

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: P243196

Luminaire Tested: S122DRP-H865D840-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243196  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-53)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S122DRP-H865D840-X4F0-XX-UDD-D-W  
Description: DEFINE 2 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

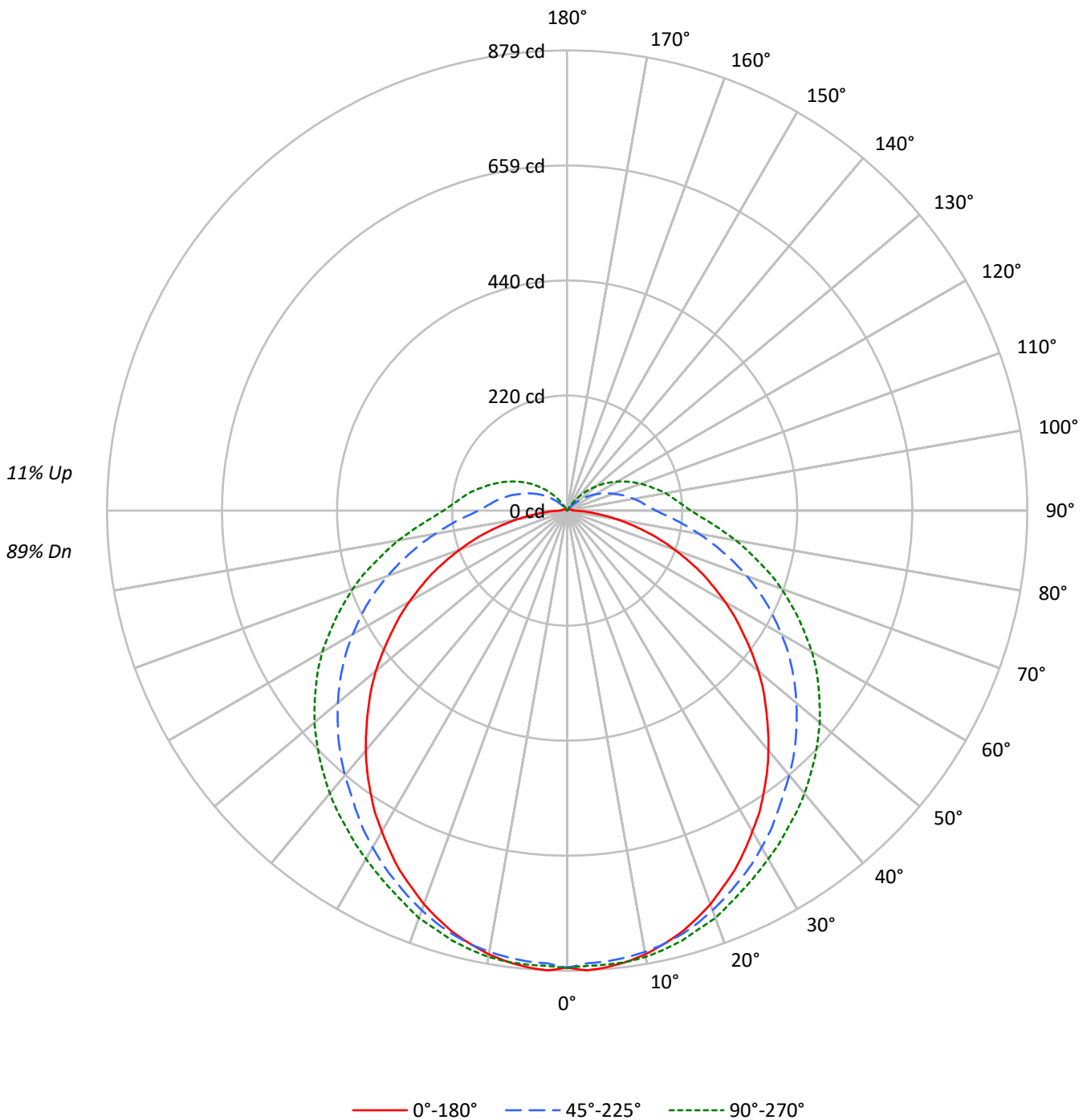
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3350.2 lumens  
Efficiency: N/A  
Efficacy: 106.4 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.15' x L: 3.88' x H: 0.08')  
CIE Type: Semi-Direct  
  
Input Watts (W): 31.5  
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	116	116	116	116	112	112	112	112	105	105	105	98	98	98	92	92	92	89
1	104	98	93	88	100	95	90	86	88	84	81	82	79	76	77	74	72	69
2	93	84	77	70	90	81	74	68	76	70	65	71	66	62	66	62	59	56
3	85	73	64	57	81	71	63	56	66	59	54	62	56	51	58	53	49	46
4	77	64	55	48	74	62	54	47	58	51	45	55	48	43	51	46	41	39
5	71	57	48	41	68	55	47	40	52	44	39	49	42	37	46	40	36	33
6	65	51	42	35	63	50	41	35	47	39	34	44	37	32	41	36	31	29
7	60	46	37	31	58	45	37	30	42	35	29	40	33	28	38	32	28	25
8	56	42	33	27	54	41	33	27	39	31	26	37	30	25	35	29	25	22
9	52	39	30	25	50	38	30	24	36	28	24	34	27	23	32	26	22	20
10	49	36	28	22	47	35	27	22	33	26	21	31	25	21	30	24	20	18

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	16631	16631	16631
5°	16709	15947	15854
10°	16588	15417	15213
15°	16379	14874	14536
20°	16092	14286	13896
25°	15764	13702	13238
30°	15375	13157	12710
35°	15014	12612	12238
40°	14613	12146	11854
45°	14174	11724	11465
50°	13773	11293	11104
55°	13242	10886	10718
60°	12774	10439	10337
65°	12257	9984	9875
70°	11511	9441	9433
75°	10689	8864	8914
80°	9513	8294	8461
85°	8315	7845	8009

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 14174 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	82.8	2.5
10°-20°	237.7	7.1
20°-30°	360.0	10.7
30°-40°	439.1	13.1
40°-50°	472.5	14.1
50°-60°	459.4	13.7
60°-70°	401.6	12.0
70°-80°	309.2	9.2
80°-90°	207.7	6.2
90°-100°	143.8	4.3
100°-110°	105.8	3.2
110°-120°	70.4	2.1
120°-130°	39.8	1.2
130°-140°	17.1	0.5
140°-150°	3.2	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	680.5	20.3
0°-40°	1119.6	33.4
0°-60°	2051.5	61.2
0°-90°	2970.1	88.7
90°-120°	319.9	9.5
90°-150°	380.0	11.3
90°-180°	380.0	11.3
0°-180°	3350.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	873	873	873	873	873	
5°	876	872	865	872	871	83
15°	835	839	839	850	850	235
25°	758	770	779	796	798	349
35°	655	677	702	728	737	410
45°	538	570	618	655	669	415
55°	411	460	524	572	586	368
65°	284	345	421	472	488	280
75°	157	229	309	364	379	165
85°	47	125	208	260	276	49
90°	13	88	169	220	236	9
95°	10	70	147	196	210	8
105°	7	44	112	156	169	8
115°	5	21	78	117	130	5
125°	4	2	46	79	91	3
135°	1	1	16	43	54	1
145°	1	0	0	10	15	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°	873.1	873.1	873.1	873.1	873.1
2.5°	879.2	875.5	865.8	873.1	870.6
5°	875.5	871.9	864.6	871.9	870.6
7.5°	869.4	867.0	860.9	870.6	869.4
10°	860.9	859.7	856.0	865.8	865.8
12.5°	848.8	850.0	848.8	859.7	858.5
15°	835.4	839.0	839.0	850.0	850.0
17.5°	818.4	824.4	826.9	839.0	837.8
20°	800.1	807.4	812.3	825.6	828.1
22.5°	778.2	789.2	796.5	811.1	812.3
25°	757.6	769.7	779.4	796.5	797.7
27.5°	733.2	747.8	762.4	779.4	783.1
30°	707.7	725.9	743.0	763.6	768.5
32.5°	683.4	701.6	723.5	745.4	753.9
35°	655.4	677.3	701.6	728.4	736.9
37.5°	627.4	650.5	679.7	711.3	722.3
40°	598.3	625.0	660.3	694.3	705.3
42.5°	567.9	597.0	639.6	674.9	687.0
45°	537.5	570.3	617.7	655.4	668.8
47.5°	508.3	543.5	594.6	637.2	649.3
50°	476.7	515.6	571.5	615.3	629.9
52.5°	443.8	487.6	548.4	593.4	608.0
55°	411.0	459.6	524.1	571.5	586.1
57.5°	380.6	431.7	499.8	547.2	564.2
60°	347.8	402.5	473.0	522.9	539.9
62.5°	314.9	374.5	446.3	497.3	513.1
65°	284.5	345.3	420.7	471.8	487.6
67.5°	250.5	314.9	392.8	446.3	460.9
70°	218.9	287.0	364.8	418.3	435.3
72.5°	187.3	256.6	336.8	390.3	408.6
75°	156.9	228.6	308.9	363.6	379.4
77.5°	125.2	200.6	282.1	336.8	352.6
80°	97.3	172.7	255.4	310.1	327.1
82.5°	69.3	147.1	231.0	284.5	300.3
85°	47.4	125.2	207.9	260.2	276.0
87.5°	28.0	104.6	186.0	238.3	254.1
90°	13.4	87.6	169.0	220.1	235.9
92.5°	10.9	79.0	156.9	206.7	222.5
95°	9.7	70.5	147.1	195.8	210.4
97.5°	9.7	64.4	138.6	186.0	200.6
100°	8.5	57.2	128.9	175.1	190.9
102.5°	8.5	49.9	120.4	165.4	180.0
105°	7.3	43.8	111.9	155.6	169.0
107.5°	6.1	37.7	102.1	145.9	159.3
110°	6.1	31.6	93.6	136.2	149.6



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	4.9	26.8	86.3	126.5	139.8
115°	4.9	20.7	77.8	116.7	130.1
117.5°	4.9	14.6	69.3	107.0	120.4
120°	3.6	9.7	62.0	98.5	110.7
122.5°	3.6	6.1	53.5	88.8	100.9
125°	3.6	2.4	46.2	79.0	91.2
127.5°	2.4	2.4	37.7	70.5	81.5
130°	2.4	1.2	30.4	60.8	71.7
132.5°	2.4	1.2	23.1	52.3	62.0
135°	1.2	1.2	15.8	42.6	53.5
137.5°	1.2	1.2	8.5	34.0	42.6
140°	1.2	0.0	3.6	25.5	32.8
142.5°	1.2	0.0	0.0	17.0	24.3
145°	1.2	0.0	0.0	9.7	14.6
147.5°	0.0	0.0	0.0	2.4	7.3
150°	0.0	0.0	0.0	0.0	1.2
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	17.99	19.46	18.51	19.99	20.58	21.05	22.53	21.58	23.06	23.64
	3H	19.49	20.84	20.03	21.38	22.00	23.68	25.03	24.22	25.57	26.19
	4H	19.99	21.27	20.55	21.83	22.46	24.96	26.24	25.52	26.80	27.43
	6H	20.31	21.50	20.88	22.07	22.72	26.29	27.48	26.86	28.05	28.70
	8H	20.38	21.53	20.97	22.12	22.78	26.97	28.12	27.56	28.71	29.36
	12H	20.42	21.52	21.01	22.11	22.79	27.72	28.82	28.32	29.41	30.09
4H	2H	19.10	20.39	19.67	20.94	21.58	21.44	22.73	22.00	23.28	23.91
	3H	20.86	21.96	21.44	22.56	23.21	24.29	25.39	24.86	25.98	26.64
	4H	21.51	22.52	22.10	23.12	23.81	25.73	26.74	26.32	27.34	28.02
	6H	21.96	22.86	22.58	23.49	24.18	27.23	28.13	27.84	28.75	29.45
	8H	22.09	22.93	22.71	23.56	24.27	28.01	28.85	28.63	29.48	30.19
	12H	22.17	22.93	22.81	23.59	24.30	28.88	29.65	29.52	30.30	31.02
8H	4H	22.35	23.19	22.97	23.82	24.53	25.92	26.76	26.54	27.39	28.10
	6H	23.01	23.73	23.66	24.40	25.11	27.58	28.30	28.23	28.97	29.68
	8H	23.25	23.89	23.91	24.57	25.30	28.49	29.14	29.15	29.81	30.54
	12H	23.41	23.99	24.08	24.66	25.45	29.52	30.10	30.18	30.77	31.56
12H	4H	22.58	23.35	23.22	24.00	24.72	25.93	26.69	26.57	27.35	28.06
	6H	23.36	24.01	24.02	24.68	25.41	27.62	28.26	28.27	28.94	29.67
	8H	23.70	24.28	24.36	24.94	25.73	28.59	29.16	29.25	29.83	30.62