

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: P926285

Luminaire Tested: DFN2DIP-TR3F0-060D080US950-RLONL

Issue Date: 11/21/2024

**Test Information**

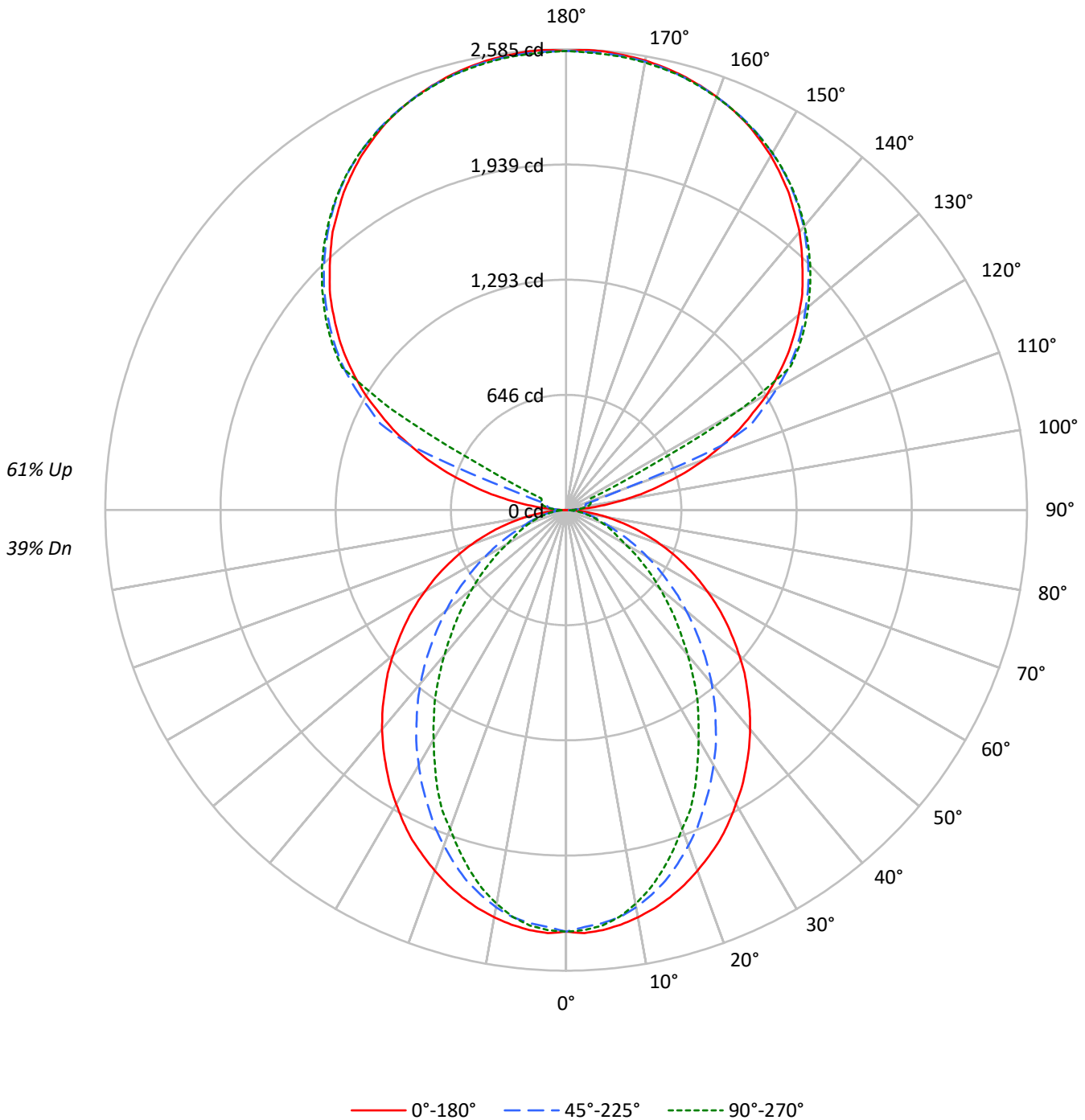
Test Method: LM-79-2019  
Report Number: P926285  
REPORT IS A COMBINATION OF REPORTS P901868 AND P898751  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-TR3F0-060D080US950-RLLONL  
Description: 3 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12421.1 lumens  
Efficiency: N/A  
Efficacy: 104.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')  
CIE Type: Semi-Indirect  
  
Input Watts (W): 118.5  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9789  
Total Harmonic Distortion (THDi): 0.074  
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	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46	39			
1	96	92	88	85	87	83	80	78	68	66	64	54	53	52	41	41	40	34			
2	87	80	75	70	79	73	68	64	60	57	54	48	46	44	37	35	34	29			
3	80	71	64	58	73	65	59	54	53	49	46	43	40	37	33	31	29	25			
4	73	63	55	50	67	58	51	46	48	43	39	38	35	32	30	27	26	22			
5	67	56	48	43	61	52	45	40	43	38	34	35	31	28	27	25	23	19			
6	62	51	43	37	56	46	40	35	39	34	30	31	28	25	25	22	20	17			
7	57	46	38	33	52	42	35	31	35	30	26	29	25	22	23	20	18	15			
8	53	42	34	29	49	38	32	27	32	27	23	26	22	20	21	18	16	14			
9	50	38	31	26	45	35	29	24	29	24	21	24	20	18	19	17	15	12			
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13	11			

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

	0°	45°	90°
0°	2948	2948	2948
5°	2951	2899	2918
10°	2920	2839	2821
15°	2878	2743	2672
20°	2824	2611	2491
25°	2767	2464	2315
30°	2693	2314	2094
35°	2619	2152	1899
40°	2544	1985	1676
45°	2458	1800	1474
50°	2368	1613	1277
55°	2274	1414	1087
60°	2165	1206	893
65°	2040	995	802
70°	1887	798	723
75°	1696	698	654
80°	1419	579	560
85°	966	374	409

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2458 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	221.7	1.8
10°-20°	608.7	4.9
20°-30°	854.5	6.9
30°-40°	931.5	7.5
40°-50°	856.2	6.9
50°-60°	672.4	5.4
60°-70°	437.7	3.5
70°-80°	225.3	1.8
80°-90°	62.0	0.5
90°-100°	84.9	0.7
100°-110°	316.6	2.5
110°-120°	839.7	6.8
120°-130°	1392.7	11.2
130°-140°	1479.4	11.9
140°-150°	1374.9	11.1
150°-160°	1105.4	8.9
160°-170°	712.3	5.7
170°-180°	245.2	2.0
0°-30°	1684.9	13.6
0°-40°	2616.4	21.1
0°-60°	4144.9	33.4
0°-90°	4869.9	39.2
90°-120°	1241.3	10.0
90°-150°	5488.3	44.2
90°-180°	7551.0	60.8
0°-180°	12421.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2366	2366	2366	2366	2366	
5°	2366	2355	2327	2346	2340	224
15°	2250	2226	2154	2113	2092	634
25°	2042	1974	1833	1745	1713	939
35°	1760	1651	1462	1327	1280	1102
45°	1439	1295	1071	918	867	1111
55°	1094	927	696	567	527	978
65°	739	565	372	300	293	732
75°	394	244	171	156	154	417
85°	92	47	41	41	41	106
90°	2	22	37	47	50	12
95°	121	60	73	82	80	143
105°	567	623	114	134	142	605
115°	1072	1103	1150	287	153	1055
125°	1515	1540	1575	1588	1594	1351
135°	1875	1905	1922	1940	1936	1448
145°	2175	2173	2205	2218	2208	1360
155°	2395	2378	2401	2412	2397	1104
165°	2524	2512	2518	2531	2518	713
175°	2581	2568	2572	2585	2566	246
180°	2576	2576	2576	2576	2576	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2365.7	2365.7	2365.7	2365.7	2365.7
2.5°	2376.4	2365.7	2342.1	2363.6	2359.3
5°	2365.7	2355.0	2327.1	2346.5	2340.1
7.5°	2346.5	2333.7	2303.7	2312.1	2301.4
10°	2320.7	2305.7	2263.1	2256.5	2243.7
12.5°	2288.7	2269.4	2211.5	2198.8	2175.1
15°	2250.1	2226.4	2153.8	2113.1	2091.7
17.5°	2205.2	2170.8	2080.9	2033.8	1999.6
20°	2153.8	2110.8	2003.9	1950.5	1903.2
22.5°	2098.1	2048.8	1924.6	1851.9	1819.9
25°	2042.5	1973.9	1832.6	1745.0	1712.7
27.5°	1976.2	1903.2	1747.0	1646.3	1597.1
30°	1905.5	1824.0	1652.7	1543.7	1485.8
32.5°	1836.9	1738.4	1563.0	1434.4	1380.8
35°	1759.9	1650.7	1462.4	1327.4	1280.2
37.5°	1685.0	1567.0	1368.1	1220.3	1166.8
40°	1605.7	1477.4	1269.5	1117.5	1061.9
42.5°	1524.4	1387.4	1171.1	1012.6	959.2
45°	1438.7	1295.2	1070.6	918.3	867.0
47.5°	1357.4	1205.5	974.2	822.1	775.0
50°	1267.5	1115.5	880.0	732.1	687.4
52.5°	1179.5	1019.0	790.0	648.7	608.1
55°	1094.0	927.0	695.8	567.4	526.7
57.5°	1006.3	834.9	612.4	492.5	458.1
60°	916.3	745.1	524.5	415.5	381.1
62.5°	828.6	657.4	449.5	346.9	329.8
65°	738.7	565.1	372.5	299.8	293.3
67.5°	653.0	479.5	299.8	263.3	256.9
70°	563.1	396.1	248.2	227.0	218.3
72.5°	477.5	318.9	207.6	190.6	186.2
75°	393.9	243.9	171.2	156.3	154.3
77.5°	310.5	173.3	134.9	126.3	122.0
80°	233.3	124.2	102.7	94.3	94.3
82.5°	162.7	83.6	70.6	66.3	66.3
85°	92.0	47.0	40.6	40.6	40.6
87.5°	34.3	17.1	17.1	15.0	15.0
90°	1.8	22.3	37.2	46.7	50.3
92.5°	46.7	39.2	44.7	48.5	50.3
95°	121.1	59.5	72.6	82.1	80.1
97.5°	218.0	65.3	94.9	100.7	102.5
100°	330.0	74.6	106.3	121.1	124.8
102.5°	452.9	449.2	110.0	130.3	136.1
105°	566.6	622.6	113.7	134.1	141.7
107.5°	698.9	745.4	117.5	137.9	145.4
110°	825.8	864.7	326.3	139.9	147.2



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	945.0	978.4	946.8	143.4	149.2
115°	1071.6	1103.3	1150.0	287.1	152.9
117.5°	1181.6	1218.8	1250.7	984.0	495.8
120°	1304.7	1332.5	1366.2	1388.5	1136.9
122.5°	1408.9	1438.8	1476.2	1487.3	1489.3
125°	1515.1	1539.5	1574.9	1587.9	1593.5
127.5°	1612.1	1638.2	1666.4	1684.9	1686.7
130°	1703.5	1733.3	1753.7	1774.3	1772.5
132.5°	1796.7	1821.0	1841.4	1858.2	1856.4
135°	1875.0	1904.9	1921.5	1940.3	1936.5
137.5°	1956.9	1979.3	1998.1	2016.7	2011.1
140°	2037.0	2052.1	2072.5	2089.3	2079.9
142.5°	2104.3	2117.3	2141.4	2156.3	2147.0
145°	2175.1	2173.1	2204.8	2217.9	2208.5
147.5°	2236.5	2230.9	2262.5	2271.9	2264.5
150°	2296.2	2283.1	2313.0	2324.0	2314.8
152.5°	2346.5	2331.6	2359.4	2370.8	2357.7
155°	2394.9	2378.3	2400.6	2411.7	2396.9
157.5°	2434.0	2419.2	2436.0	2449.1	2434.0
160°	2467.7	2456.5	2467.7	2478.8	2465.7
162.5°	2497.4	2486.3	2495.6	2508.6	2491.8
165°	2523.5	2512.5	2518.0	2531.0	2518.0
167.5°	2544.0	2532.8	2538.5	2551.6	2534.8
170°	2560.9	2549.6	2553.4	2566.5	2549.6
172.5°	2572.0	2560.9	2564.6	2577.7	2560.9
175°	2581.2	2568.2	2572.0	2585.0	2566.5
177.5°	2585.0	2572.0	2573.9	2587.0	2570.2
180°	2575.7	2575.7	2575.7	2575.7	2575.7



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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	9.75	10.50	10.80	11.55	12.97	5.73	6.48	6.78	7.53	8.95
	3H	11.41	12.08	12.47	13.14	14.58	6.91	7.58	7.97	8.64	10.08
	4H	12.01	12.65	13.08	13.71	15.16	7.35	7.98	8.42	9.05	10.49
	6H	12.42	13.01	13.50	14.07	15.53	7.66	8.25	8.74	9.31	10.77
	8H	12.54	13.10	13.63	14.18	15.63	7.75	8.30	8.83	9.38	10.84
	12H	12.60	13.13	13.69	14.20	15.68	7.79	8.31	8.88	9.39	10.86
4H	2H	9.76	10.39	10.84	11.46	12.90	6.31	6.94	7.39	8.01	9.45
	3H	11.57	12.10	12.66	13.19	14.65	7.65	8.17	8.73	9.26	10.72
	4H	12.25	12.74	13.34	13.82	15.30	8.19	8.67	9.28	9.75	11.23
	6H	12.75	13.17	13.85	14.27	15.74	8.60	9.01	9.69	10.11	11.59
	8H	12.92	13.31	14.02	14.40	15.89	8.72	9.11	9.82	10.20	11.69
	12H	13.01	13.36	14.12	14.47	15.96	8.78	9.13	9.89	10.24	11.73
8H	4H	12.21	12.60	13.31	13.69	15.18	8.46	8.84	9.55	9.94	11.43
	6H	12.77	13.09	13.89	14.22	15.71	8.96	9.28	10.08	10.42	11.90
	8H	12.98	13.26	14.10	14.37	15.88	9.15	9.43	10.28	10.55	12.05
	12H	13.10	13.35	14.23	14.46	16.01	9.26	9.50	10.39	10.62	12.16
12H	4H	12.16	12.51	13.28	13.62	15.11	8.45	8.80	9.57	9.91	11.41
	6H	12.74	13.02	13.87	14.14	15.64	9.01	9.29	10.14	10.41	11.91
	8H	12.95	13.20	14.08	14.31	15.85	9.21	9.46	10.34	10.57	12.11