

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: P918242

Luminaire Tested: DFN2DIP-TR4F0-050D100US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918242
REPORT IS A COMBINATION OF REPORTS P900479 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D100US930-FLLFLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

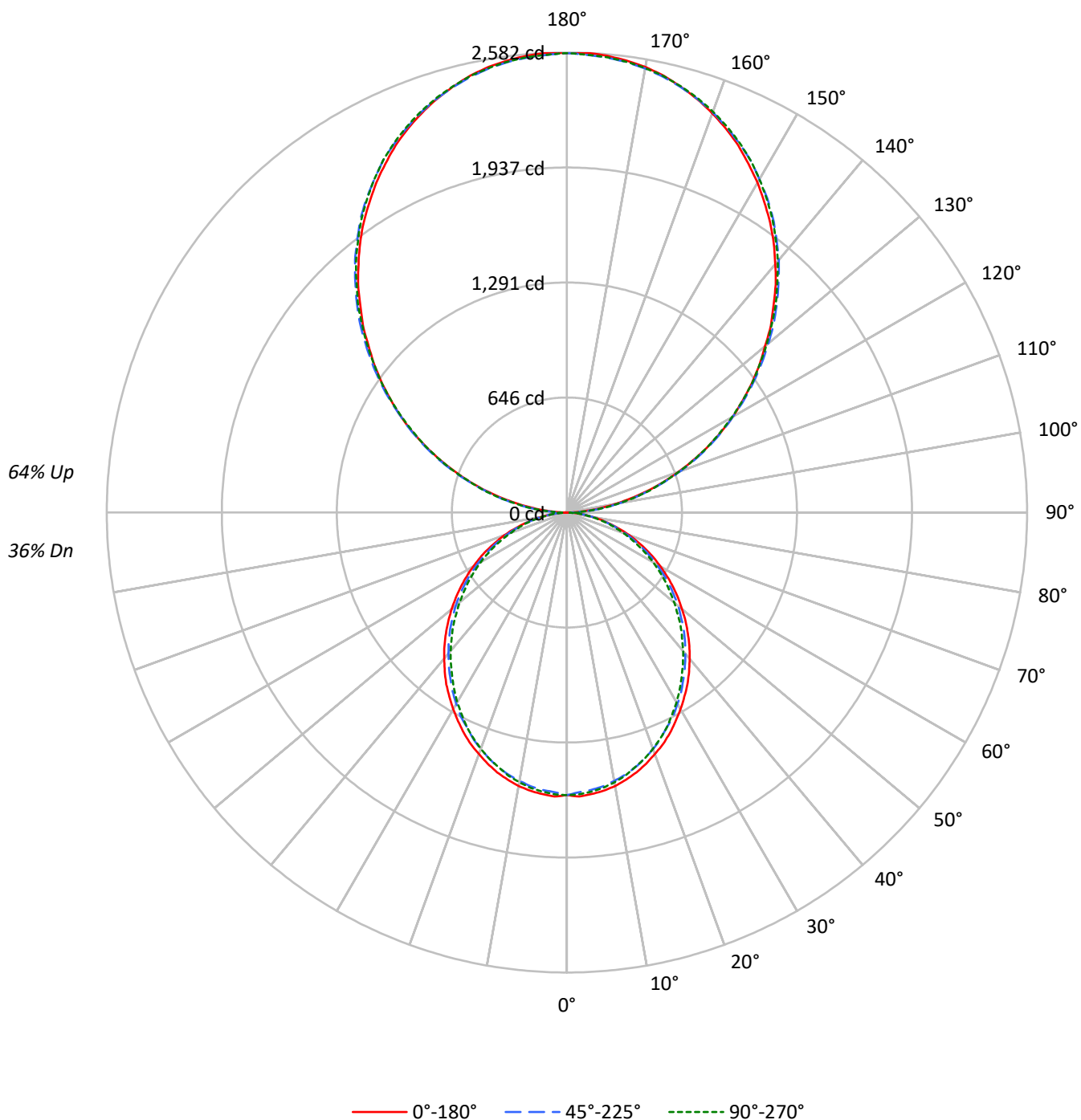
Lumens per Lamp: N/A
Luminaire Lumens: 11251.1 lumens
Efficiency: N/A
Efficacy: 95.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 118.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	104	104	104	104	94	94	94	94	76	76	76	59	59	59	43	43	43
1	95	90	87	83	85	82	79	76	66	64	62	52	50	49	38	37	36
2	86	79	73	68	78	72	66	62	58	54	51	45	43	41	34	32	31
3	79	69	62	56	71	63	57	52	51	47	43	40	37	34	30	28	26
4	72	61	54	48	65	56	49	44	45	40	37	36	32	29	27	24	22
5	66	54	47	41	59	50	43	38	40	35	31	32	28	25	24	22	20
6	61	49	41	35	55	45	38	33	36	31	27	29	25	22	22	19	17
7	56	44	36	31	50	40	33	28	33	28	24	26	22	20	20	17	15
8	52	40	32	27	47	36	30	25	30	25	21	24	20	17	18	16	14
9	48	36	29	24	44	33	27	22	27	22	19	22	18	16	17	14	12
10	45	33	26	21	41	30	24	20	25	20	17	20	17	14	16	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1260	1260	1260
5°	1262	1242	1251
10°	1252	1226	1234
15°	1233	1206	1207
20°	1209	1178	1180
25°	1184	1144	1149
30°	1153	1113	1109
35°	1124	1076	1067
40°	1087	1039	1027
45°	1051	1002	986
50°	1012	962	938
55°	971	917	894
60°	924	863	844
65°	873	808	785
70°	808	740	722
75°	719	659	663
80°	611	555	551
85°	442	377	365

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2011 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.3	1.3
10°-20°	420.0	3.7
20°-30°	617.3	5.5
30°-40°	717.0	6.4
40°-50°	716.1	6.4
50°-60°	624.4	5.5
60°-70°	461.6	4.1
70°-80°	261.1	2.3
80°-90°	76.2	0.7
90°-100°	159.6	1.4
100°-110°	507.0	4.5
110°-120°	867.6	7.7
120°-130°	1141.0	10.1
130°-140°	1280.7	11.4
140°-150°	1255.9	11.2
150°-160°	1053.5	9.4
160°-170°	698.7	6.2
170°-180°	244.2	2.2
0°-30°	1186.6	10.5
0°-40°	1903.6	16.9
0°-60°	3244.1	28.8
0°-90°	4043.0	35.9
90°-120°	1534.1	13.6
90°-150°	5211.7	46.3
90°-180°	7208.0	64.1
0°-180°	11251.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1586	1586	1586	1586	1586	
5°	1586	1580	1563	1576	1573	151
15°	1510	1501	1481	1487	1480	425
25°	1367	1354	1328	1332	1328	629
35°	1179	1164	1139	1130	1123	736
45°	959	949	926	909	903	740
55°	726	717	698	680	673	649
65°	490	480	465	452	444	484
75°	256	253	246	236	240	273
85°	62	61	60	55	53	70
90°	2	28	76	72	74	11
95°	114	135	139	139	135	126
105°	468	474	479	483	483	494
115°	871	883	879	877	871	861
125°	1266	1286	1280	1272	1270	1132
135°	1638	1662	1667	1664	1658	1266
145°	1988	2004	2016	2019	2010	1242
155°	2274	2280	2287	2298	2291	1047
165°	2474	2471	2471	2487	2476	698
175°	2574	2568	2563	2578	2565	245
180°	2578	2578	2578	2578	2578	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1586.2	1586.2	1586.2	1586.2	1586.2
2.5°	1595.4	1587.8	1571.0	1586.2	1583.3
5°	1586.2	1580.2	1563.3	1575.5	1572.6
7.5°	1575.5	1566.4	1549.6	1561.9	1558.9
10°	1558.9	1548.2	1529.9	1542.0	1537.5
12.5°	1535.9	1526.8	1508.5	1516.1	1513.0
15°	1509.9	1500.9	1481.0	1487.2	1479.5
17.5°	1477.9	1468.8	1448.9	1456.5	1448.9
20°	1442.8	1433.8	1412.4	1416.9	1411.0
22.5°	1407.9	1394.1	1374.2	1374.2	1371.1
25°	1366.6	1354.5	1328.5	1331.5	1328.5
27.5°	1320.8	1310.1	1290.4	1285.8	1278.2
30°	1275.1	1262.9	1240.1	1235.5	1229.4
32.5°	1226.3	1217.2	1192.8	1183.6	1177.5
35°	1179.0	1163.8	1139.4	1130.2	1122.6
37.5°	1125.6	1111.9	1087.4	1076.8	1069.2
40°	1070.8	1058.5	1034.0	1020.4	1014.3
42.5°	1017.4	1005.1	980.8	965.4	956.3
45°	959.4	948.8	925.8	909.1	902.9
47.5°	902.9	892.3	867.9	851.0	842.0
50°	843.4	835.8	814.5	793.1	785.5
52.5°	785.5	774.8	755.0	738.3	727.6
55°	726.1	716.9	698.5	680.3	672.7
57.5°	666.5	658.9	639.0	620.8	614.6
60°	607.0	601.0	579.7	562.8	558.3
62.5°	549.1	538.4	523.2	507.9	501.8
65°	489.7	480.5	465.2	451.5	443.8
67.5°	428.7	420.9	407.3	396.6	390.4
70°	372.2	366.1	352.3	341.6	335.7
72.5°	314.3	308.1	300.5	289.8	285.3
75°	256.2	253.2	245.5	236.4	239.5
77.5°	204.4	198.2	195.2	190.6	186.1
80°	152.6	151.0	147.9	143.4	140.3
82.5°	103.7	103.7	102.2	96.1	96.1
85°	62.5	61.0	59.5	54.9	53.4
87.5°	27.5	24.5	21.4	16.8	15.2
90°	2.4	28.0	76.1	71.5	73.9
92.5°	48.2	65.3	67.7	70.0	70.0
95°	113.5	135.3	139.2	139.2	135.3
97.5°	188.9	209.1	217.7	217.7	217.7
100°	276.0	293.8	300.0	300.0	297.7
102.5°	367.7	380.9	389.5	391.8	389.5
105°	468.0	474.2	478.8	482.7	482.7
107.5°	567.4	576.8	576.8	578.4	567.4
110°	663.9	676.3	676.3	676.3	670.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	768.0	781.2	778.9	772.7	768.0
115°	870.7	883.0	879.2	876.9	870.7
117.5°	972.5	989.6	978.7	972.5	966.2
120°	1075.1	1092.2	1075.1	1075.1	1068.1
122.5°	1168.3	1190.1	1179.2	1173.1	1168.3
125°	1266.3	1285.7	1279.5	1272.5	1270.2
127.5°	1362.0	1386.0	1377.4	1368.2	1362.0
130°	1451.3	1479.3	1475.4	1470.7	1462.2
132.5°	1551.6	1573.4	1574.9	1564.1	1557.8
135°	1637.9	1662.0	1666.6	1664.3	1658.1
137.5°	1734.3	1753.7	1757.6	1756.1	1746.7
140°	1819.0	1838.4	1849.3	1849.3	1840.8
142.5°	1906.1	1925.5	1931.7	1934.1	1925.5
145°	1988.4	2004.0	2016.5	2018.8	2010.2
147.5°	2062.3	2081.8	2091.1	2095.0	2086.4
150°	2138.5	2151.7	2160.3	2167.2	2160.3
152.5°	2206.1	2219.3	2230.2	2238.8	2230.2
155°	2273.8	2280.0	2287.0	2297.8	2290.8
157.5°	2332.1	2336.7	2340.6	2356.1	2345.3
160°	2384.2	2388.8	2391.1	2404.3	2395.0
162.5°	2432.4	2432.4	2434.6	2449.4	2438.6
165°	2473.5	2471.2	2471.2	2486.7	2475.9
167.5°	2510.9	2503.9	2503.9	2519.4	2508.5
170°	2538.8	2532.6	2530.3	2545.9	2532.6
172.5°	2558.2	2552.0	2549.7	2565.3	2552.0
175°	2573.8	2567.6	2563.0	2578.5	2565.3
177.5°	2582.4	2576.2	2571.5	2584.7	2571.5
180°	2578.5	2578.5	2578.5	2578.5	2578.5

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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	6.61	7.35	7.67	8.42	9.88	6.17	6.92	7.24	7.99	9.45
	3H	8.26	8.93	9.34	10.01	11.48	7.78	8.45	8.86	9.53	11.01
	4H	8.84	9.47	9.93	10.56	12.04	8.37	9.00	9.46	10.08	11.57
	6H	9.23	9.82	10.33	10.90	12.40	8.76	9.34	9.86	10.43	11.92
	8H	9.33	9.89	10.44	10.99	12.48	8.86	9.42	9.96	10.52	12.01
	12H	9.38	9.91	10.49	11.00	12.51	8.90	9.43	10.01	10.52	12.03
4H	2H	7.05	7.69	8.15	8.77	10.25	6.71	7.34	7.81	8.43	9.91
	3H	8.91	9.44	10.01	10.55	12.04	8.52	9.05	9.62	10.15	11.65
	4H	9.62	10.11	10.73	11.20	12.72	9.21	9.70	10.32	10.80	12.31
	6H	10.13	10.54	11.24	11.67	13.17	9.72	10.14	10.83	11.26	12.77
	8H	10.27	10.66	11.39	11.78	13.30	9.86	10.25	10.98	11.37	12.89
	12H	10.34	10.69	11.47	11.82	13.35	9.92	10.27	11.05	11.40	12.93
8H	4H	9.81	10.20	10.92	11.31	12.83	9.45	9.84	10.56	10.95	12.47
	6H	10.43	10.75	11.57	11.91	13.43	10.07	10.39	11.21	11.55	13.07
	8H	10.65	10.93	11.79	12.07	13.61	10.28	10.56	11.43	11.70	13.24
	12H	10.78	11.03	11.92	12.16	13.74	10.39	10.64	11.54	11.77	13.35
12H	4H	9.79	10.14	10.92	11.27	12.80	9.43	9.79	10.57	10.91	12.44
	6H	10.46	10.74	11.60	11.88	13.42	10.11	10.39	11.25	11.53	13.07
	8H	10.70	10.95	11.84	12.08	13.66	10.34	10.59	11.49	11.72	13.30

END OF REPORT