	3570
80°	3472	3261	3360
85°	3144	3073	3240

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5004 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	60.0	2.8
10°-20°	172.0	7.9
20°-30°	260.3	12.0
30°-40°	315.2	14.6
40°-50°	333.4	15.4
50°-60°	314.1	14.5
60°-70°	261.0	12.1
70°-80°	183.5	8.5
80°-90°	103.3	4.8
90°-100°	61.3	2.8
100°-110°	45.4	2.1
110°-120°	30.3	1.4
120°-130°	17.1	0.8
130°-140°	7.3	0.3
140°-150°	1.4	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	492.3	22.7
0°-40°	807.5	37.3
0°-60°	1455.0	67.2
0°-90°	2002.8	92.5
90°-120°	137.0	6.3
90°-150°	162.8	7.5
90°-180°	163.0	7.5
0°-180°	2165.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	634	634	634	634	634	
5°	634	632	627	632	632	60
15°	607	609	607	613	613	171
25°	556	561	563	571	571	256
35°	487	496	503	514	516	305
45°	407	419	434	446	450	314
55°	318	335	355	370	374	283
65°	222	244	269	286	293	219
75°	123	150	179	199	207	130
85°	38	68	100	122	129	39
90°	11	40	71	91	98	8
95°	9	32	62	82	87	7
105°	7	21	47	65	71	7
115°	5	11	33	48	54	5
125°	3	2	20	33	38	3
135°	1	1	6	18	22	1
145°	1	0	0	4	7	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°	633.5	633.5	633.5	633.5	633.5
2.5°	636.2	634.2	628.8	632.9	632.2
5°	634.2	631.5	626.8	632.2	631.5
7.5°	630.2	628.1	624.1	630.2	629.5
10°	624.1	622.8	620.1	625.5	625.5
12.5°	616.0	616.0	614.0	620.1	620.1
15°	607.3	608.6	606.6	613.3	612.7
17.5°	597.2	598.5	597.9	604.6	604.6
20°	584.4	586.4	587.8	595.2	595.2
22.5°	571.6	574.3	575.6	583.7	583.7
25°	556.1	560.8	562.8	570.9	570.9
27.5°	540.0	546.0	550.1	557.5	558.8
30°	523.8	530.5	535.2	543.3	545.3
32.5°	506.3	513.0	520.4	528.5	531.2
35°	487.4	495.5	502.9	513.7	515.7
37.5°	467.9	477.3	486.1	497.5	500.2
40°	448.4	459.8	469.9	480.7	484.1
42.5°	427.5	439.0	452.4	463.9	467.2
45°	406.6	419.4	433.6	446.4	450.4
47.5°	385.8	399.2	414.7	428.2	432.9
50°	362.2	377.0	395.2	408.7	414.1
52.5°	339.3	355.5	375.7	389.1	395.2
55°	317.8	334.6	354.8	370.3	374.3
57.5°	292.9	311.7	333.9	350.8	354.8
60°	270.0	288.8	312.4	329.2	333.9
62.5°	246.4	266.6	290.8	307.7	312.4
65°	221.5	243.7	268.6	285.5	292.9
67.5°	197.3	219.5	245.7	264.6	270.6
70°	173.0	195.9	224.2	243.0	247.8
72.5°	147.4	172.4	201.3	220.8	227.6
75°	123.2	149.5	179.1	199.3	207.4
77.5°	99.6	127.2	158.2	179.1	184.5
80°	76.1	106.4	137.3	158.2	164.9
82.5°	57.2	85.5	117.8	140.0	145.4
85°	38.4	68.0	100.3	121.9	128.6
87.5°	22.9	53.2	84.2	104.4	111.1
90°	11.4	39.7	71.4	90.9	97.6
92.5°	10.1	35.7	66.0	85.5	92.2
95°	9.4	32.3	61.9	81.5	86.9
97.5°	8.8	29.6	57.9	76.8	82.8
100°	8.1	26.3	54.5	72.7	78.8
102.5°	7.4	23.6	50.5	68.7	74.7
105°	6.7	20.9	47.1	64.6	70.7
107.5°	6.1	18.2	43.8	60.6	66.7
110°	5.4	15.5	40.4	56.6	62.6



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	4.7	13.5	36.4	52.5	58.6
115°	4.7	10.8	33.0	48.5	54.5
117.5°	4.0	8.1	29.6	44.4	49.8
120°	4.0	6.1	26.3	40.4	45.8
122.5°	3.4	4.0	22.9	37.0	41.7
125°	2.7	2.0	19.5	33.0	37.7
127.5°	2.7	2.0	16.2	29.0	33.7
130°	2.0	2.0	12.8	24.9	29.6
132.5°	2.0	1.3	9.4	21.5	25.6
135°	1.3	1.3	6.1	17.5	21.5
137.5°	1.3	0.7	4.0	14.1	18.2
140°	1.3	0.7	1.3	10.8	14.1
142.5°	0.7	0.7	0.0	7.4	10.1
145°	0.7	0.0	0.0	4.0	6.7
147.5°	0.7	0.0	0.0	0.7	3.4
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	15.79	17.32	16.27	17.79	18.28	17.38	18.90	17.85	19.37	19.86
	3H	17.44	18.83	17.93	19.31	19.85	19.69	21.08	20.18	21.55	22.09
	4H	18.01	19.33	18.53	19.83	20.38	20.76	22.07	21.27	22.57	23.12
	6H	18.40	19.62	18.92	20.13	20.70	21.80	23.03	22.33	23.54	24.10
	8H	18.50	19.68	19.04	20.21	20.78	22.32	23.49	22.85	24.02	24.59
	12H	18.57	19.69	19.11	20.22	20.82	22.87	24.00	23.41	24.52	25.12
4H	2H	16.65	17.97	17.16	18.46	19.01	17.88	19.19	18.39	19.69	20.24
	3H	18.54	19.66	19.06	20.20	20.77	20.41	21.53	20.93	22.07	22.64
	4H	19.25	20.28	19.79	20.82	21.43	21.64	22.66	22.18	23.21	23.81
	6H	19.77	20.67	20.33	21.24	21.86	22.86	23.76	23.42	24.33	24.95
	8H	19.92	20.77	20.49	21.34	21.98	23.47	24.32	24.04	24.89	25.52
	12H	20.03	20.80	20.62	21.40	22.03	24.13	24.90	24.72	25.50	26.14
8H	4H	19.83	20.68	20.40	21.25	21.88	21.89	22.74	22.46	23.31	23.94
	6H	20.52	21.24	21.12	21.86	22.49	23.27	23.99	23.88	24.61	25.24
	8H	20.78	21.42	21.39	22.05	22.70	24.01	24.66	24.63	25.28	25.93
	12H	20.96	21.54	21.58	22.15	22.87	24.84	25.42	25.45	26.03	26.74
12H	4H	19.97	20.74	20.56	21.34	21.97	21.91	22.68	22.50	23.28	23.91
	6H	20.74	21.39	21.35	22.01	22.66	23.32	23.97	23.94	24.60	25.25
	8H	21.07	21.65	21.69	22.26	22.98	24.13	24.71	24.74	25.32	26.03