

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: P912490

Luminaire Tested: DFN2DIP-TR2F0-040D030US850-RLLFLL

Issue Date: 11/21/2024

**Test Information**

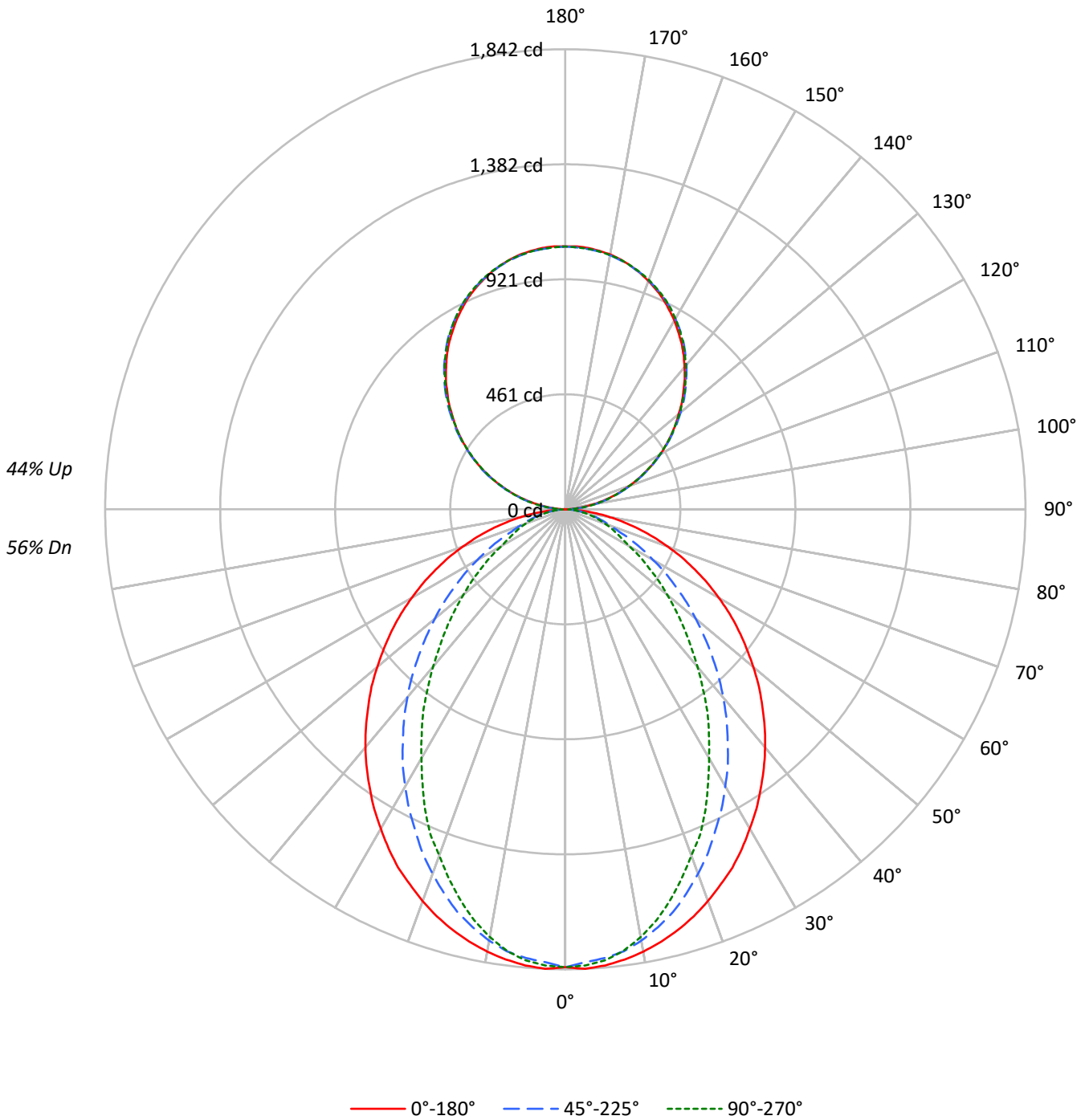
Test Method: LM-79-2019  
Report Number: P912490  
REPORT IS A COMBINATION OF REPORTS P900236 AND P897145  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-TR2F0-040D030US850-RLLFLL  
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6714.9 lumens  
Efficiency: N/A  
Efficacy: 116.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')  
CIE Type: General Diffuse  
  
Input Watts (W): 57.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9933  
Total Harmonic Distortion (THDi): 0.066  
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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	56	56	56	56
1	100	96	92	88	93	89	86	83	77	75	72	66	64	63	55	54	53	48	48	48	48
2	91	84	78	73	85	79	73	69	68	64	61	58	56	53	49	47	46	41	41	41	41
3	84	74	67	62	78	70	63	58	61	56	52	52	49	46	44	42	40	36	36	36	36
4	77	66	59	53	71	62	55	50	54	49	45	47	43	40	40	37	35	31	31	31	31
5	71	59	51	46	66	56	49	43	49	43	39	42	38	35	36	33	30	27	27	27	27
6	65	53	46	40	61	50	43	38	44	38	34	38	34	31	33	30	27	24	24	24	24
7	61	48	41	35	56	46	39	34	40	35	30	35	31	27	30	27	24	22	22	22	22
8	56	44	37	31	52	42	35	30	37	31	27	32	28	25	28	25	22	20	20	20	20
9	53	41	33	28	49	38	32	27	34	28	25	30	25	22	26	23	20	18	18	18	18
10	49	37	30	25	46	35	29	24	31	26	22	28	23	20	24	21	18	16	16	16	16

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

	0°	45°	90°
0°	4089	4089	4089
5°	4090	4015	4043
10°	4043	3927	3905
15°	3981	3789	3695
20°	3902	3601	3440
25°	3820	3393	3194
30°	3712	3180	2884
35°	3607	2952	2612
40°	3499	2718	2302
45°	3374	2458	2021
50°	3244	2197	1747
55°	3109	1920	1484
60°	2951	1631	1215
65°	2770	1338	1085
70°	2549	1066	972
75°	2271	922	872
80°	1872	748	735
85°	1229	464	517

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3374 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	171.8	2.6
10°-20°	471.7	7.0
20°-30°	662.3	9.9
30°-40°	721.9	10.8
40°-50°	663.5	9.9
50°-60°	521.1	7.8
60°-70°	339.2	5.1
70°-80°	174.6	2.6
80°-90°	47.6	0.7
90°-100°	65.1	1.0
100°-110°	206.9	3.1
110°-120°	354.0	5.3
120°-130°	465.6	6.9
130°-140°	522.6	7.8
140°-150°	512.5	7.6
150°-160°	429.9	6.4
160°-170°	285.1	4.2
170°-180°	99.7	1.5
0°-30°	1305.8	19.4
0°-40°	2027.7	30.2
0°-60°	3212.2	47.8
0°-90°	3773.6	56.2
90°-120°	626.0	9.3
90°-150°	2126.7	31.7
90°-180°	2941.0	43.8
0°-180°	6714.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1833	1833	1833	1833	1833	
5°	1833	1825	1804	1818	1814	174
15°	1744	1726	1669	1638	1621	491
25°	1583	1530	1420	1352	1327	728
35°	1364	1279	1133	1029	992	854
45°	1115	1004	830	712	672	861
55°	848	718	539	440	408	758
65°	572	438	289	232	227	568
75°	305	189	133	121	120	323
85°	71	36	32	32	32	82
90°	1	11	31	29	30	7
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	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1833.4	1833.4	1833.4	1833.4	1833.4
2.5°	1841.7	1833.4	1815.1	1831.8	1828.4
5°	1833.4	1825.1	1803.5	1818.4	1813.5
7.5°	1818.4	1808.6	1785.4	1791.8	1783.6
10°	1798.6	1786.9	1753.8	1748.7	1738.9
12.5°	1773.7	1758.8	1713.8	1704.0	1685.7
15°	1743.8	1725.5	1669.2	1637.7	1621.1
17.5°	1709.0	1682.4	1612.6	1576.2	1549.6
20°	1669.2	1635.9	1552.9	1511.6	1475.0
22.5°	1626.0	1587.9	1491.5	1435.2	1410.4
25°	1582.9	1529.8	1420.2	1352.3	1327.3
27.5°	1531.5	1475.0	1353.9	1275.9	1237.6
30°	1476.7	1413.5	1280.8	1196.3	1151.5
32.5°	1423.6	1347.2	1211.2	1111.7	1070.1
35°	1364.0	1279.2	1133.3	1028.7	992.1
37.5°	1305.8	1214.5	1060.2	945.6	904.3
40°	1244.4	1144.9	983.9	866.1	823.0
42.5°	1181.3	1075.2	907.6	784.7	743.4
45°	1115.0	1003.8	829.6	711.8	671.9
47.5°	1052.0	934.2	755.0	637.1	600.6
50°	982.2	864.5	681.9	567.4	532.7
52.5°	914.1	789.7	612.3	502.7	471.2
55°	847.8	718.4	539.2	439.7	408.2
57.5°	779.8	647.1	474.5	381.6	355.1
60°	710.1	577.3	406.4	321.9	295.4
62.5°	642.2	509.5	348.3	268.8	255.6
65°	572.5	437.9	288.7	232.3	227.2
67.5°	506.1	371.6	232.3	204.1	199.1
70°	436.4	307.0	192.4	175.9	169.1
72.5°	370.1	247.2	160.9	147.7	144.4
75°	305.2	189.1	132.7	121.1	119.6
77.5°	240.7	134.3	104.6	97.9	94.5
80°	180.8	96.3	79.5	73.1	73.1
82.5°	126.1	64.8	54.8	51.3	51.3
85°	71.3	36.5	31.5	31.5	31.5
87.5°	26.6	13.2	13.2	11.6	11.6
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	12.47	13.35	13.38	14.28	15.46	8.45	9.34	9.36	10.26	11.44
	3H	14.13	14.92	15.05	15.85	17.06	9.63	10.42	10.55	11.35	12.56
	4H	14.72	15.47	15.66	16.41	17.62	10.07	10.82	11.01	11.76	12.97
	6H	15.13	15.82	16.08	16.76	17.99	10.38	11.07	11.33	12.01	13.24
	8H	15.25	15.90	16.20	16.86	18.09	10.47	11.12	11.42	12.08	13.31
	12H	15.30	15.92	16.26	16.88	18.13	10.50	11.13	11.46	12.08	13.33
4H	2H	12.49	13.24	13.43	14.18	15.39	9.04	9.79	9.98	10.72	11.94
	3H	14.30	14.92	15.25	15.89	17.12	10.38	11.00	11.33	11.97	13.20
	4H	14.97	15.54	15.94	16.50	17.76	10.91	11.48	11.88	12.44	13.70
	6H	15.47	15.96	16.44	16.94	18.20	11.32	11.81	12.29	12.79	14.05
	8H	15.63	16.09	16.61	17.07	18.34	11.44	11.89	12.42	12.87	14.14
	12H	15.72	16.13	16.71	17.12	18.40	11.50	11.91	12.49	12.90	14.18
8H	4H	14.94	15.40	15.92	16.38	17.64	11.18	11.64	12.16	12.62	13.89
	6H	15.49	15.86	16.49	16.88	18.15	11.68	12.06	12.68	13.08	14.35
	8H	15.69	16.02	16.70	17.03	18.31	11.86	12.19	12.87	13.20	14.49
	12H	15.81	16.10	16.82	17.11	18.44	11.97	12.26	12.98	13.26	14.60
12H	4H	14.90	15.31	15.89	16.30	17.58	11.19	11.60	12.18	12.59	13.87
	6H	15.46	15.79	16.47	16.80	18.09	11.73	12.06	12.74	13.07	14.35
	8H	15.67	15.96	16.68	16.96	18.29	11.92	12.22	12.94	13.22	14.55