

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: P242331

Luminaire Tested: S122DRP-S865D835-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242331  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S122DRP-S865D835-X4F0-XX-UDD-D-W  
Description: DEFINE 2 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

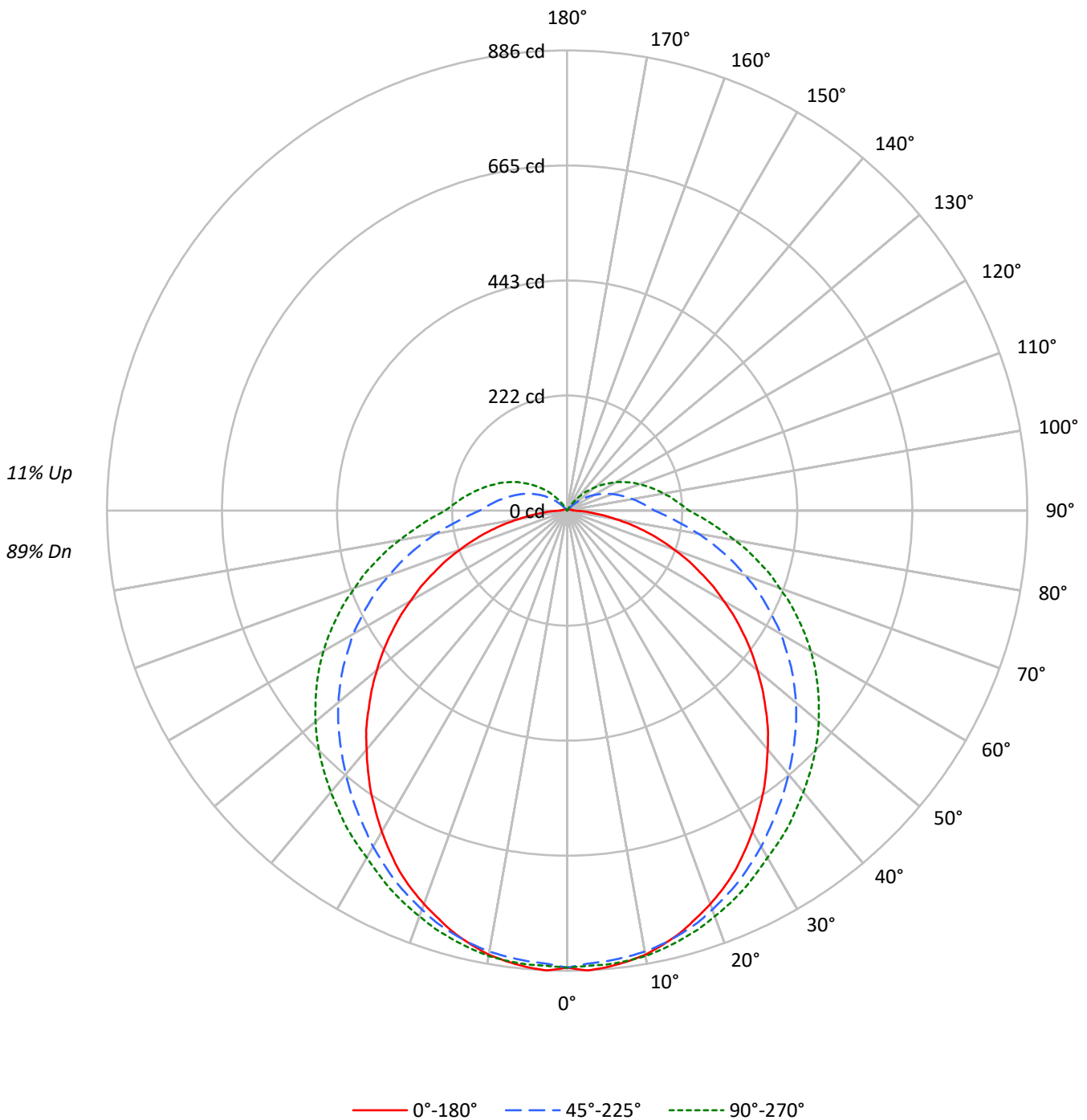
Lumens per Lamp: N/A  
Luminaire Lumens: 3357.5 lumens  
Efficiency: N/A  
Efficacy: 96.5 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.15' x L: 3.88' x H: 0.08')  
CIE Type: Semi-Direct

Input Watts (W): 34.8  
Input Voltage (V): 120  
Input Current (Ain): 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	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	85	81	82	79	77	77	75	72	69				
2	94	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	42	39				
5	71	57	48	41	68	56	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	42	36	31	29				
7	60	46	37	31	58	45	37	31	43	35	30	40	34	29	38	32	28	25				
8	56	42	34	28	54	41	33	27	39	32	26	37	30	25	35	29	25	23				
9	52	39	30	25	50	38	30	24	36	29	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°	16760	16760	16760
5°	16842	16065	15978
10°	16733	15527	15304
15°	16503	14966	14611
20°	16211	14375	13953
25°	15920	13811	13354
30°	15514	13233	12759
35°	15103	12677	12326
40°	14669	12197	11896
45°	14258	11764	11521
50°	13816	11364	11150
55°	13355	10940	10774
60°	12785	10498	10377
65°	12197	9987	9918
70°	11532	9439	9425
75°	10689	8893	8958
80°	9347	8323	8477
85°	8052	7795	8067

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 14258 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	83.4	2.5
10°-20°	239.2	7.1
20°-30°	362.5	10.8
30°-40°	441.4	13.1
40°-50°	474.9	14.1
50°-60°	461.2	13.7
60°-70°	402.8	12.0
70°-80°	310.0	9.2
80°-90°	207.6	6.2
90°-100°	143.2	4.3
100°-110°	104.6	3.1
110°-120°	69.1	2.1
120°-130°	38.5	1.1
130°-140°	16.2	0.5
140°-150°	2.7	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	685.2	20.4
0°-40°	1126.6	33.6
0°-60°	2062.7	61.4
0°-90°	2983.2	88.9
90°-120°	316.9	9.4
90°-150°	374.3	11.1
90°-180°	374.0	11.1
0°-180°	3357.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	880	880	880	880	880	
5°	882	879	871	879	877	84
15°	842	844	844	856	854	237
25°	765	774	786	801	805	352
35°	659	681	705	733	742	412
45°	541	575	620	659	672	417
55°	414	460	527	573	589	371
65°	283	346	421	473	490	281
75°	157	228	310	365	381	166
85°	46	125	207	260	278	48
90°	13	87	168	219	235	9
95°	10	70	147	195	210	8
105°	6	43	110	154	168	7
115°	5	19	76	115	129	5
125°	3	3	43	78	89	3
135°	1	1	14	41	51	1
145°	0	0	0	8	14	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°	879.9	879.9	879.9	879.9	879.9
2.5°	886.3	882.5	873.5	879.9	877.4
5°	882.5	878.6	871.0	878.6	877.4
7.5°	876.1	873.5	867.2	876.1	874.8
10°	868.4	865.9	862.1	872.3	871.0
12.5°	855.7	857.0	854.4	864.6	863.3
15°	841.7	844.2	844.2	855.7	854.4
17.5°	823.8	828.9	832.7	844.2	844.2
20°	806.0	812.3	817.4	831.5	831.5
22.5°	786.8	794.5	802.1	816.2	818.7
25°	765.1	774.1	785.6	800.9	804.7
27.5°	739.6	753.7	766.4	785.6	788.1
30°	714.1	730.7	747.3	767.7	771.5
32.5°	686.1	705.2	725.6	749.8	757.5
35°	659.3	681.0	705.2	733.3	742.2
37.5°	630.0	654.2	684.8	715.4	724.3
40°	600.6	628.7	663.1	696.3	707.8
42.5°	572.6	600.6	641.4	678.4	689.9
45°	540.7	575.1	619.8	659.3	672.1
47.5°	510.1	547.1	598.1	638.9	652.9
50°	478.2	517.8	575.1	618.5	632.5
52.5°	447.6	489.7	550.9	595.5	610.8
55°	414.5	460.4	526.7	572.6	589.2
57.5°	382.6	433.6	499.9	549.6	566.2
60°	348.1	403.0	475.7	524.1	542.0
62.5°	317.5	374.9	447.6	499.9	516.5
65°	283.1	345.6	420.8	473.1	489.7
67.5°	252.5	317.5	394.1	446.3	464.2
70°	219.3	285.7	364.7	419.6	434.9
72.5°	188.7	257.6	337.9	391.5	410.6
75°	156.9	228.3	309.9	364.7	381.3
77.5°	126.2	200.2	283.1	337.9	355.8
80°	95.6	173.4	256.3	309.9	327.7
82.5°	70.1	146.7	230.8	284.4	301.0
85°	45.9	125.0	206.6	260.2	278.0
87.5°	28.1	104.6	186.2	238.5	255.0
90°	12.8	86.7	168.3	219.3	234.6
92.5°	11.5	79.1	156.9	206.6	221.9
95°	10.2	70.1	146.7	195.1	210.4
97.5°	8.9	63.8	137.7	184.9	200.2
100°	8.9	56.1	127.5	174.7	188.7
102.5°	7.7	49.7	118.6	164.5	178.5
105°	6.4	43.4	109.7	154.3	168.3
107.5°	6.4	37.0	100.7	144.1	158.1
110°	5.1	30.6	93.1	133.9	147.9



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	5.1	25.5	84.2	125.0	139.0
115°	5.1	19.1	76.5	114.8	128.8
117.5°	3.8	14.0	67.6	105.8	118.6
120°	3.8	8.9	59.9	95.6	109.7
122.5°	3.8	5.1	52.3	86.7	98.2
125°	2.6	2.6	43.4	77.8	89.3
127.5°	2.6	1.3	35.7	67.6	79.1
130°	2.6	1.3	28.1	58.7	68.9
132.5°	2.6	1.3	20.4	49.7	59.9
135°	1.3	1.3	14.0	40.8	51.0
137.5°	1.3	1.3	7.7	31.9	40.8
140°	1.3	0.0	2.6	23.0	30.6
142.5°	1.3	0.0	0.0	15.3	21.7
145°	0.0	0.0	0.0	7.7	14.0
147.5°	0.0	0.0	0.0	1.3	5.1
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	18.01	19.50	18.54	20.02	20.60	21.08	22.56	21.60	23.08	23.66
	3H	19.51	20.87	20.05	21.41	22.02	23.70	25.06	24.24	25.60	26.21
	4H	20.02	21.30	20.57	21.85	22.48	24.98	26.27	25.54	26.82	27.45
	6H	20.33	21.53	20.90	22.09	22.74	26.32	27.51	26.89	28.08	28.72
	8H	20.41	21.56	20.99	22.14	22.79	27.00	28.15	27.58	28.73	29.38
	12H	20.44	21.55	21.03	22.13	22.81	27.75	28.85	28.34	29.44	30.12
4H	2H	19.12	20.41	19.68	20.96	21.59	21.47	22.75	22.03	23.30	23.93
	3H	20.88	21.98	21.45	22.58	23.23	24.31	25.41	24.88	26.00	26.65
	4H	21.53	22.54	22.12	23.14	23.82	25.75	26.76	26.34	27.36	28.04
	6H	21.98	22.87	22.59	23.50	24.19	27.26	28.15	27.87	28.78	29.47
	8H	22.10	22.95	22.72	23.57	24.28	28.03	28.88	28.65	29.50	30.21
	12H	22.18	22.95	22.81	23.60	24.31	28.90	29.67	29.54	30.32	31.03
8H	4H	22.37	23.21	22.98	23.84	24.54	25.94	26.79	26.56	27.41	28.12
	6H	23.03	23.75	23.67	24.41	25.12	27.60	28.32	28.25	28.99	29.70
	8H	23.26	23.91	23.92	24.58	25.31	28.51	29.16	29.17	29.83	30.55
	12H	23.43	24.00	24.09	24.67	25.45	29.54	30.12	30.20	30.79	31.57
12H	4H	22.60	23.37	23.24	24.02	24.73	25.95	26.72	26.59	27.37	28.08
	6H	23.37	24.02	24.03	24.70	25.42	27.64	28.29	28.29	28.96	29.68
	8H	23.71	24.29	24.37	24.95	25.74	28.60	29.18	29.26	29.85	30.63