

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: P918247

Luminaire Tested: DFN2DIP-TR4F0-050D110US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918247
REPORT IS A COMBINATION OF REPORTS P902017 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D110US930-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

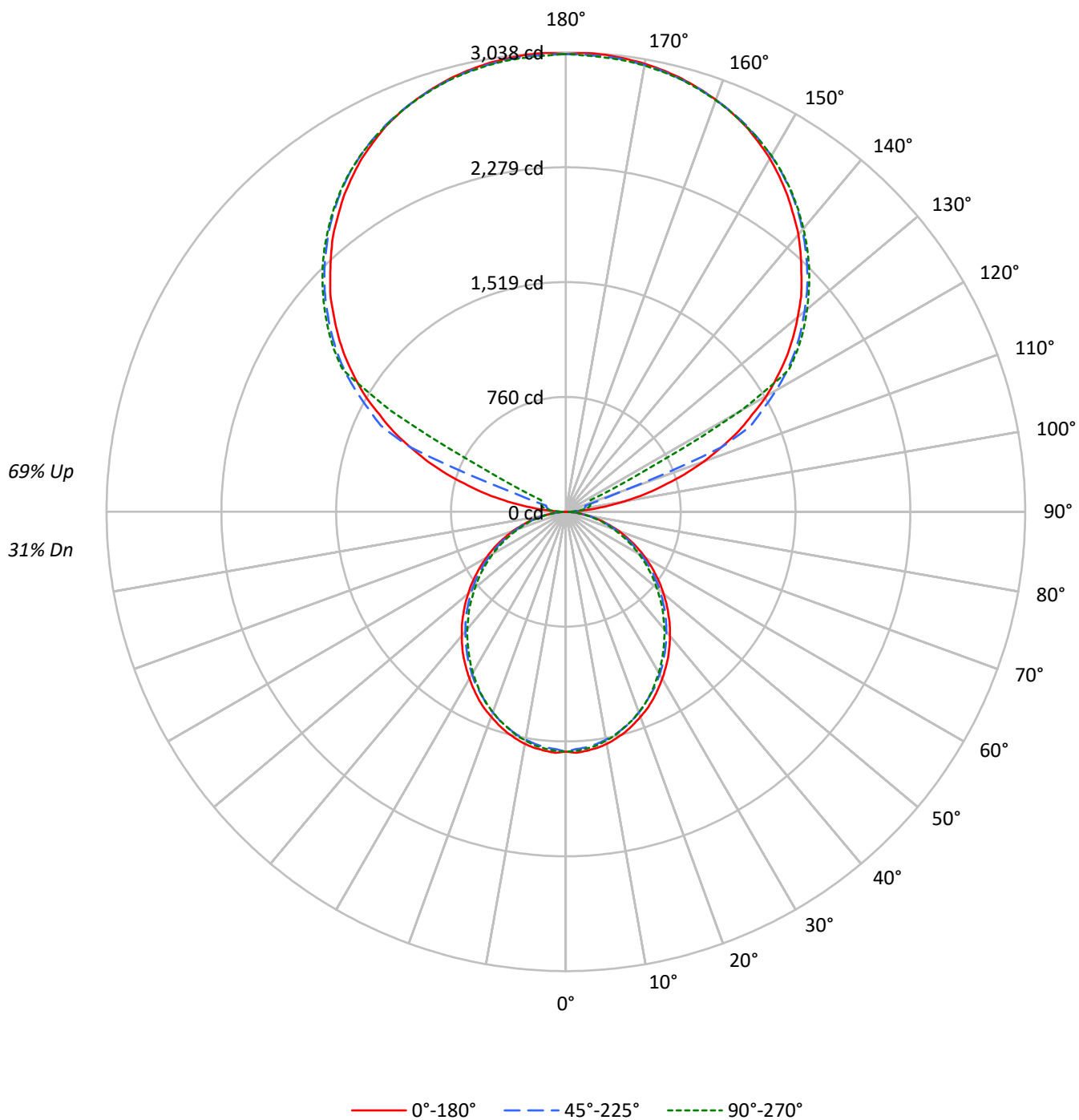
Lumens per Lamp: N/A
Luminaire Lumens: 12914.3 lumens
Efficiency: N/A
Efficacy: 101.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 126.7
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

TEST NUMBER: P918247

CATALOG NUMBER: DFN2DIP-TR4F0-050D110US930-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P918247

CATALOG NUMBER: DFN2DIP-TR4F0-050D110US930-FLONL

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
RCR																	
0	103	103	103	103	92	92	92	92	73	73	73		55	55	55		39
1	94	89	86	82	84	80	77	74	64	62	60		48	47	46		34
2	85	78	72	67	76	70	65	61	56	52	49		43	40	38		30
3	78	69	61	56	70	62	56	51	49	45	41		38	35	32		27
4	71	61	53	47	64	55	48	43	44	39	35		33	30	28		24
5	65	54	46	40	58	49	42	37	39	34	30		30	27	24		22
6	60	48	40	35	54	44	37	32	35	30	26		27	24	21		20
7	55	43	36	30	50	39	33	28	32	27	23		25	21	18		18
8	51	39	32	27	46	36	29	24	29	24	20		22	19	16		16
9	48	36	28	24	43	32	26	22	26	22	18		21	17	15		15
10	44	33	26	21	40	30	24	19	24	19	16		19	16	13		14

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: 1606 cd/sqm

TEST NUMBER: P918247

CATALOG NUMBER: DFN2DIP-TR4F0-050D110US930-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.3	1.2
10°-20°	420.0	3.3
20°-30°	617.3	4.8
30°-40°	717.0	5.6
40°-50°	716.1	5.5
50°-60°	624.4	4.8
60°-70°	461.6	3.6
70°-80°	261.1	2.0
80°-90°	74.2	0.6
90°-100°	99.8	0.8
100°-110°	372.1	2.9
110°-120°	986.7	7.6
120°-130°	1636.6	12.7
130°-140°	1738.4	13.5
140°-150°	1615.7	12.5
150°-160°	1298.9	10.1
160°-170°	837.0	6.5
170°-180°	288.1	2.2
0°-30°	1186.6	9.2
0°-40°	1903.6	14.7
0°-60°	3244.1	25.1
0°-90°	4041.0	31.3
90°-120°	1458.6	11.3
90°-150°	6449.2	49.9
90°-180°	8873.0	68.7
0°-180°	12914.3	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	26	44	55	59	12
95°	142	70	85	96	94	169
105°	666	732	134	158	166	711
115°	1259	1296	1351	337	180	1240
125°	1780	1809	1851	1866	1872	1588
135°	2203	2238	2258	2280	2276	1702
145°	2556	2554	2591	2606	2595	1599
155°	2814	2795	2821	2834	2816	1297
165°	2965	2952	2959	2974	2959	838
175°	3033	3018	3022	3038	3016	289
180°	3027	3027	3027	3027	3027	

TEST NUMBER: P918247

CATALOG NUMBER: DFN2DIP-TR4F0-050D110US930-FLLONL

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°	2.1	26.3	43.7	54.9	59.0
92.5°	54.9	46.1	52.5	57.0	59.0
95°	142.3	70.0	85.3	96.4	94.2
97.5°	256.2	76.7	111.5	118.3	120.4
100°	387.8	87.6	124.8	142.3	146.7
102.5°	532.1	527.9	129.2	153.2	160.0
105°	665.8	731.6	133.7	157.6	166.5
107.5°	821.3	875.9	138.1	162.0	170.9
110°	970.3	1016.1	383.4	164.4	172.9

TEST NUMBER: P918247

CATALOG NUMBER: DFN2DIP-TR4F0-050D110US930-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1110.5	1149.7	1112.6	168.5	175.3
115°	1259.2	1296.4	1351.4	337.3	179.7
117.5°	1388.5	1432.2	1469.7	1156.3	582.5
120°	1533.1	1565.9	1605.4	1631.7	1335.9
122.5°	1655.6	1690.7	1734.6	1747.7	1750.0
125°	1780.4	1809.1	1850.6	1866.0	1872.5
127.5°	1894.3	1925.0	1958.0	1979.9	1982.0
130°	2001.7	2036.9	2060.7	2085.0	2082.9
132.5°	2111.2	2139.8	2163.8	2183.5	2181.5
135°	2203.3	2238.4	2257.9	2280.1	2275.6
137.5°	2299.5	2325.8	2347.9	2369.7	2363.2
140°	2393.7	2411.3	2435.3	2455.0	2444.1
142.5°	2472.7	2488.0	2516.4	2533.9	2522.9
145°	2556.0	2553.6	2590.8	2606.2	2595.3
147.5°	2628.0	2621.5	2658.7	2669.6	2661.1
150°	2698.2	2682.9	2718.0	2731.0	2720.1
152.5°	2757.3	2739.8	2772.6	2785.9	2770.5
155°	2814.2	2794.7	2820.9	2834.0	2816.5
157.5°	2860.2	2842.8	2862.6	2877.9	2860.2
160°	2899.8	2886.5	2899.8	2912.7	2897.4
162.5°	2934.6	2921.6	2932.5	2947.9	2928.1
165°	2965.3	2952.3	2958.8	2974.1	2958.8
167.5°	2989.5	2976.2	2983.0	2998.3	2978.6
170°	3009.3	2996.0	3000.4	3015.8	2996.0
172.5°	3022.2	3009.3	3013.7	3029.0	3009.3
175°	3033.2	3017.8	3022.2	3037.6	3015.8
177.5°	3037.6	3022.2	3024.6	3039.9	3020.2
180°	3026.7	3026.7	3026.7	3026.7	3026.7

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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	6.03	6.74	7.13	7.84	9.36	5.60	6.31	6.70	7.41	8.93
	3H	7.68	8.32	8.79	9.43	10.96	7.21	7.85	8.32	8.95	10.49
	4H	8.26	8.87	9.38	9.98	11.51	7.79	8.39	8.91	9.50	11.04
	6H	8.65	9.21	9.78	10.32	11.87	8.18	8.74	9.31	9.85	11.40
	8H	8.75	9.28	9.88	10.41	11.95	8.28	8.81	9.41	9.94	11.48
	12H	8.79	9.30	9.93	10.42	11.99	8.31	8.82	9.45	9.94	11.51
4H	2H	6.47	7.08	7.60	8.19	9.73	6.13	6.74	7.26	7.85	9.38
	3H	8.33	8.83	9.46	9.97	11.52	7.93	8.44	9.07	9.58	11.13
	4H	9.03	9.50	10.17	10.62	12.19	8.63	9.09	9.77	10.22	11.79
	6H	9.54	9.94	10.68	11.09	12.65	9.13	9.53	10.28	10.68	12.24
	8H	9.69	10.06	10.83	11.20	12.78	9.27	9.65	10.42	10.79	12.36
	12H	9.75	10.09	10.91	11.24	12.82	9.33	9.67	10.49	10.82	12.40
8H	4H	9.22	9.59	10.36	10.73	12.31	8.86	9.23	10.00	10.37	11.95
	6H	9.84	10.15	11.01	11.33	12.91	9.48	9.79	10.65	10.97	12.54
	8H	10.06	10.33	11.23	11.49	13.09	9.69	9.96	10.86	11.12	12.72
	12H	10.19	10.42	11.36	11.58	13.21	9.80	10.04	10.98	11.20	12.83
12H	4H	9.20	9.54	10.36	10.69	12.27	8.85	9.18	10.01	10.33	11.92
	6H	9.87	10.14	11.04	11.30	12.90	9.52	9.79	10.69	10.95	12.54
	8H	10.11	10.34	11.28	11.50	13.13	9.75	9.99	10.92	11.14	12.77