

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: P242322

Luminaire Tested: S122DRP-S865D927-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242322  
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-S865D927-X4F0-XX-UDD-D-W  
Description: DEFINE 2 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

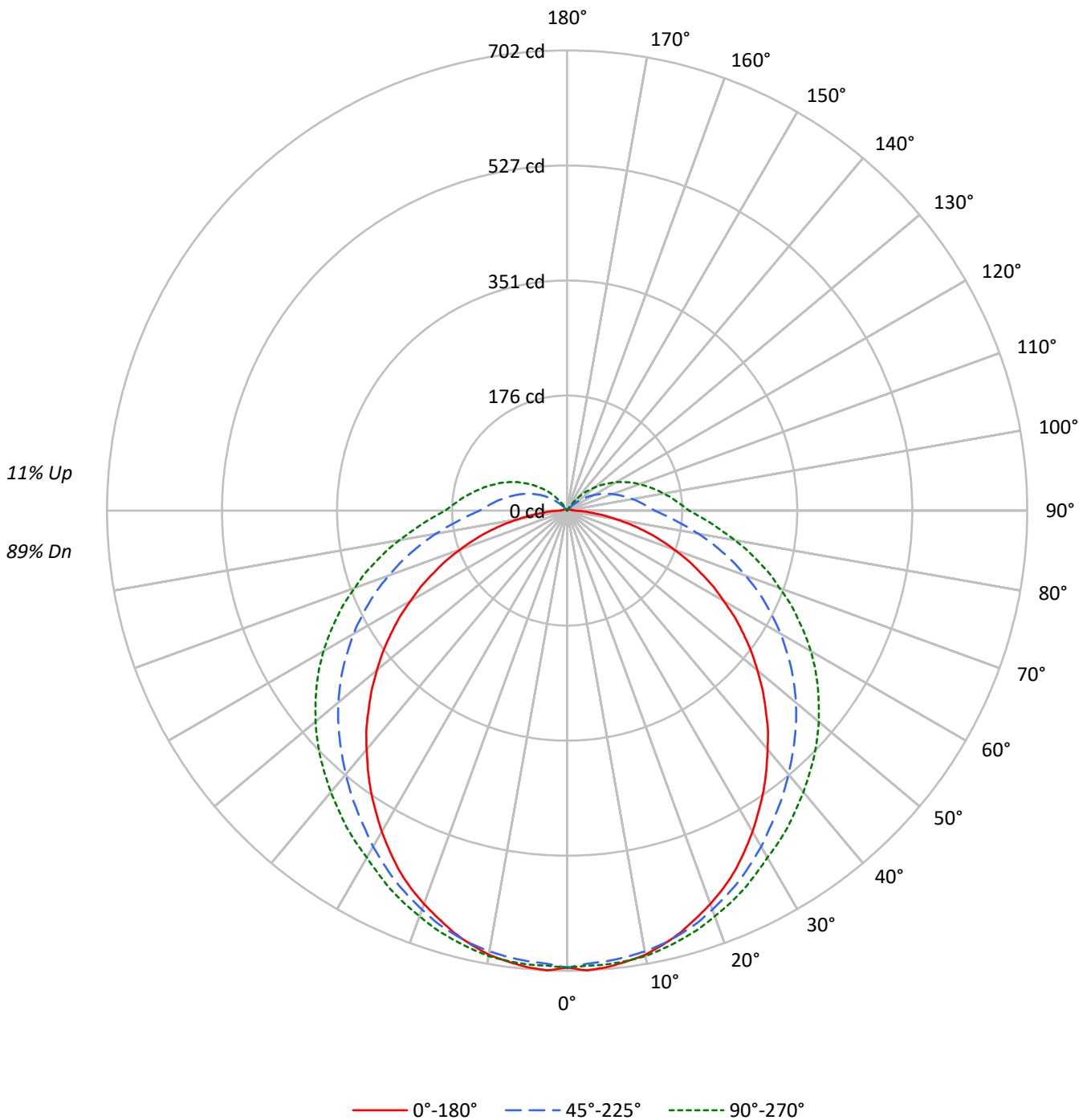
Lumens per Lamp: N/A  
Luminaire Lumens: 2659.7 lumens  
Efficiency: N/A  
Efficacy: 76.4 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.15' x L: 3.88' x H: 0.08')  
CIE Type: Semi-Direct

Input Watts (W): 34.8  
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	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°	13278	13278	13278
5°	13342	12726	12656
10°	13257	12299	12124
15°	13074	11857	11576
20°	12842	11389	11053
25°	12612	10940	10579
30°	12290	10483	10108
35°	11965	10043	9766
40°	11621	9662	9424
45°	11294	9319	9127
50°	10944	9003	8834
55°	10578	8666	8534
60°	10129	8316	8219
65°	9664	7913	7856
70°	9139	7477	7466
75°	8468	7045	7097
80°	7411	6596	6715
85°	6386	6177	6390

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 11294 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	66.1	2.5
10°-20°	189.5	7.1
20°-30°	287.2	10.8
30°-40°	349.7	13.1
40°-50°	376.2	14.1
50°-60°	365.4	13.7
60°-70°	319.1	12.0
70°-80°	245.6	9.2
80°-90°	164.5	6.2
90°-100°	113.5	4.3
100°-110°	82.9	3.1
110°-120°	54.7	2.1
120°-130°	30.5	1.1
130°-140°	12.8	0.5
140°-150°	2.2	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	542.8	20.4
0°-40°	892.5	33.6
0°-60°	1634.1	61.4
0°-90°	2363.2	88.9
90°-120°	251.1	9.4
90°-150°	296.5	11.1
90°-180°	297.0	11.2
0°-180°	2659.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	697	697	697	697	697	
5°	699	696	690	696	695	66
15°	667	669	669	678	677	188
25°	606	613	622	634	638	279
35°	522	540	559	581	588	326
45°	428	456	491	522	532	331
55°	328	365	417	454	467	294
65°	224	274	333	375	388	223
75°	124	181	246	289	302	131
85°	36	99	164	206	220	38
90°	10	69	133	174	186	7
95°	8	56	116	155	167	6
105°	5	34	87	122	133	6
115°	4	15	61	91	102	4
125°	2	2	34	62	71	2
135°	1	1	11	32	40	1
145°	0	0	0	6	11	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°	697.1	697.1	697.1	697.1	697.1
2.5°	702.1	699.1	692.0	697.1	695.0
5°	699.1	696.0	690.0	696.0	695.0
7.5°	694.0	692.0	687.0	694.0	693.0
10°	688.0	685.9	682.9	691.0	690.0
12.5°	677.9	678.9	676.9	684.9	683.9
15°	666.8	668.8	668.8	677.9	676.9
17.5°	652.6	656.6	659.7	668.8	668.8
20°	638.5	643.5	647.6	658.7	658.7
22.5°	623.3	629.4	635.4	646.5	648.6
25°	606.1	613.2	622.3	634.4	637.5
27.5°	585.9	597.0	607.1	622.3	624.3
30°	565.7	578.9	592.0	608.2	611.2
32.5°	543.5	558.7	574.8	594.0	600.1
35°	522.3	539.5	558.7	580.9	588.0
37.5°	499.1	518.2	542.5	566.7	573.8
40°	475.8	498.0	525.3	551.6	560.7
42.5°	453.6	475.8	508.1	537.4	546.5
45°	428.3	455.6	491.0	522.3	532.4
47.5°	404.1	433.4	473.8	506.1	517.2
50°	378.8	410.2	455.6	490.0	501.1
52.5°	354.6	387.9	436.4	471.8	483.9
55°	328.3	364.7	417.2	453.6	466.7
57.5°	303.1	343.5	396.0	435.4	448.5
60°	275.8	319.2	376.8	415.2	429.3
62.5°	251.5	297.0	354.6	396.0	409.1
65°	224.3	273.8	333.4	374.8	387.9
67.5°	200.0	251.5	312.2	353.6	367.7
70°	173.8	226.3	288.9	332.4	344.5
72.5°	149.5	204.1	267.7	310.1	325.3
75°	124.3	180.8	245.5	288.9	302.1
77.5°	100.0	158.6	224.3	267.7	281.9
80°	75.8	137.4	203.1	245.5	259.6
82.5°	55.6	116.2	182.9	225.3	238.4
85°	36.4	99.0	163.7	206.1	220.2
87.5°	22.2	82.8	147.5	188.9	202.0
90°	10.1	68.7	133.4	173.8	185.9
92.5°	9.1	62.6	124.3	163.7	175.8
95°	8.1	55.6	116.2	154.6	166.7
97.5°	7.1	50.5	109.1	146.5	158.6
100°	7.1	44.5	101.0	138.4	149.5
102.5°	6.1	39.4	94.0	130.3	141.4
105°	5.1	34.3	86.9	122.2	133.4
107.5°	5.1	29.3	79.8	114.2	125.3
110°	4.0	24.2	73.7	106.1	117.2



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	4.0	20.2	66.7	99.0	110.1
115°	4.0	15.2	60.6	90.9	102.0
117.5°	3.0	11.1	53.5	83.8	94.0
120°	3.0	7.1	47.5	75.8	86.9
122.5°	3.0	4.0	41.4	68.7	77.8
125°	2.0	2.0	34.3	61.6	70.7
127.5°	2.0	1.0	28.3	53.5	62.6
130°	2.0	1.0	22.2	46.5	54.6
132.5°	2.0	1.0	16.2	39.4	47.5
135°	1.0	1.0	11.1	32.3	40.4
137.5°	1.0	1.0	6.1	25.3	32.3
140°	1.0	0.0	2.0	18.2	24.2
142.5°	1.0	0.0	0.0	12.1	17.2
145°	0.0	0.0	0.0	6.1	11.1
147.5°	0.0	0.0	0.0	1.0	4.0
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	17.21	18.69	17.73	19.21	19.79	20.27	21.75	20.79	22.28	22.85
	3H	18.71	20.06	19.24	20.60	21.21	22.89	24.25	23.43	24.79	25.40
	4H	19.21	20.49	19.76	21.04	21.67	24.17	25.46	24.73	26.01	26.64
	6H	19.52	20.72	20.09	21.28	21.93	25.51	26.71	26.08	27.27	27.91
	8H	19.60	20.75	20.18	21.33	21.98	26.19	27.34	26.77	27.92	28.57
	12H	19.63	20.74	20.22	21.32	22.00	26.94	28.04	27.53	28.63	29.31
4H	2H	18.32	19.60	18.87	20.15	20.78	20.66	21.94	21.22	22.50	23.12
	3H	20.07	21.17	20.64	21.77	22.42	23.50	24.60	24.07	25.19	25.84
	4H	20.72	21.73	21.31	22.33	23.01	24.94	25.95	25.53	26.55	27.23
	6H	21.17	22.06	21.78	22.69	23.38	26.45	27.34	27.06	27.97	28.66
	8H	21.29	22.14	21.91	22.76	23.47	27.23	28.07	27.84	28.69	29.40
	12H	21.37	22.14	22.01	22.79	23.50	28.09	28.86	28.73	29.51	30.22
8H	4H	21.56	22.40	22.17	23.03	23.73	25.13	25.98	25.75	26.60	27.31
	6H	22.22	22.94	22.87	23.60	24.31	26.80	27.51	27.44	28.18	28.89
	8H	22.45	23.10	23.11	23.77	24.50	27.70	28.35	28.36	29.02	29.74
	12H	22.62	23.20	23.28	23.86	24.65	28.73	29.31	29.39	29.98	30.76
12H	4H	21.79	22.56	22.43	23.21	23.92	25.14	25.91	25.78	26.56	27.27
	6H	22.56	23.21	23.22	23.89	24.61	26.83	27.48	27.49	28.15	28.87
	8H	22.90	23.48	23.56	24.14	24.93	27.79	28.37	28.46	29.04	29.82