

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: P912476

Luminaire Tested: DFN2DIP-TR2F0-030D050US850-FLLFLL

Issue Date: 11/21/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P912476  
REPORT IS A COMBINATION OF REPORTS P900253 AND P897145  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-TR2F0-030D050US850-FLLFLL  
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

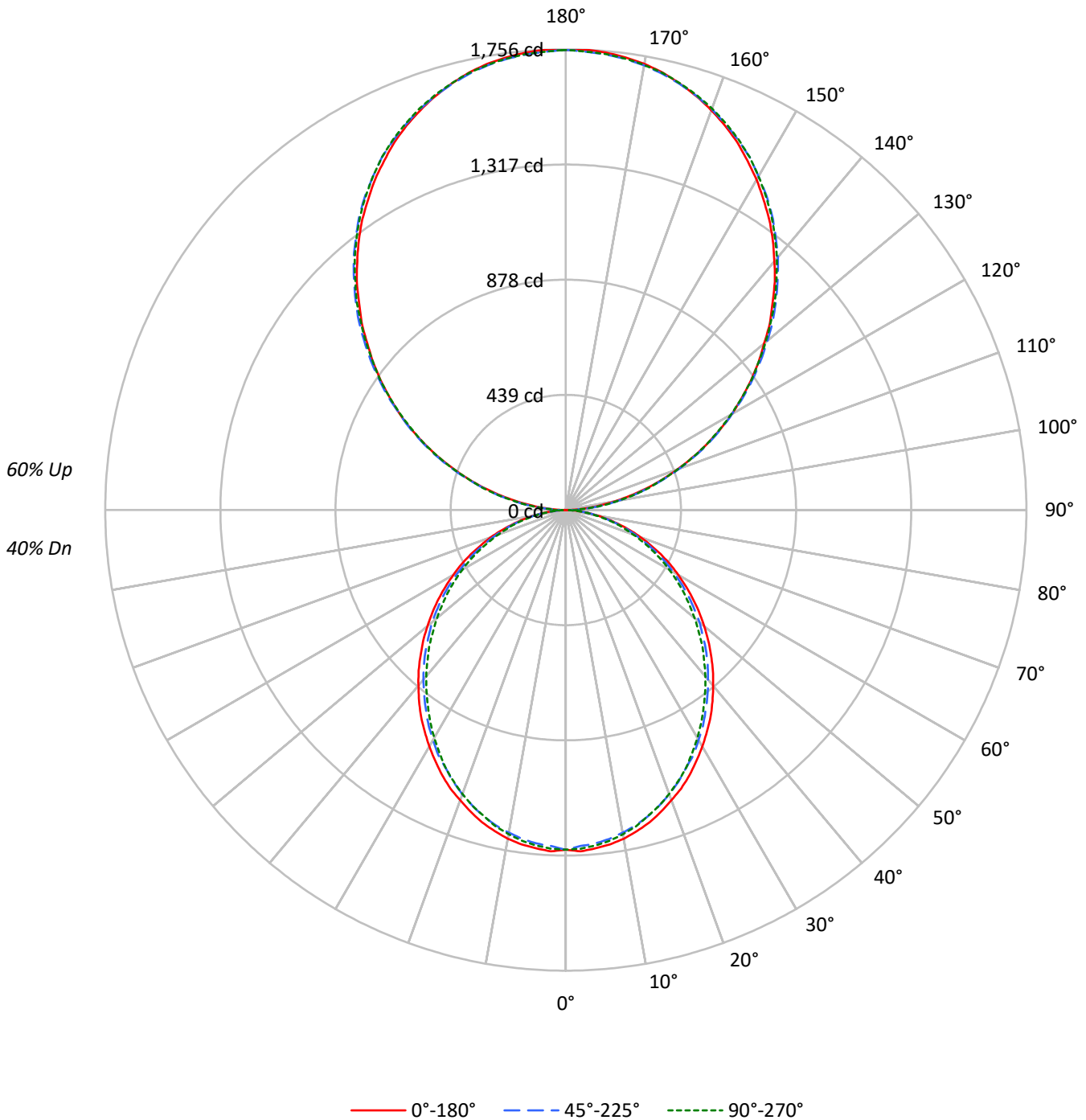
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8201.1 lumens  
Efficiency: N/A  
Efficacy: 128.7 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: General Diffuse

Input Watts (W): 63.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9951  
Total Harmonic Distortion (THDi): 0.07  
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				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	50	30	10	50	30	10
RCR																										
0	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47	47	47	47	47	47	47	47	47	47
1	96	91	87	84	87	83	80	77	68	66	64	54	53	51	42	41	40	40	40	40	40	40	40	40	40	40
2	87	80	74	69	79	73	68	63	60	56	53	48	45	43	37	35	33	33	33	33	33	33	33	33	33	33
3	79	70	63	57	72	64	58	53	53	48	44	42	39	36	32	30	28	28	28	28	28	28	28	28	28	28
4	73	62	54	48	66	57	50	45	47	42	38	38	34	31	29	27	25	25	25	25	25	25	25	25	25	25
5	67	55	47	41	60	51	44	38	42	37	33	34	30	27	26	23	21	21	21	21	21	21	21	21	21	21
6	61	49	41	36	56	45	38	33	38	32	28	30	27	24	24	21	19	19	19	19	19	19	19	19	19	19
7	57	45	37	31	51	41	34	29	34	29	25	28	24	21	22	19	17	17	17	17	17	17	17	17	17	17
8	52	40	33	28	48	37	30	26	31	26	22	25	21	18	20	17	15	15	15	15	15	15	15	15	15	15
9	49	37	29	24	44	34	27	23	28	23	20	23	19	17	18	16	14	14	14	14	14	14	14	14	14	14
10	46	34	27	22	41	31	25	20	26	21	18	21	18	15	17	14	12	12	12	12	12	12	12	12	12	12

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

	0°	45°	90°
0°	2887	2887	2887
5°	2888	2841	2861
10°	2860	2796	2818
15°	2814	2744	2752
20°	2752	2673	2685
25°	2692	2591	2609
30°	2616	2513	2513
35°	2545	2422	2412
40°	2457	2331	2315
45°	2370	2239	2216
50°	2274	2142	2102
55°	2173	2030	1996
60°	2059	1898	1874
65°	1934	1760	1731
70°	1775	1593	1575
75°	1555	1392	1425
80°	1289	1135	1152
85°	879	716	716

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2370 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	121.8	1.5
10°-20°	342.8	4.2
20°-30°	503.8	6.1
30°-40°	585.2	7.1
40°-50°	584.4	7.1
50°-60°	509.6	6.2
60°-70°	376.7	4.6
70°-80°	213.1	2.6
80°-90°	61.2	0.7
90°-100°	108.5	1.3
100°-110°	344.8	4.2
110°-120°	590.1	7.2
120°-130°	776.0	9.5
130°-140°	871.0	10.6
140°-150°	854.2	10.4
150°-160°	716.5	8.7
160°-170°	475.2	5.8
170°-180°	166.1	2.0
0°-30°	968.5	11.8
0°-40°	1553.6	18.9
0°-60°	2647.7	32.3
0°-90°	3298.7	40.2
90°-120°	1043.4	12.7
90°-150°	3544.6	43.2
90°-180°	4902.0	59.8
0°-180°	8201.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1294	1294	1294	1294	1294	
5°	1294	1290	1276	1286	1283	123
15°	1232	1225	1209	1214	1208	347
25°	1115	1106	1084	1087	1084	513
35°	962	950	930	922	916	601
45°	783	774	756	742	737	604
55°	593	585	570	555	549	530
65°	400	392	380	368	362	395
75°	209	207	200	193	196	223
85°	51	50	49	45	44	57
90°	2	19	52	49	50	8
95°	77	92	95	95	92	86
105°	318	322	326	328	328	336
115°	592	601	598	596	592	586
125°	861	874	870	866	864	770
135°	1114	1130	1134	1132	1128	861
145°	1352	1363	1371	1373	1367	845
155°	1546	1551	1555	1563	1558	712
165°	1682	1681	1681	1691	1684	475
175°	1751	1746	1743	1754	1745	166
180°	1754	1754	1754	1754	1754	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1294.5	1294.5	1294.5	1294.5	1294.5
2.5°	1302.1	1295.9	1282.1	1294.5	1292.2
5°	1294.5	1289.7	1275.9	1285.9	1283.4
7.5°	1285.9	1278.5	1264.7	1274.8	1272.2
10°	1272.2	1263.5	1248.6	1258.5	1254.8
12.5°	1253.5	1246.1	1231.2	1237.3	1234.9
15°	1232.3	1225.0	1208.7	1213.7	1207.5
17.5°	1206.1	1198.8	1182.5	1188.7	1182.5
20°	1177.5	1170.1	1152.7	1156.4	1151.5
22.5°	1149.0	1137.8	1121.5	1121.5	1119.0
25°	1115.3	1105.5	1084.3	1086.7	1084.3
27.5°	1077.9	1069.2	1053.1	1049.4	1043.2
30°	1040.7	1030.7	1012.1	1008.3	1003.3
32.5°	1000.9	993.4	973.5	965.9	960.9
35°	962.3	949.9	929.9	922.4	916.1
37.5°	918.7	907.5	887.5	878.8	872.6
40°	873.9	863.9	843.9	832.9	827.9
42.5°	830.3	820.3	800.5	787.9	780.5
45°	783.1	774.3	755.6	741.9	736.9
47.5°	736.9	728.3	708.3	694.6	687.1
50°	688.4	682.1	664.7	647.3	641.1
52.5°	641.1	632.4	616.3	602.5	593.8
55°	592.6	585.1	570.1	555.3	549.1
57.5°	544.0	537.8	521.6	506.6	501.6
60°	495.4	490.5	473.1	459.3	455.7
62.5°	448.1	439.4	427.0	414.5	409.6
65°	399.7	392.1	379.7	368.5	362.3
67.5°	349.9	343.6	332.4	323.7	318.7
70°	303.8	298.8	287.6	278.8	273.9
72.5°	256.5	251.4	245.2	236.5	232.9
75°	209.0	206.7	200.4	193.0	195.5
77.5°	166.8	161.8	159.3	155.6	151.9
80°	124.5	123.2	120.7	117.0	114.6
82.5°	84.6	84.6	83.5	78.4	78.4
85°	51.0	49.8	48.6	44.8	43.6
87.5°	22.4	20.0	17.4	13.8	12.4
90°	1.6	19.1	51.8	48.7	50.2
92.5°	32.8	44.4	46.0	47.6	47.6
95°	77.2	92.0	94.6	94.6	92.0
97.5°	128.4	142.2	148.1	148.1	148.1
100°	187.6	199.8	204.1	204.1	202.5
102.5°	250.1	259.1	264.8	266.5	264.8
105°	318.3	322.5	325.7	328.3	328.3
107.5°	385.9	392.3	392.3	393.4	385.9
110°	451.5	460.0	460.0	460.0	455.7



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	522.3	531.3	529.8	525.6	522.3
115°	592.1	600.6	598.0	596.4	592.1
117.5°	661.4	673.1	665.6	661.4	657.2
120°	731.2	742.8	731.2	731.2	726.4
122.5°	794.6	809.5	802.0	797.8	794.6
125°	861.2	874.4	870.2	865.5	863.9
127.5°	926.2	942.6	936.9	930.5	926.2
130°	987.1	1006.1	1003.4	1000.3	994.4
132.5°	1055.3	1070.1	1071.2	1063.8	1059.5
135°	1114.0	1130.3	1133.5	1132.0	1127.7
137.5°	1179.5	1192.7	1195.4	1194.3	1188.0
140°	1237.1	1250.4	1257.7	1257.7	1252.0
142.5°	1296.3	1309.6	1313.8	1315.4	1309.6
145°	1352.4	1363.0	1371.4	1373.1	1367.2
147.5°	1402.7	1415.9	1422.2	1424.8	1419.0
150°	1454.5	1463.4	1469.2	1474.0	1469.2
152.5°	1500.5	1509.5	1516.8	1522.7	1516.8
155°	1546.4	1550.6	1555.4	1562.8	1558.0
157.5°	1586.1	1589.2	1591.9	1602.5	1595.1
160°	1621.5	1624.7	1626.2	1635.2	1628.9
162.5°	1654.3	1654.3	1655.8	1665.9	1658.5
165°	1682.4	1680.7	1680.7	1691.3	1683.9
167.5°	1707.6	1702.9	1702.9	1713.5	1706.1
170°	1726.7	1722.5	1720.9	1731.5	1722.5
172.5°	1739.9	1735.7	1734.1	1744.7	1735.7
175°	1750.6	1746.2	1743.1	1753.7	1744.7
177.5°	1756.3	1752.1	1748.9	1757.9	1748.9
180°	1753.7	1753.7	1753.7	1753.7	1753.7



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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	9.85	10.63	10.89	11.67	13.08	9.42	10.20	10.46	11.25	12.65
	3H	11.48	12.18	12.53	13.23	14.65	11.02	11.72	12.06	12.77	14.19
	4H	12.05	12.71	13.11	13.76	15.19	11.59	12.25	12.65	13.30	14.73
	6H	12.42	13.03	13.49	14.09	15.54	11.96	12.57	13.03	13.63	15.08
	8H	12.52	13.10	13.59	14.17	15.61	12.06	12.64	13.13	13.71	15.15
	12H	12.55	13.11	13.63	14.17	15.64	12.09	12.64	13.17	13.71	15.17
4H	2H	10.29	10.95	11.36	12.01	13.44	9.95	10.61	11.02	11.67	13.10
	3H	12.12	12.68	13.19	13.76	15.20	11.74	12.29	12.81	13.37	14.82
	4H	12.81	13.32	13.89	14.39	15.86	12.42	12.93	13.50	14.00	15.46
	6H	13.30	13.74	14.39	14.83	16.29	12.91	13.34	13.99	14.44	15.90
	8H	13.44	13.85	14.53	14.93	16.41	13.04	13.45	14.13	14.54	16.01
	12H	13.50	13.86	14.60	14.97	16.45	13.09	13.46	14.20	14.56	16.04
8H	4H	12.99	13.40	14.08	14.49	15.96	12.64	13.05	13.73	14.14	15.61
	6H	13.59	13.93	14.70	15.06	16.53	13.24	13.58	14.35	14.71	16.18
	8H	13.80	14.09	14.91	15.20	16.70	13.44	13.74	14.56	14.85	16.34
	12H	13.91	14.17	15.03	15.28	16.81	13.54	13.80	14.66	14.91	16.44
12H	4H	12.97	13.34	14.08	14.44	15.92	12.63	13.00	13.73	14.10	15.58
	6H	13.62	13.91	14.73	15.03	16.52	13.28	13.57	14.39	14.68	16.18
	8H	13.84	14.10	14.96	15.21	16.74	13.49	13.75	14.61	14.86	16.39