

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P912528

Luminaire Tested: DFN2DIP-TR2F0-060D030US850-FLLFLL

Issue Date: 11/21/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P912528  
REPORT IS A COMBINATION OF REPORTS P900239 AND P897145  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-TR2F0-060D030US850-FLLFLL  
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

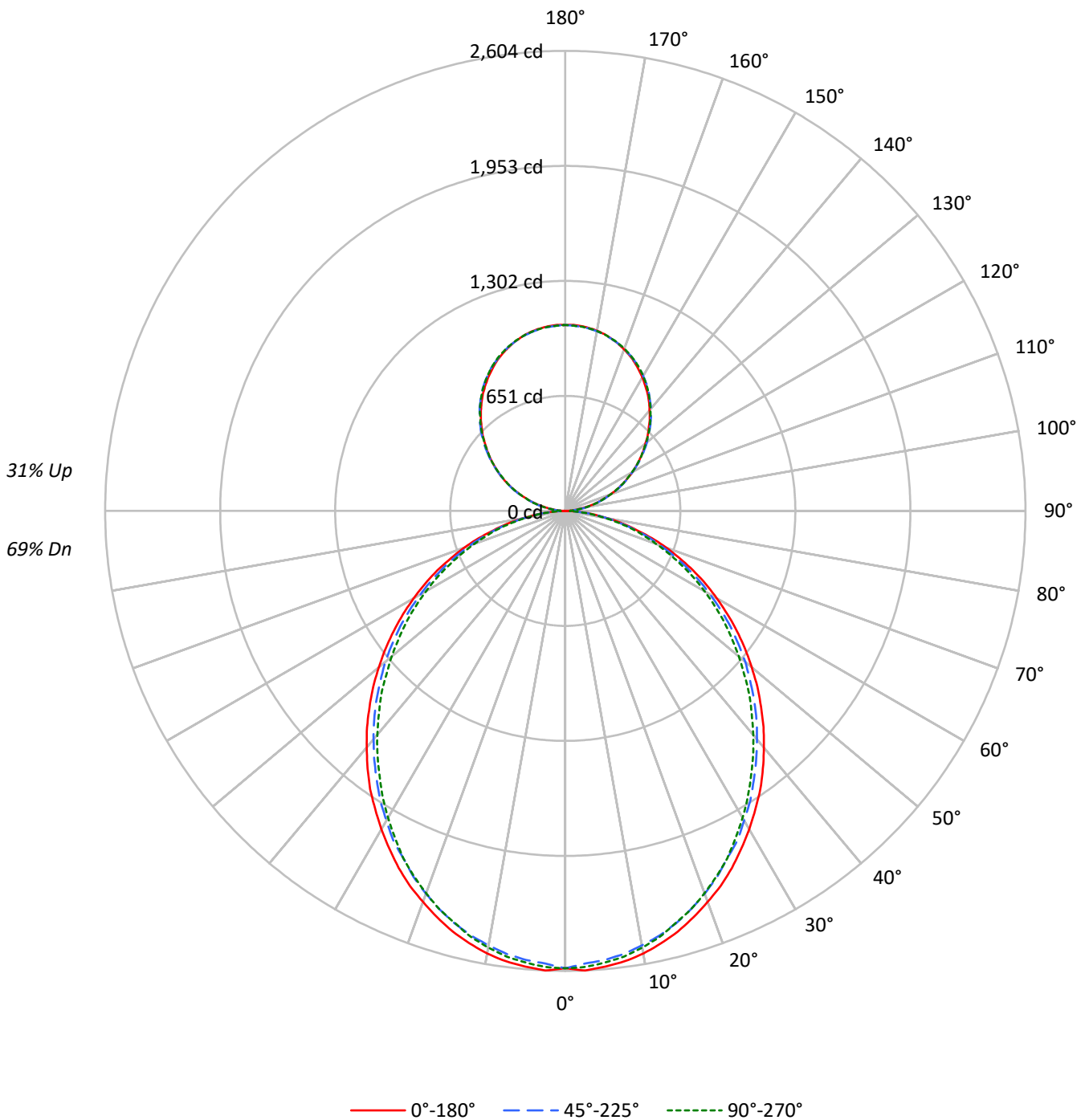
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9531.8 lumens  
Efficiency: N/A  
Efficacy: 117.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')  
CIE Type: Semi-Direct

Input Watts (W): 81.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: 0.9971  
Total Harmonic Distortion (THDi): 0.049  
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	112	112	112	112	106	106	106	106	94	94	94	83	83	83	74	74	74	69			
1	102	98	94	90	96	92	89	86	83	80	77	74	71	70	65	64	62	58			
2	93	85	79	74	88	81	75	70	72	68	64	65	61	58	57	55	52	49			
3	85	75	67	61	80	71	64	59	64	58	54	57	53	49	51	48	45	41			
4	78	67	58	52	73	63	56	50	57	51	46	51	46	42	46	42	39	35			
5	71	59	51	45	67	56	49	43	51	45	40	46	41	37	41	37	34	31			
6	66	53	45	39	62	51	43	38	46	40	35	41	36	32	37	33	30	27			
7	61	48	40	34	58	46	39	33	42	36	31	38	33	29	34	30	26	24			
8	57	44	36	31	54	42	35	30	38	32	28	35	29	26	31	27	24	22			
9	53	40	33	27	50	39	31	26	35	29	25	32	27	23	29	25	21	19			
10	50	37	30	25	47	36	29	24	32	27	22	30	25	21	27	23	20	18			

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

	0°	45°	90°
0°	5775	5775	5775
5°	5775	5681	5723
10°	5720	5592	5635
15°	5627	5487	5505
20°	5505	5346	5371
25°	5383	5181	5218
30°	5233	5026	5026
35°	5089	4845	4824
40°	4914	4662	4630
45°	4739	4477	4432
50°	4547	4284	4204
55°	4346	4060	3991
60°	4118	3796	3748
65°	3867	3521	3461
70°	3549	3185	3149
75°	3111	2783	2849
80°	2580	2270	2303
85°	1757	1430	1431

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4739 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	243.7	2.6
10°-20°	685.6	7.2
20°-30°	1007.6	10.6
30°-40°	1170.3	12.3
40°-50°	1168.8	12.3
50°-60°	1019.2	10.7
60°-70°	753.4	7.9
70°-80°	426.3	4.5
80°-90°	115.5	1.2
90°-100°	65.1	0.7
100°-110°	206.9	2.2
110°-120°	354.0	3.7
120°-130°	465.6	4.9
130°-140°	522.6	5.5
140°-150°	512.5	5.4
150°-160°	429.9	4.5
160°-170°	285.1	3.0
170°-180°	99.7	1.0
0°-30°	1937.0	20.3
0°-40°	3107.2	32.6
0°-60°	5295.3	55.6
0°-90°	6590.4	69.1
90°-120°	626.0	6.6
90°-150°	2126.7	22.3
90°-180°	2941.0	30.9
0°-180°	9531.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2589	2589	2589	2589	2589	
5°	2589	2579	2552	2572	2567	246
15°	2465	2450	2417	2428	2415	694
25°	2231	2211	2168	2173	2168	1026
35°	1925	1900	1860	1845	1832	1202
45°	1566	1549	1511	1484	1474	1209
55°	1185	1170	1140	1110	1098	1060
65°	799	784	759	737	724	790
75°	418	413	401	386	391	446
85°	102	100	97	90	87	114
90°	1	11	31	29	30	9
95°	46	55	57	57	55	52
105°	191	194	195	197	197	202
115°	355	360	359	358	355	351
125°	517	525	522	519	518	462
135°	668	678	680	679	677	517
145°	812	818	823	824	820	507
155°	928	930	933	938	935	427
165°	1009	1008	1008	1015	1010	285
175°	1050	1048	1046	1052	1047	100
180°	1052	1052	1052	1052	1052	



TEST NUMBER: P912528

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2589.1	2589.1	2589.1	2589.1	2589.1
2.5°	2604.2	2591.7	2564.2	2589.1	2584.3
5°	2589.1	2579.3	2551.8	2571.7	2566.9
7.5°	2571.7	2556.9	2529.4	2549.5	2544.5
10°	2544.5	2527.1	2497.1	2517.0	2509.6
12.5°	2507.0	2492.1	2462.3	2474.7	2469.7
15°	2464.6	2449.9	2417.4	2427.5	2415.1
17.5°	2412.4	2397.7	2365.2	2377.5	2365.2
20°	2355.1	2340.3	2305.4	2312.8	2303.1
22.5°	2298.1	2275.6	2243.1	2243.1	2238.1
25°	2230.6	2210.9	2168.5	2173.3	2168.5
27.5°	2155.9	2138.5	2106.2	2098.9	2086.5
30°	2081.5	2061.3	2024.1	2016.7	2006.6
32.5°	2001.6	1986.9	1947.0	1931.9	1921.9
35°	1924.6	1899.7	1859.8	1844.7	1832.3
37.5°	1837.4	1814.9	1775.1	1757.5	1745.1
40°	1747.8	1727.7	1687.9	1665.7	1655.6
42.5°	1660.6	1640.5	1601.0	1575.9	1561.0
45°	1566.1	1548.6	1511.1	1484.0	1473.9
47.5°	1473.9	1456.4	1416.6	1389.1	1374.3
50°	1376.7	1364.3	1329.5	1294.5	1282.1
52.5°	1282.1	1264.7	1232.4	1205.0	1187.6
55°	1185.2	1170.1	1140.3	1110.4	1098.0
57.5°	1088.0	1075.6	1043.1	1013.3	1003.2
60°	990.8	981.0	946.2	918.7	911.3
62.5°	896.2	878.8	853.9	829.1	819.1
65°	799.3	784.3	759.4	736.9	724.5
67.5°	699.7	687.0	664.8	647.4	637.3
70°	607.5	597.5	575.0	557.6	547.8
72.5°	512.9	502.9	490.5	473.1	465.7
75°	418.1	413.4	400.7	385.9	390.9
77.5°	333.6	323.6	318.5	311.2	303.8
80°	249.1	246.4	241.4	234.0	229.0
82.5°	169.3	169.3	166.9	156.9	156.9
85°	101.9	99.6	97.1	89.5	87.2
87.5°	44.9	39.9	34.8	27.5	24.8
90°	1.0	11.4	31.1	29.2	30.2
92.5°	19.6	26.6	27.6	28.5	28.5
95°	46.4	55.2	56.8	56.8	55.2
97.5°	77.1	85.3	88.8	88.8	88.8
100°	112.6	119.9	122.4	122.4	121.5
102.5°	150.0	155.5	158.9	159.9	158.9
105°	191.0	193.5	195.4	197.0	197.0
107.5°	231.6	235.3	235.3	236.0	231.6
110°	270.9	276.0	276.0	276.0	273.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	313.4	318.8	317.8	315.3	313.4
115°	355.3	360.3	358.8	357.9	355.3
117.5°	396.8	403.8	399.4	396.8	394.2
120°	438.7	445.7	438.7	438.7	435.8
122.5°	476.8	485.6	481.2	478.6	476.8
125°	516.8	524.7	522.1	519.2	518.3
127.5°	555.7	565.6	562.2	558.3	555.7
130°	592.2	603.6	602.1	600.2	596.6
132.5°	633.1	642.0	642.7	638.2	635.7
135°	668.4	678.2	680.1	679.2	676.6
137.5°	707.7	715.6	717.2	716.6	712.8
140°	742.3	750.2	754.7	754.7	751.1
142.5°	777.9	785.7	788.3	789.3	785.7
145°	811.5	817.8	822.9	823.8	820.3
147.5°	841.6	849.5	853.3	854.9	851.4
150°	872.7	878.1	881.5	884.4	881.5
152.5°	900.3	905.6	910.0	913.6	910.0
155°	927.9	930.3	933.2	937.7	934.9
157.5°	951.6	953.5	955.2	961.5	957.1
160°	972.9	974.8	975.8	981.1	977.4
162.5°	992.6	992.6	993.6	999.5	995.1
165°	1009.4	1008.4	1008.4	1014.7	1010.3
167.5°	1024.6	1021.7	1021.7	1028.0	1023.6
170°	1036.0	1033.5	1032.6	1038.9	1033.5
172.5°	1043.9	1041.5	1040.5	1046.8	1041.5
175°	1050.3	1047.8	1045.9	1052.2	1046.8
177.5°	1053.8	1051.2	1049.3	1054.8	1049.3
180°	1052.2	1052.2	1052.2	1052.2	1052.2



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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	14.84	15.90	15.61	16.70	17.67	14.42	15.48	15.19	16.28	17.24
	3H	16.49	17.45	17.28	18.25	19.25	16.03	16.99	16.82	17.79	18.79
	4H	17.07	17.97	17.88	18.79	19.80	16.61	17.51	17.42	18.33	19.34
	6H	17.46	18.30	18.28	19.12	20.14	17.00	17.84	17.82	18.66	19.68
	8H	17.56	18.36	18.39	19.20	20.22	17.11	17.90	17.93	18.74	19.77
	12H	17.61	18.37	18.44	19.20	20.25	17.15	17.90	17.98	18.74	19.79
4H	2H	15.31	16.22	16.12	17.03	18.04	14.98	15.88	15.78	16.69	17.70
	3H	17.17	17.93	17.99	18.77	19.80	16.79	17.54	17.61	18.39	19.42
	4H	17.88	18.56	18.71	19.41	20.46	17.48	18.17	18.31	19.01	20.07
	6H	18.38	18.97	19.23	19.84	20.90	17.98	18.58	18.83	19.45	20.51
	8H	18.52	19.08	19.38	19.94	21.01	18.13	18.68	18.98	19.55	20.62
	12H	18.59	19.09	19.47	19.98	21.06	18.19	18.69	19.06	19.58	20.65
8H	4H	18.08	18.63	18.93	19.50	20.57	17.73	18.28	18.58	19.15	20.22
	6H	18.69	19.15	19.57	20.06	21.13	18.34	18.80	19.22	19.71	20.78
	8H	18.90	19.31	19.79	20.21	21.29	18.54	18.95	19.43	19.85	20.94
	12H	19.02	19.38	19.92	20.28	21.42	18.65	19.01	19.55	19.91	21.05
12H	4H	18.07	18.57	18.94	19.46	20.53	17.73	18.23	18.60	19.11	20.19
	6H	18.72	19.13	19.61	20.03	21.12	18.37	18.78	19.27	19.69	20.77
	8H	18.95	19.31	19.85	20.20	21.35	18.61	18.96	19.50	19.86	21.00