

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: P242678

Luminaire Tested: S124DRP-S575D840-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242678  
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-S575D840-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: -

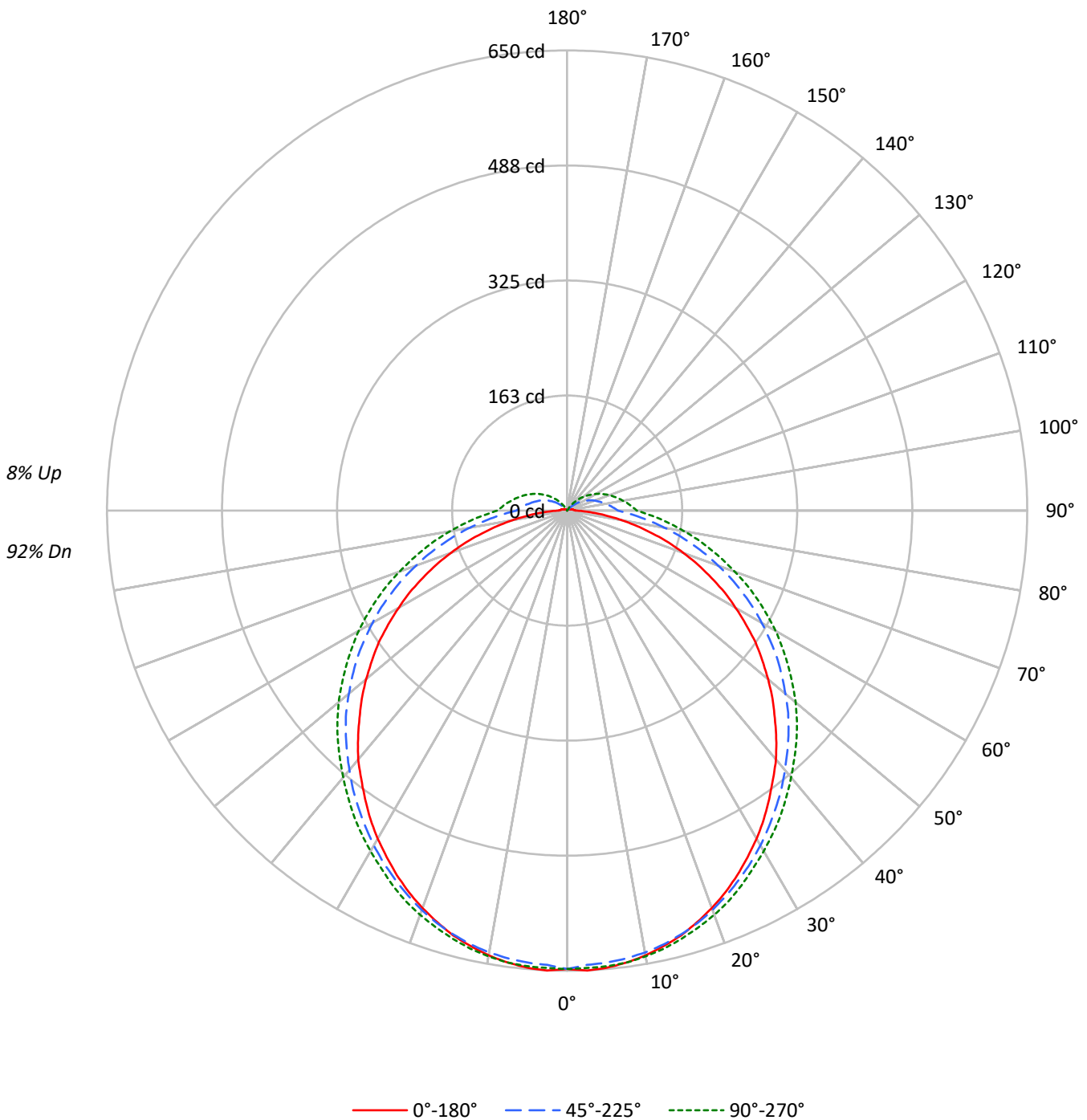
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2207.7 lumens  
Efficiency: N/A  
Efficacy: 117.4 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): 18.8  
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	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°	5756	5756	5756
5°	5773	5619	5634
10°	5738	5521	5513
15°	5686	5410	5375
20°	5608	5287	5239
25°	5520	5150	5092
30°	5425	5014	4940
35°	5317	4875	4807
40°	5232	4743	4668
45°	5105	4619	4548
50°	4996	4477	4421
55°	4884	4343	4273
60°	4710	4173	4136
65°	4520	3990	3969
70°	4290	3782	3774
75°	3965	3551	3594
80°	3604	3322	3413
85°	3144	3110	3288

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5105 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	61.3	2.8
10°-20°	175.8	8.0
20°-30°	265.8	12.0
30°-40°	321.6	14.6
40°-50°	339.9	15.4
50°-60°	319.9	14.5
60°-70°	265.5	12.0
70°-80°	186.3	8.4
80°-90°	105.0	4.8
90°-100°	62.5	2.8
100°-110°	46.3	2.1
110°-120°	31.1	1.4
120°-130°	17.5	0.8
130°-140°	7.6	0.3
140°-150°	1.5	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	502.9	22.8
0°-40°	824.5	37.3
0°-60°	1484.4	67.2
0°-90°	2041.2	92.5
90°-120°	139.9	6.3
90°-150°	166.5	7.5
90°-180°	167.0	7.6
0°-180°	2207.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	648	648	648	648	648	
5°	648	646	641	647	646	62
15°	621	622	620	626	626	175
25°	568	573	575	583	584	262
35°	497	506	513	524	526	311
45°	415	428	442	455	458	321
55°	325	340	362	376	381	289
65°	225	248	273	291	297	223
75°	125	152	182	202	209	133
85°	38	69	102	123	130	40
90°	12	41	72	93	99	8
95°	9	33	63	83	89	8
105°	6	21	48	66	72	7
115°	4	11	34	50	55	5
125°	3	2	20	34	38	3
135°	2	2	6	18	22	1
145°	1	0	0	4	7	1
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°	647.5	647.5	647.5	647.5	647.5
2.5°	650.4	648.2	642.4	647.5	646.8
5°	648.2	646.1	641.0	646.8	646.1
7.5°	643.9	642.4	638.1	644.6	643.9
10°	638.1	637.4	633.7	640.3	639.5
12.5°	630.1	630.1	627.9	633.7	633.7
15°	621.4	622.1	620.0	626.5	625.8
17.5°	609.8	612.0	611.3	617.8	617.1
20°	597.5	599.7	600.4	607.6	607.6
22.5°	583.7	586.6	588.1	595.3	596.8
25°	568.5	572.8	575.0	583.0	583.7
27.5°	551.8	558.3	561.2	568.5	569.2
30°	535.1	540.9	546.0	554.0	555.4
32.5°	517.0	524.3	530.1	539.5	540.9
35°	497.4	506.1	513.4	523.5	525.7
37.5°	477.8	488.0	496.7	506.9	509.0
40°	459.0	468.4	478.6	489.4	492.3
42.5°	437.2	448.1	460.4	472.8	474.9
45°	414.8	428.5	442.3	454.6	458.3
47.5°	393.7	407.5	423.5	435.8	440.1
50°	370.5	386.5	402.4	416.9	421.3
52.5°	347.3	363.3	382.1	396.6	401.0
55°	324.8	340.1	361.8	376.3	380.7
57.5°	299.5	318.3	339.4	356.8	360.4
60°	274.8	293.7	317.6	334.3	340.1
62.5°	250.9	271.9	295.8	312.5	318.3
65°	224.8	248.0	272.6	290.8	296.6
67.5°	200.1	224.8	250.9	269.0	274.8
70°	174.8	199.4	227.0	246.5	251.6
72.5°	150.1	175.5	205.2	224.1	229.9
75°	124.7	151.5	182.0	202.3	208.8
77.5°	100.8	129.1	161.0	181.3	188.5
80°	79.0	108.0	139.9	161.7	167.5
82.5°	57.3	87.7	119.6	142.1	148.6
85°	38.4	68.9	101.5	123.3	130.5
87.5°	23.9	53.7	85.6	106.6	113.1
90°	11.6	40.6	71.8	92.8	98.6
92.5°	10.9	36.3	67.4	87.7	93.5
95°	9.4	33.4	63.1	82.7	89.2
97.5°	8.7	29.7	59.5	78.3	84.8
100°	8.0	26.8	55.1	74.7	79.8
102.5°	8.0	23.9	51.5	70.3	76.1
105°	6.5	21.0	47.9	66.0	71.8
107.5°	6.5	18.9	44.2	62.4	67.4
110°	5.8	16.0	41.3	58.0	63.8



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	5.1	13.8	37.7	53.7	59.5
115°	4.4	10.9	34.1	50.0	55.1
117.5°	4.4	8.7	30.5	45.7	51.5
120°	3.6	5.8	26.8	41.3	47.1
122.5°	3.6	3.6	23.2	37.7	42.8
125°	2.9	2.2	20.3	34.1	38.4
127.5°	2.9	2.2	16.7	29.7	34.8
130°	2.2	1.5	13.1	26.1	30.5
132.5°	2.2	1.5	10.2	22.5	26.8
135°	1.5	1.5	6.5	18.1	22.5
137.5°	1.5	0.7	3.6	14.5	18.1
140°	1.5	0.7	1.5	10.9	14.5
142.5°	0.7	0.7	0.0	8.0	10.9
145°	0.7	0.0	0.0	4.4	7.3
147.5°	0.7	0.0	0.0	0.7	3.6
150°	0.7	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	15.87	17.40	16.35	17.86	18.36	17.42	18.95	17.90	19.42	19.91
	3H	17.51	18.90	18.00	19.38	19.91	19.73	21.12	20.22	21.60	22.13
	4H	18.08	19.39	18.59	19.89	20.44	20.79	22.11	21.30	22.60	23.15
	6H	18.46	19.69	18.98	20.19	20.76	21.84	23.07	22.37	23.58	24.14
	8H	18.57	19.74	19.10	20.27	20.84	22.36	23.54	22.90	24.07	24.64
	12H	18.63	19.75	19.17	20.28	20.88	22.92	24.04	23.46	24.56	25.17
4H	2H	16.72	18.03	17.23	18.53	19.08	17.92	19.24	18.44	19.73	20.28
	3H	18.60	19.72	19.12	20.26	20.83	20.45	21.57	20.98	22.11	22.68
	4H	19.30	20.33	19.85	20.87	21.48	21.67	22.69	22.21	23.24	23.85
	6H	19.82	20.72	20.38	21.30	21.92	22.90	23.80	23.46	24.38	25.00
	8H	19.98	20.83	20.55	21.40	22.03	23.51	24.36	24.08	24.93	25.57
	12H	20.08	20.85	20.67	21.45	22.09	24.17	24.94	24.76	25.54	26.18
8H	4H	19.88	20.73	20.45	21.30	21.94	21.93	22.77	22.49	23.35	23.98
	6H	20.58	21.30	21.18	21.91	22.55	23.32	24.04	23.92	24.65	25.29
	8H	20.83	21.48	21.44	22.10	22.75	24.06	24.71	24.67	25.33	25.98
	12H	21.02	21.59	21.63	22.20	22.92	24.88	25.46	25.50	26.07	26.79
12H	4H	20.02	20.79	20.61	21.39	22.03	21.94	22.71	22.53	23.31	23.95
	6H	20.79	21.44	21.40	22.06	22.71	23.37	24.01	23.98	24.64	25.29
	8H	21.13	21.71	21.74	22.32	23.03	24.18	24.75	24.79	25.36	26.08