

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: P243211

Luminaire Tested: S122DRP-H865D940-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243211  
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-H865D940-X4F0-XX-UDD-D-W  
Description: DEFINE 2 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

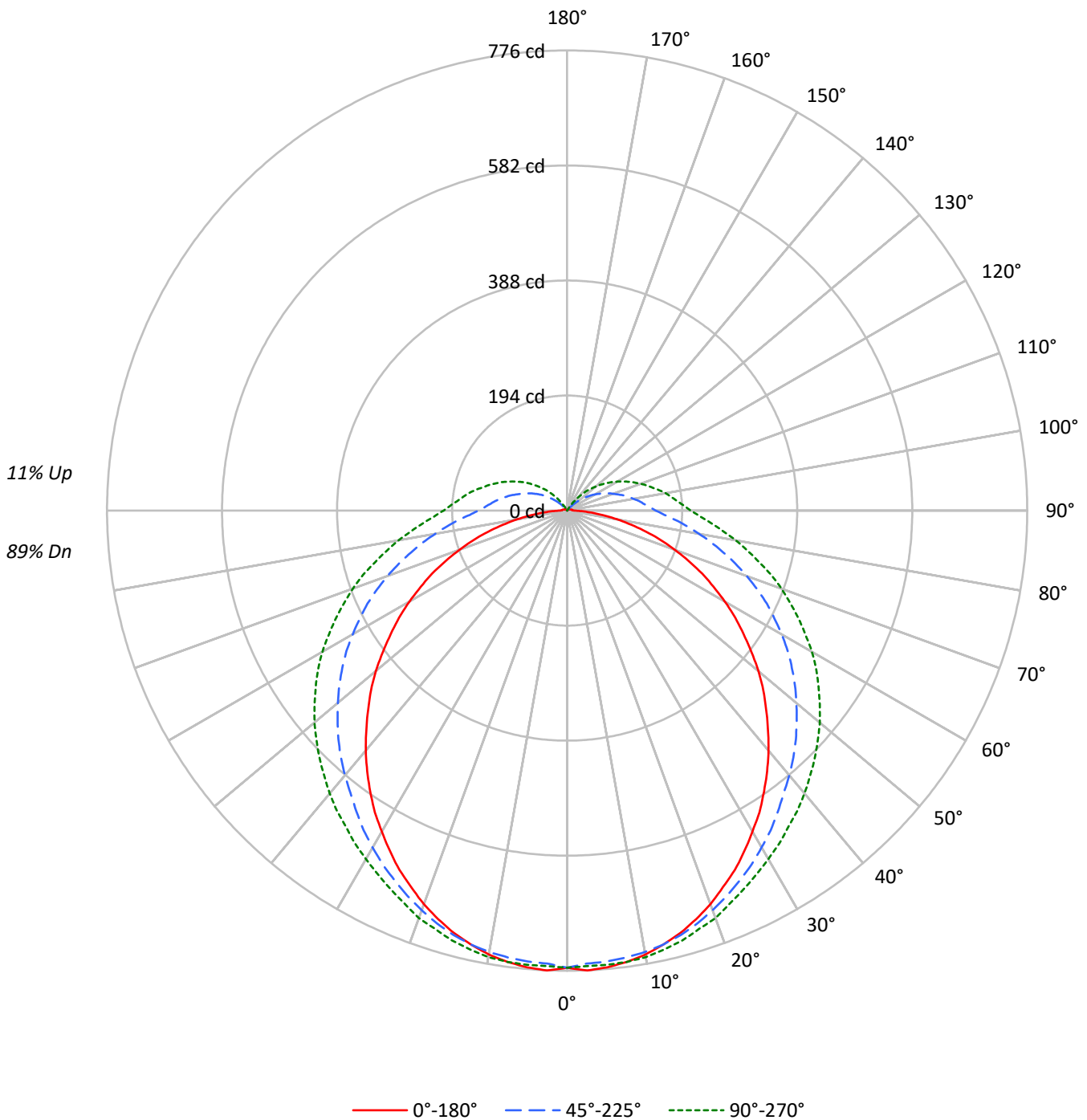
Lumens per Lamp: N/A  
Luminaire Lumens: 2958.3 lumens  
Efficiency: N/A  
Efficacy: 93.9 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.15' x L: 3.88' x H: 0.08')  
CIE Type: Semi-Direct

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°	14684	14684	14684
5°	14754	14080	14000
10°	14648	13614	13433
15°	14462	13135	12835
20°	14210	12613	12270
25°	13919	12099	11690
30°	13576	11616	11223
35°	13257	11136	10807
40°	12903	10724	10467
45°	12515	10352	10123
50°	12161	9971	9805
55°	11692	9613	9463
60°	11279	9218	9127
65°	10823	8817	8721
70°	10165	8336	8330
75°	9436	7825	7870
80°	8398	7323	7470
85°	7350	6928	7072

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 12515 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	73.1	2.5
10°-20°	209.9	7.1
20°-30°	317.9	10.7
30°-40°	387.7	13.1
40°-50°	417.3	14.1
50°-60°	405.7	13.7
60°-70°	354.7	12.0
70°-80°	273.0	9.2
80°-90°	183.4	6.2
90°-100°	127.0	4.3
100°-110°	93.4	3.2
110°-120°	62.2	2.1
120°-130°	35.2	1.2
130°-140°	15.1	0.5
140°-150°	2.8	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	600.9	20.3
0°-40°	988.6	33.4
0°-60°	1811.5	61.2
0°-90°	2622.6	88.7
90°-120°	282.5	9.6
90°-150°	335.6	11.3
90°-180°	336.0	11.4
0°-180°	2958.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	771	771	771	771	771	
5°	773	770	763	770	769	73
15°	738	741	741	750	750	208
25°	669	680	688	703	704	308
35°	579	598	620	643	651	362
45°	475	504	545	579	590	367
55°	363	406	463	505	518	325
65°	251	305	372	417	431	248
75°	138	202	273	321	335	146
85°	42	111	184	230	244	43
90°	12	77	149	194	208	8
95°	9	62	130	173	186	7
105°	6	39	99	137	149	7
115°	4	18	69	103	115	4
125°	3	2	41	70	80	3
135°	1	1	14	38	47	1
145°	1	0	0	9	13	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°	770.9	770.9	770.9	770.9	770.9
2.5°	776.3	773.1	764.5	770.9	768.8
5°	773.1	769.8	763.4	769.8	768.8
7.5°	767.7	765.6	760.2	768.8	767.7
10°	760.2	759.1	755.9	764.5	764.5
12.5°	749.4	750.5	749.4	759.1	758.0
15°	737.6	740.9	740.9	750.5	750.5
17.5°	722.6	728.0	730.1	740.9	739.8
20°	706.5	712.9	717.2	729.0	731.2
22.5°	687.2	696.8	703.3	716.2	717.2
25°	668.9	679.7	688.2	703.3	704.4
27.5°	647.4	660.3	673.2	688.2	691.5
30°	624.9	641.0	656.0	674.3	678.6
32.5°	603.4	619.5	638.9	658.2	665.7
35°	578.7	598.1	619.5	643.2	650.7
37.5°	554.0	574.4	600.2	628.1	637.8
40°	528.3	551.9	583.0	613.1	622.8
42.5°	501.4	527.2	564.8	595.9	606.6
45°	474.6	503.6	545.4	578.7	590.5
47.5°	448.8	479.9	525.0	562.6	573.4
50°	420.9	455.3	504.6	543.3	556.2
52.5°	391.9	430.6	484.2	524.0	536.9
55°	362.9	405.9	462.8	504.6	517.5
57.5°	336.1	381.2	441.3	483.2	498.2
60°	307.1	355.4	417.7	461.7	476.7
62.5°	278.1	330.7	394.1	439.1	453.1
65°	251.2	304.9	371.5	416.6	430.6
67.5°	221.2	278.1	346.8	394.1	406.9
70°	193.3	253.4	322.1	369.4	384.4
72.5°	165.4	226.6	297.4	344.7	360.8
75°	138.5	201.9	272.7	321.0	335.0
77.5°	110.6	177.2	249.1	297.4	311.4
80°	85.9	152.5	225.5	273.8	288.8
82.5°	61.2	129.9	204.0	251.2	265.2
85°	41.9	110.6	183.6	229.8	243.7
87.5°	24.7	92.3	164.3	210.4	224.4
90°	11.8	77.3	149.2	194.3	208.3
92.5°	9.7	69.8	138.5	182.5	196.5
95°	8.6	62.3	129.9	172.9	185.8
97.5°	8.6	56.9	122.4	164.3	177.2
100°	7.5	50.5	113.8	154.6	168.6
102.5°	7.5	44.0	106.3	146.0	158.9
105°	6.4	38.7	98.8	137.4	149.2
107.5°	5.4	33.3	90.2	128.8	140.7
110°	5.4	27.9	82.7	120.3	132.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	4.3	23.6	76.2	111.7	123.5
115°	4.3	18.3	68.7	103.1	114.9
117.5°	4.3	12.9	61.2	94.5	106.3
120°	3.2	8.6	54.8	87.0	97.7
122.5°	3.2	5.4	47.2	78.4	89.1
125°	3.2	2.1	40.8	69.8	80.5
127.5°	2.1	2.1	33.3	62.3	71.9
130°	2.1	1.1	26.8	53.7	63.3
132.5°	2.1	1.1	20.4	46.2	54.8
135°	1.1	1.1	14.0	37.6	47.2
137.5°	1.1	1.1	7.5	30.1	37.6
140°	1.1	0.0	3.2	22.5	29.0
142.5°	1.1	0.0	0.0	15.0	21.5
145°	1.1	0.0	0.0	8.6	12.9
147.5°	0.0	0.0	0.0	2.1	6.4
150°	0.0	0.0	0.0	0.0	1.1
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	17.55	19.03	18.08	19.56	20.14	20.62	22.09	21.14	22.62	23.21
	3H	19.05	20.40	19.59	20.94	21.57	23.25	24.60	23.79	25.14	25.76
	4H	19.56	20.84	20.12	21.40	22.03	24.53	25.81	25.09	26.37	27.00
	6H	19.87	21.07	20.45	21.64	22.29	25.86	27.05	26.43	27.62	28.27
	8H	19.95	21.10	20.54	21.69	22.34	26.54	27.69	27.12	28.28	28.93
	12H	19.99	21.09	20.58	21.68	22.36	27.29	28.39	27.88	28.98	29.66
4H	2H	18.67	19.95	19.23	20.51	21.14	21.01	22.29	21.57	22.85	23.48
	3H	20.43	21.53	21.00	22.12	22.78	23.85	24.95	24.43	25.55	26.20
	4H	21.08	22.09	21.67	22.69	23.38	25.29	26.30	25.89	26.91	27.59
	6H	21.53	22.43	22.14	23.05	23.75	26.80	27.69	27.41	28.32	29.02
	8H	21.66	22.50	22.27	23.13	23.84	27.58	28.42	28.20	29.05	29.76
	12H	21.73	22.50	22.37	23.16	23.87	28.45	29.21	29.09	29.87	30.58
8H	4H	21.92	22.76	22.54	23.39	24.10	25.49	26.33	26.11	26.96	27.67
	6H	22.58	23.30	23.23	23.97	24.68	27.15	27.87	27.80	28.53	29.25
	8H	22.82	23.46	23.47	24.14	24.87	28.06	28.70	28.72	29.38	30.11
	12H	22.98	23.56	23.65	24.23	25.02	29.09	29.67	29.75	30.33	31.12
12H	4H	22.15	22.92	22.79	23.57	24.29	25.49	26.26	26.13	26.91	27.63
	6H	22.93	23.57	23.59	24.25	24.98	27.18	27.83	27.84	28.51	29.23
	8H	23.27	23.84	23.93	24.51	25.30	28.15	28.73	28.82	29.40	30.19