

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: P915612

Luminaire Tested: DFN2DIP-TR4F0-080D070US927-RLLFLL

Issue Date: 11/21/2024

**Test Information**

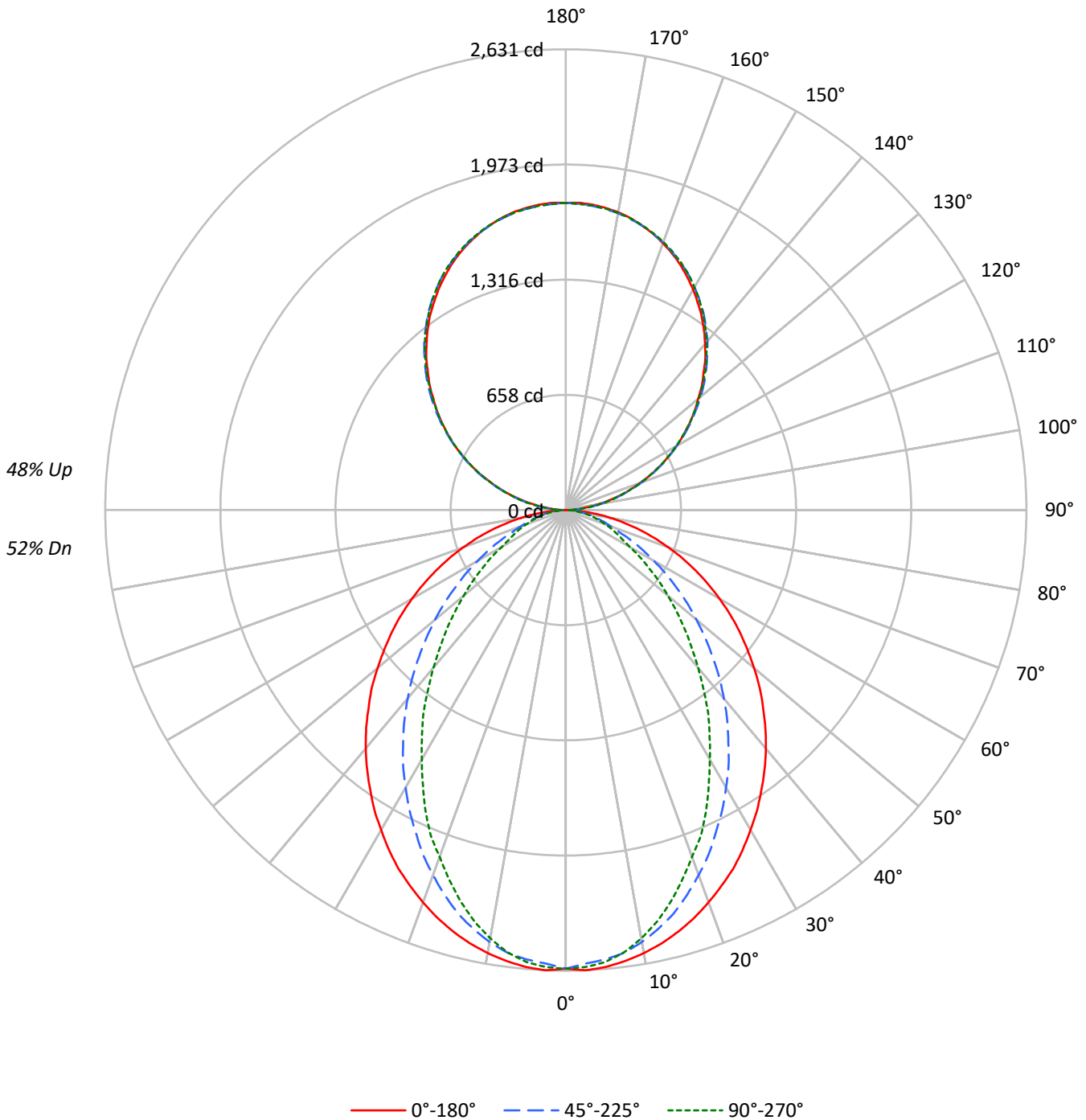
Test Method: LM-79-2019  
Report Number: P915612  
REPORT IS A COMBINATION OF REPORTS P900432 AND P897293  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-TR4F0-080D070US927-RLLFLL  
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10294.4 lumens  
Efficiency: N/A  
Efficacy: 80.9 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')  
CIE Type: General Diffuse  
  
Input Watts (W): 127.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9957  
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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	58	58	58	52
1	99	95	91	88	91	88	85	82	75	73	71	63	62	60	52	51	50	52	51	50	45
2	90	83	77	72	83	77	72	68	66	63	59	56	53	51	47	45	43	47	45	43	39
3	83	74	67	61	76	69	62	57	59	54	50	50	47	44	42	39	37	42	39	37	33
4	76	66	58	52	70	61	54	49	53	48	43	45	41	38	38	35	33	38	35	33	29
5	70	59	51	45	65	55	48	43	47	42	38	41	36	33	34	31	29	34	31	29	26
6	65	53	45	39	60	49	42	37	43	37	33	37	33	29	31	28	25	31	28	25	23
7	60	48	40	35	55	45	38	33	39	34	30	34	29	26	29	25	23	29	25	23	20
8	56	44	36	31	52	41	34	29	36	30	26	31	27	23	26	23	21	26	23	21	18
9	52	40	33	28	48	38	31	26	33	28	24	29	24	21	24	21	19	24	21	19	17
10	49	37	30	25	45	35	28	24	30	25	22	26	22	19	23	20	17	23	20	17	15

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

	0°	45°	90°
0°	2081	2081	2081
5°	2084	2048	2061
10°	2064	2008	1994
15°	2035	1941	1890
20°	1998	1850	1763
25°	1959	1747	1640
30°	1907	1642	1484
35°	1857	1529	1347
40°	1805	1412	1190
45°	1745	1282	1048
50°	1684	1151	909
55°	1619	1011	775
60°	1544	865	638
65°	1458	716	574
70°	1354	577	520
75°	1223	509	473
80°	1034	427	409
85°	721	285	308

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1745 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	245.5	2.4
10°-20°	673.9	6.5
20°-30°	946.1	9.2
30°-40°	1031.3	10.0
40°-50°	947.9	9.2
50°-60°	744.4	7.2
60°-70°	484.5	4.7
70°-80°	249.4	2.4
80°-90°	68.6	0.7
90°-100°	108.5	1.1
100°-110°	344.8	3.3
110°-120°	590.1	5.7
120°-130°	776.1	7.5
130°-140°	871.1	8.5
140°-150°	854.2	8.3
150°-160°	716.6	7.0
160°-170°	475.2	4.6
170°-180°	166.1	1.6
0°-30°	1865.5	18.1
0°-40°	2896.8	28.1
0°-60°	4589.2	44.6
0°-90°	5391.8	52.4
90°-120°	1043.4	10.1
90°-150°	3544.8	34.4
90°-180°	4903.0	47.6
0°-180°	10294.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2619	2619	2619	2619	2619	
5°	2619	2608	2576	2598	2591	248
15°	2491	2465	2385	2340	2316	702
25°	2261	2186	2029	1932	1896	1040
35°	1948	1828	1619	1470	1417	1220
45°	1593	1434	1185	1017	960	1230
55°	1211	1026	770	628	583	1082
65°	818	626	412	332	325	811
75°	436	270	190	173	171	461
85°	102	52	45	45	45	117
90°	2	19	52	49	50	10
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	1372	1373	1367	845
155°	1546	1551	1556	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°	2619.3	2619.3	2619.3	2619.3	2619.3
2.5°	2631.1	2619.3	2593.1	2617.0	2612.2
5°	2619.3	2607.5	2576.5	2597.9	2590.8
7.5°	2597.9	2583.8	2550.6	2559.9	2548.1
10°	2569.4	2552.9	2505.6	2498.3	2484.2
12.5°	2534.0	2512.6	2448.5	2434.4	2408.2
15°	2491.3	2465.1	2384.6	2339.6	2315.9
17.5°	2441.4	2403.5	2303.9	2251.9	2213.8
20°	2384.6	2337.1	2218.7	2159.6	2107.2
22.5°	2323.0	2268.4	2130.9	2050.4	2014.9
25°	2261.4	2185.5	2029.0	1932.0	1896.2
27.5°	2187.9	2107.2	1934.2	1822.8	1768.2
30°	2109.7	2019.4	1829.9	1709.1	1645.0
32.5°	2033.8	1924.7	1730.5	1588.2	1528.8
35°	1948.5	1827.6	1619.1	1469.7	1417.4
37.5°	1865.5	1735.0	1514.7	1351.0	1291.9
40°	1777.8	1635.7	1405.6	1237.3	1175.7
42.5°	1687.7	1536.1	1296.6	1121.2	1062.0
45°	1592.9	1434.0	1185.3	1016.8	960.0
47.5°	1502.9	1334.7	1078.6	910.1	858.1
50°	1403.3	1235.1	974.3	810.6	761.0
52.5°	1306.0	1128.1	874.6	718.3	673.3
55°	1211.2	1026.3	770.3	628.2	583.2
57.5°	1114.1	924.5	678.0	545.3	507.2
60°	1014.5	824.9	580.7	459.9	422.0
62.5°	917.4	727.8	497.7	384.0	365.2
65°	817.8	625.7	412.4	332.0	324.6
67.5°	723.0	530.9	332.0	291.4	284.5
70°	623.4	438.6	274.9	251.2	241.7
72.5°	528.6	353.1	229.9	211.0	206.2
75°	436.1	270.1	189.6	173.0	170.8
77.5°	343.8	191.9	149.4	139.8	135.1
80°	258.3	137.6	113.7	104.3	104.3
82.5°	180.1	92.5	78.2	73.4	73.4
85°	101.9	52.0	45.0	45.0	45.0
87.5°	37.9	18.9	18.9	16.6	16.6
90°	1.6	19.0	51.8	48.6	50.2
92.5°	32.8	44.4	46.0	47.6	47.6
95°	77.2	92.0	94.7	94.7	92.0
97.5°	128.5	142.2	148.1	148.1	148.1
100°	187.7	199.9	204.1	204.1	202.5
102.5°	250.1	259.0	264.9	266.5	264.9
105°	318.3	322.5	325.7	328.4	328.4
107.5°	386.0	392.3	392.3	393.4	386.0
110°	451.5	460.0	460.0	460.0	455.7



TEST NUMBER: P915612

CATALOG NUMBER: DFN2DIP-TR4F0-080D070US927-RLLFLL

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	522.4	531.4	529.8	525.5	522.4
115°	592.2	600.6	598.0	596.4	592.2
117.5°	661.4	673.0	665.7	661.4	657.2
120°	731.2	742.8	731.2	731.2	726.4
122.5°	794.6	809.5	802.1	797.8	794.6
125°	861.3	874.5	870.3	865.5	864.0
127.5°	926.3	942.7	936.9	930.6	926.3
130°	987.1	1006.1	1003.5	1000.4	994.5
132.5°	1055.3	1070.2	1071.2	1063.8	1059.5
135°	1114.0	1130.4	1133.6	1131.9	1127.7
137.5°	1179.6	1192.8	1195.4	1194.4	1188.0
140°	1237.2	1250.5	1257.8	1257.8	1252.0
142.5°	1296.4	1309.6	1313.8	1315.4	1309.6
145°	1352.5	1363.0	1371.5	1373.1	1367.3
147.5°	1402.7	1415.9	1422.3	1424.9	1419.1
150°	1454.5	1463.5	1469.3	1474.1	1469.3
152.5°	1500.5	1509.5	1516.9	1522.7	1516.9
155°	1546.5	1550.7	1555.5	1562.9	1558.1
157.5°	1586.2	1589.4	1592.0	1602.6	1595.1
160°	1621.6	1624.8	1626.3	1635.3	1629.0
162.5°	1654.4	1654.4	1656.0	1666.0	1658.6
165°	1682.4	1680.8	1680.8	1691.4	1683.9
167.5°	1707.8	1703.0	1703.0	1713.6	1706.2
170°	1726.8	1722.6	1721.0	1731.5	1722.6
172.5°	1740.0	1735.7	1734.2	1744.8	1735.7
175°	1750.6	1746.4	1743.2	1753.7	1744.8
177.5°	1756.4	1752.1	1749.0	1758.0	1749.0
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	9.91	10.76	10.85	11.71	12.95	5.88	6.73	6.82	7.69	8.92
	3H	11.58	12.34	12.54	13.31	14.57	7.07	7.83	8.03	8.80	10.06
	4H	12.19	12.91	13.16	13.88	15.15	7.52	8.24	8.49	9.21	10.48
	6H	12.62	13.28	13.60	14.25	15.54	7.85	8.51	8.83	9.48	10.76
	8H	12.74	13.37	13.73	14.36	15.64	7.94	8.57	8.92	9.56	10.84
	12H	12.81	13.40	13.80	14.39	15.69	7.98	8.58	8.97	9.56	10.87
4H	2H	9.93	10.65	10.90	11.61	12.89	6.48	7.20	7.45	8.16	9.44
	3H	11.76	12.35	12.74	13.35	14.64	7.83	8.43	8.81	9.43	10.71
	4H	12.45	13.00	13.44	13.99	15.30	8.38	8.92	9.37	9.92	11.23
	6H	12.97	13.44	13.97	14.45	15.76	8.80	9.27	9.81	10.28	11.59
	8H	13.14	13.58	14.15	14.59	15.91	8.93	9.37	9.94	10.38	11.70
	12H	13.24	13.63	14.26	14.66	15.98	9.00	9.39	10.02	10.42	11.74
8H	4H	12.42	12.86	13.43	13.87	15.19	8.66	9.10	9.67	10.11	11.43
	6H	12.99	13.35	14.02	14.40	15.72	9.18	9.54	10.21	10.59	11.91
	8H	13.20	13.52	14.24	14.56	15.90	9.37	9.69	10.41	10.73	12.07
	12H	13.34	13.62	14.38	14.65	16.04	9.49	9.77	10.53	10.80	12.19
12H	4H	12.37	12.77	13.40	13.79	15.12	8.67	9.06	9.69	10.09	11.41
	6H	12.96	13.28	14.00	14.32	15.66	9.23	9.55	10.27	10.59	11.92
	8H	13.18	13.46	14.22	14.49	15.88	9.44	9.72	10.48	10.75	12.14