

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: P908524

Luminaire Tested: DFN2DIP-PN3F0-070D050US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908524
REPORT IS A COMBINATION OF REPORTS P899547 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-070D050US840-FLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

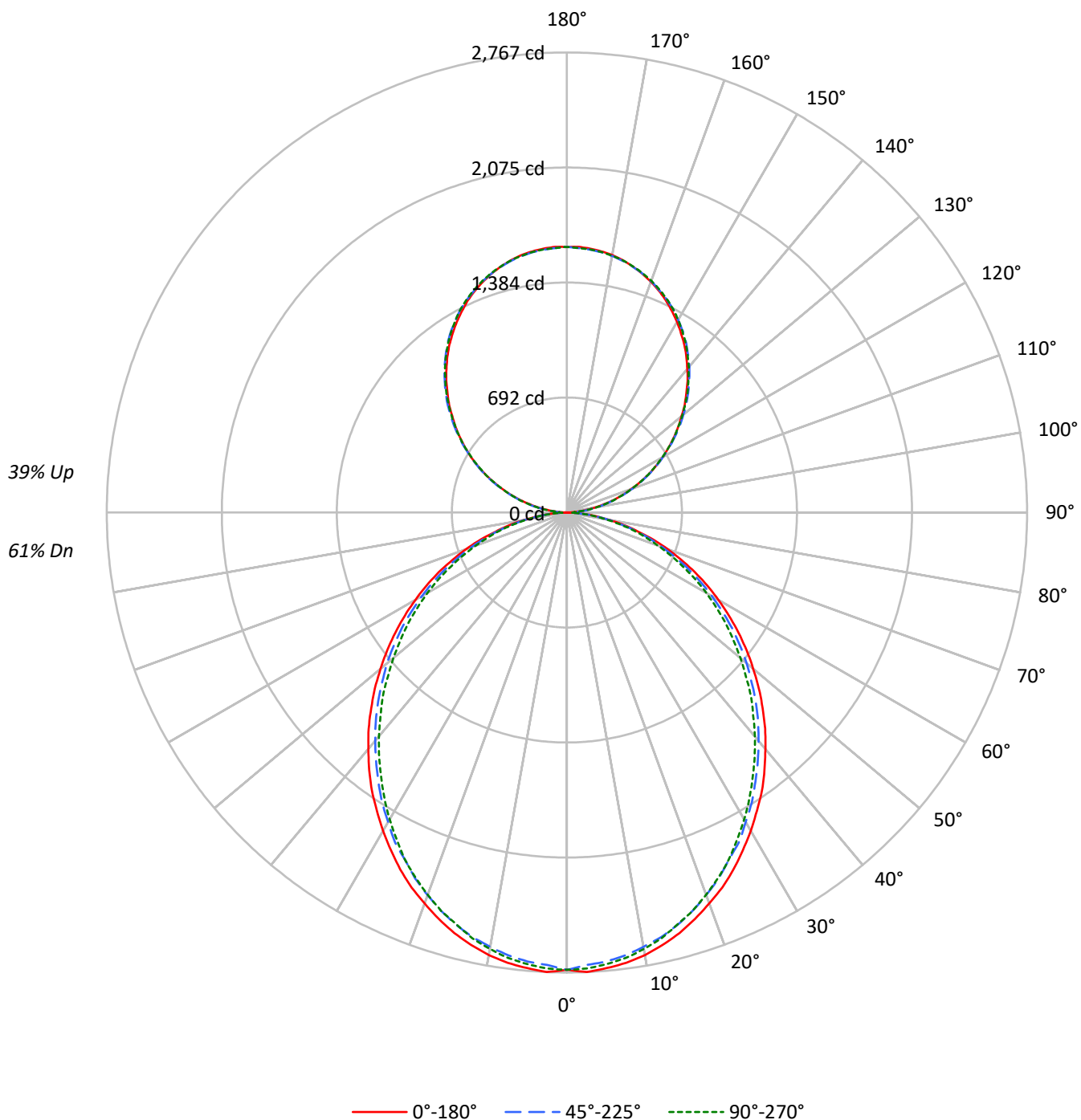
Lumens per Lamp: N/A
Luminaire Lumens: 11467.0 lumens
Efficiency: N/A
Efficacy: 107.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 107.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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
RCR																	
0	110	110	110	110	103	103	103	103	89	89	89		77	77	77		66
1	100	96	92	88	94	90	86	83	79	76	74		68	66	65		59
2	91	84	77	72	85	79	73	68	69	65	61		60	57	54		52
3	83	74	66	60	78	69	63	57	61	56	51		53	49	46		46
4	76	65	57	51	71	61	54	49	54	48	44		47	43	39		41
5	70	58	50	44	65	55	47	42	48	42	38		42	38	34		37
6	65	52	44	38	60	49	42	36	44	38	33		38	34	30		33
7	60	47	39	33	56	45	37	32	40	34	29		35	30	26		31
8	56	43	35	30	52	41	33	28	36	30	26		32	27	24		28
9	52	39	32	27	48	37	30	25	33	27	23		30	25	21		26
10	48	36	29	24	45	34	28	23	31	25	21		27	23	19		24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3215	3215	3215
5°	3219	3168	3191
10°	3191	3123	3146
15°	3142	3070	3077
20°	3076	2996	3007
25°	3012	2908	2926
30°	2930	2827	2822
35°	2854	2730	2714
40°	2759	2633	2610
45°	2665	2536	2504
50°	2562	2433	2381
55°	2454	2315	2268
60°	2331	2175	2138
65°	2197	2029	1985
70°	2027	1851	1820
75°	1791	1638	1666
80°	1507	1366	1374
85°	1063	904	896

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2665 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	258.9	2.3
10°-20°	728.4	6.4
20°-30°	1070.5	9.3
30°-40°	1243.3	10.8
40°-50°	1241.7	10.8
50°-60°	1082.8	9.4
60°-70°	800.4	7.0
70°-80°	452.9	3.9
80°-90°	124.1	1.1
90°-100°	98.8	0.9
100°-110°	314.0	2.7
110°-120°	537.3	4.7
120°-130°	706.6	6.2
130°-140°	793.2	6.9
140°-150°	777.8	6.8
150°-160°	652.5	5.7
160°-170°	432.7	3.8
170°-180°	151.2	1.3
0°-30°	2057.8	17.9
0°-40°	3301.1	28.8
0°-60°	5625.6	49.1
0°-90°	7002.9	61.1
90°-120°	950.1	8.3
90°-150°	3227.7	28.1
90°-180°	4464.0	38.9
0°-180°	11467.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2751	2751	2751	2751	2751	
5°	2751	2740	2711	2732	2727	261
15°	2618	2603	2568	2579	2566	737
25°	2370	2349	2304	2309	2304	1090
35°	2045	2018	1976	1960	1947	1277
45°	1664	1645	1605	1576	1566	1284
55°	1259	1243	1211	1180	1166	1126
65°	849	833	807	783	770	840
75°	444	439	426	410	415	474
85°	108	106	103	95	93	121
90°	1	17	47	44	46	11
95°	70	84	86	86	84	78
105°	290	294	297	299	299	306
115°	539	547	544	543	539	533
125°	784	796	792	788	787	701
135°	1014	1029	1032	1031	1027	784
145°	1232	1241	1249	1250	1245	769
155°	1408	1412	1416	1423	1419	648
165°	1532	1530	1530	1540	1533	432
175°	1594	1590	1587	1597	1589	151
180°	1597	1597	1597	1597	1597	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2750.6	2750.6	2750.6	2750.6	2750.6
2.5°	2766.6	2753.4	2724.2	2750.6	2745.5
5°	2750.6	2740.3	2711.1	2732.1	2727.0
7.5°	2732.1	2716.3	2687.2	2708.6	2703.2
10°	2703.2	2684.6	2652.9	2674.0	2666.1
12.5°	2663.3	2647.7	2616.0	2629.1	2623.7
15°	2618.5	2602.7	2568.2	2578.9	2565.7
17.5°	2562.8	2547.2	2512.6	2525.9	2512.6
20°	2501.9	2486.3	2449.2	2457.1	2446.7
22.5°	2441.3	2417.5	2383.0	2383.0	2377.6
25°	2369.9	2348.7	2303.9	2309.0	2303.9
27.5°	2290.4	2271.9	2237.7	2229.8	2216.6
30°	2211.3	2189.9	2150.4	2142.5	2131.8
32.5°	2126.5	2110.8	2068.4	2052.5	2041.7
35°	2044.6	2018.2	1975.8	1959.8	1946.6
37.5°	1952.0	1928.1	1885.7	1867.2	1854.0
40°	1856.8	1835.5	1793.1	1769.6	1758.9
42.5°	1764.2	1742.9	1700.8	1674.2	1658.4
45°	1663.8	1645.3	1605.4	1576.5	1565.8
47.5°	1565.8	1547.3	1504.9	1475.7	1460.1
50°	1462.6	1449.4	1412.3	1375.3	1362.1
52.5°	1362.1	1343.6	1309.4	1280.2	1261.6
55°	1259.1	1243.1	1211.4	1179.7	1166.5
57.5°	1155.9	1142.7	1108.1	1076.4	1065.8
60°	1052.6	1042.2	1005.2	976.0	968.2
62.5°	952.1	933.6	907.3	880.9	870.2
65°	849.2	833.1	806.8	782.9	769.7
67.5°	743.4	729.9	706.3	687.8	677.1
70°	645.4	634.8	610.9	592.4	582.0
72.5°	544.9	534.3	521.1	502.6	494.7
75°	444.2	439.2	425.7	410.0	415.4
77.5°	354.5	343.8	338.4	330.5	322.8
80°	264.6	261.9	256.5	248.6	243.3
82.5°	179.9	179.9	177.3	166.7	166.7
85°	108.4	105.8	103.3	95.1	92.6
87.5°	47.7	42.4	37.1	29.2	26.4
90°	1.4	17.4	47.2	44.3	45.7
92.5°	29.9	40.4	41.9	43.3	43.3
95°	70.3	83.8	86.1	86.1	83.8
97.5°	116.9	129.5	134.8	134.8	134.8
100°	170.9	182.0	185.8	185.8	184.4
102.5°	227.7	235.9	241.2	242.7	241.2
105°	289.8	293.7	296.6	298.9	298.9
107.5°	351.4	357.2	357.2	358.2	351.4
110°	411.1	418.9	418.9	418.9	415.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	475.6	483.8	482.4	478.6	475.6
115°	539.2	546.9	544.5	543.1	539.2
117.5°	602.3	612.9	606.1	602.3	598.4
120°	665.8	676.4	665.8	665.8	661.5
122.5°	723.6	737.1	730.3	726.5	723.6
125°	784.3	796.3	792.4	788.1	786.7
127.5°	843.4	858.4	853.1	847.3	843.4
130°	898.9	916.2	913.7	910.9	905.5
132.5°	961.0	974.4	975.4	968.7	964.8
135°	1014.4	1029.3	1032.2	1030.8	1026.9
137.5°	1074.1	1086.1	1088.5	1087.5	1081.8
140°	1126.5	1138.6	1145.3	1145.3	1140.0
142.5°	1180.4	1192.6	1196.4	1197.8	1192.6
145°	1231.5	1241.1	1248.8	1250.3	1245.0
147.5°	1277.3	1289.3	1295.1	1297.5	1292.1
150°	1324.4	1332.6	1337.9	1342.2	1337.9
152.5°	1366.3	1374.5	1381.2	1386.5	1381.2
155°	1408.2	1412.0	1416.3	1423.1	1418.8
157.5°	1444.3	1447.1	1449.6	1459.3	1452.5
160°	1476.5	1479.5	1480.9	1489.0	1483.3
162.5°	1506.4	1506.4	1507.8	1517.0	1510.3
165°	1532.0	1530.5	1530.5	1540.1	1533.4
167.5°	1555.0	1550.6	1550.6	1560.3	1553.6
170°	1572.4	1568.5	1567.1	1576.7	1568.5
172.5°	1584.4	1580.5	1579.1	1588.7	1580.5
175°	1594.1	1590.1	1587.3	1596.9	1588.7
177.5°	1599.3	1595.5	1592.6	1600.7	1592.6
180°	1596.9	1596.9	1596.9	1596.9	1596.9

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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	12.25	13.22	13.11	14.10	15.21	11.81	12.78	12.67	13.66	14.77
	3H	13.92	14.79	14.78	15.67	16.80	13.43	14.30	14.30	15.19	16.32
	4H	14.50	15.33	15.39	16.22	17.36	14.02	14.84	14.90	15.74	16.88
	6H	14.91	15.66	15.80	16.56	17.72	14.42	15.17	15.31	16.07	17.23
	8H	15.01	15.73	15.91	16.65	17.80	14.52	15.24	15.42	16.16	17.31
	12H	15.06	15.75	15.97	16.66	17.84	14.56	15.25	15.47	16.16	17.34
4H	2H	12.72	13.55	13.61	14.44	15.58	12.37	13.20	13.26	14.09	15.23
	3H	14.59	15.28	15.49	16.20	17.36	14.19	14.88	15.09	15.80	16.96
	4H	15.31	15.93	16.22	16.85	18.04	14.89	15.52	15.80	16.44	17.62
	6H	15.82	16.36	16.75	17.31	18.49	15.40	15.94	16.32	16.89	18.07
	8H	15.97	16.48	16.90	17.42	18.61	15.54	16.05	16.47	16.99	18.19
	12H	16.05	16.50	16.99	17.46	18.66	15.61	16.07	16.56	17.02	18.22
8H	4H	15.51	16.01	16.44	16.95	18.15	15.14	15.64	16.07	16.58	17.78
	6H	16.14	16.56	17.09	17.54	18.73	15.76	16.18	16.72	17.16	18.36
	8H	16.35	16.72	17.32	17.70	18.91	15.97	16.34	16.93	17.31	18.52
	12H	16.49	16.81	17.45	17.78	19.04	16.09	16.41	17.05	17.38	18.64
12H	4H	15.50	15.95	16.45	16.91	18.11	15.14	15.59	16.08	16.55	17.75
	6H	16.17	16.54	17.13	17.51	18.72	15.80	16.17	16.76	17.14	18.36
	8H	16.41	16.73	17.38	17.70	18.96	16.04	16.36	17.00	17.33	18.59