

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: P916736

Luminaire Tested: DFN2DIP-PN3F0-080D050US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916736
REPORT IS A COMBINATION OF REPORTS P899549 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-080D050US930-FLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

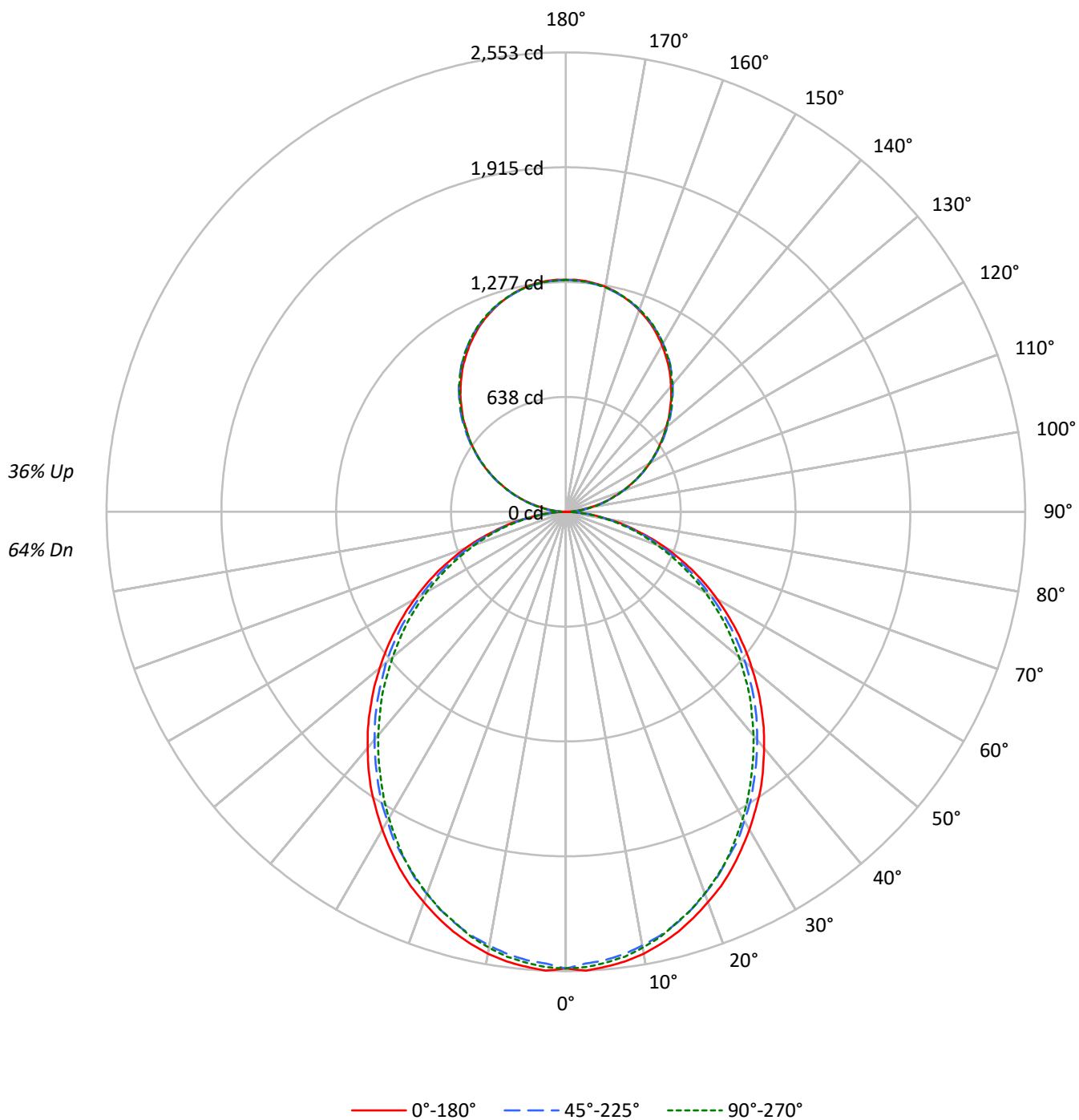
Lumens per Lamp: N/A
Luminaire Lumens: 10064.9 lumens
Efficiency: N/A
Efficacy: 85.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 117.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P916736

CATALOG NUMBER: DFN2DIP-PN3F0-080D050US930-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P916736

CATALOG NUMBER: DFN2DIP-PN3F0-080D050US930-FLLFLL

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	111	111	111	111		104	104	104	104		91	91	91		80	80	80		69	69	69
1	101	97	93	89		95	91	87	84		80	77	75		70	68	66		61	60	58
2	92	84	78	73		86	79	74	69		70	66	62		62	58	56		54	51	49
3	84	74	67	61		79	70	63	58		62	57	52		55	50	47		48	45	42
4	77	66	58	51		72	62	55	49		55	49	45		49	44	40		43	39	36
5	71	59	50	44		66	55	48	42		49	43	39		44	39	35		38	35	32
6	65	53	44	38		61	50	42	37		45	38	34		40	35	31		35	31	28
7	60	48	40	34		56	45	38	32		40	34	30		36	31	27		32	28	25
8	56	43	35	30		53	41	34	29		37	31	27		33	28	24		29	25	22
9	52	40	32	27		49	38	31	26		34	28	24		30	26	22		27	23	20
10	49	37	29	24		46	35	28	23		31	26	22		28	23	20		25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2967	2967	2967
5°	2970	2923	2944
10°	2944	2882	2903
15°	2899	2832	2839
20°	2839	2764	2774
25°	2779	2683	2699
30°	2704	2608	2604
35°	2633	2519	2504
40°	2546	2430	2408
45°	2459	2340	2310
50°	2364	2245	2197
55°	2264	2136	2093
60°	2151	2006	1973
65°	2027	1872	1832
70°	1870	1708	1679
75°	1653	1511	1537
80°	1390	1260	1268
85°	981	834	826

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2459 cd/sqm

TEST NUMBER: P916736

CATALOG NUMBER: DFN2DIP-PN3F0-080D050US930-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	238.9	2.4
10°-20°	672.1	6.7
20°-30°	987.7	9.8
30°-40°	1147.1	11.4
40°-50°	1145.7	11.4
50°-60°	999.0	9.9
60°-70°	738.5	7.3
70°-80°	417.8	4.2
80°-90°	114.0	1.1
90°-100°	79.8	0.8
100°-110°	253.5	2.5
110°-120°	433.8	4.3
120°-130°	570.5	5.7
130°-140°	640.4	6.4
140°-150°	627.9	6.2
150°-160°	526.8	5.2
160°-170°	349.3	3.5
170°-180°	122.1	1.2
0°-30°	1898.6	18.9
0°-40°	3045.8	30.3
0°-60°	5190.5	51.6
0°-90°	6460.8	64.2
90°-120°	767.0	7.6
90°-150°	2605.8	25.9
90°-180°	3604.0	35.8
0°-180°	10064.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2538	2538	2538	2538	2538	
5°	2538	2528	2501	2521	2516	241
15°	2416	2402	2370	2379	2367	680
25°	2186	2167	2126	2130	2126	1006
35°	1886	1862	1823	1808	1796	1178
45°	1535	1518	1481	1455	1445	1185
55°	1162	1147	1118	1088	1076	1039
65°	784	769	744	722	710	775
75°	410	405	393	378	383	438
85°	100	98	95	88	85	112
90°	1	14	38	36	37	10
95°	57	68	70	70	68	63
105°	234	237	240	241	241	247
115°	435	442	440	438	435	431
125°	633	643	640	636	635	566
135°	819	831	833	832	829	633
145°	994	1002	1008	1009	1005	621
155°	1137	1140	1144	1149	1145	523
165°	1237	1236	1236	1243	1238	349
175°	1287	1284	1282	1289	1283	122
180°	1289	1289	1289	1289	1289	

TEST NUMBER: P916736

CATALOG NUMBER: DFN2DIP-PN3F0-080D050US930-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2537.9	2537.9	2537.9	2537.9	2537.9
2.5°	2552.6	2540.5	2513.6	2537.9	2533.2
5°	2537.9	2528.3	2501.4	2520.8	2516.2
7.5°	2520.8	2506.3	2479.4	2499.1	2494.2
10°	2494.2	2477.0	2447.8	2467.2	2460.0
12.5°	2457.4	2442.9	2413.6	2425.8	2420.9
15°	2416.0	2401.5	2369.6	2379.4	2367.3
17.5°	2364.7	2350.2	2318.3	2330.5	2318.3
20°	2308.5	2294.0	2259.8	2267.1	2257.5
22.5°	2252.6	2230.6	2198.7	2198.7	2193.8
25°	2186.5	2167.1	2125.7	2130.4	2125.7
27.5°	2113.3	2096.2	2064.6	2057.3	2045.2
30°	2040.3	2020.6	1984.1	1976.9	1967.0
32.5°	1962.1	1947.6	1908.5	1893.7	1883.9
35°	1886.4	1862.1	1823.0	1808.2	1796.1
37.5°	1801.0	1779.0	1739.9	1722.8	1710.7
40°	1713.3	1693.5	1654.5	1632.7	1622.9
42.5°	1627.8	1608.1	1569.3	1544.7	1530.2
45°	1535.1	1518.0	1481.2	1454.6	1444.8
47.5°	1444.8	1427.7	1388.5	1361.6	1347.1
50°	1349.5	1337.3	1303.1	1268.9	1256.8
52.5°	1256.8	1239.7	1208.1	1181.2	1164.1
55°	1161.7	1147.0	1117.8	1088.5	1076.3
57.5°	1066.5	1054.3	1022.5	993.2	983.3
60°	971.2	961.6	927.4	900.5	893.2
62.5°	878.5	861.4	837.1	812.8	802.9
65°	783.5	768.7	744.4	722.4	710.2
67.5°	685.8	673.4	651.7	634.6	624.8
70°	595.5	585.6	563.7	546.6	537.0
72.5°	502.8	493.0	480.8	463.7	456.5
75°	409.9	405.2	392.8	378.3	383.2
77.5°	327.0	317.2	312.3	305.0	297.7
80°	244.2	241.6	236.7	229.4	224.5
82.5°	166.0	166.0	163.6	153.8	153.8
85°	100.0	97.6	95.3	87.8	85.4
87.5°	44.0	39.1	34.2	26.9	24.4
90°	1.1	14.0	38.1	35.8	36.9
92.5°	24.1	32.6	33.8	35.0	35.0
95°	56.7	67.7	69.5	69.5	67.7
97.5°	94.4	104.5	108.8	108.8	108.8
100°	137.9	146.9	150.0	150.0	148.9
102.5°	183.8	190.5	194.7	195.9	194.7
105°	234.0	237.1	239.5	241.3	241.3
107.5°	283.7	288.4	288.4	289.2	283.7
110°	331.9	338.2	338.2	338.2	335.0

TEST NUMBER: P916736

CATALOG NUMBER: DFN2DIP-PN3F0-080D050US930-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	384.0	390.6	389.5	386.4	384.0
115°	435.3	441.6	439.6	438.5	435.3
117.5°	486.2	494.8	489.3	486.2	483.1
120°	537.5	546.1	537.5	537.5	534.0
122.5°	584.2	595.1	589.6	586.5	584.2
125°	633.2	642.9	639.8	636.3	635.1
127.5°	680.9	693.0	688.8	684.0	680.9
130°	725.7	739.6	737.7	735.4	731.1
132.5°	775.8	786.7	787.5	782.0	778.9
135°	819.0	831.0	833.3	832.2	829.1
137.5°	867.2	876.9	878.8	878.0	873.3
140°	909.5	919.2	924.6	924.6	920.4
142.5°	953.0	962.8	965.9	967.0	962.8
145°	994.3	1002.0	1008.2	1009.4	1005.1
147.5°	1031.2	1040.9	1045.5	1047.5	1043.2
150°	1069.3	1075.9	1080.1	1083.6	1080.1
152.5°	1103.1	1109.7	1115.1	1119.4	1115.1
155°	1136.9	1140.0	1143.5	1148.9	1145.4
157.5°	1166.0	1168.3	1170.3	1178.1	1172.6
160°	1192.0	1194.4	1195.6	1202.2	1197.5
162.5°	1216.2	1216.2	1217.3	1224.7	1219.3
165°	1236.8	1235.6	1235.6	1243.4	1237.9
167.5°	1255.4	1251.9	1251.9	1259.7	1254.3
170°	1269.4	1266.3	1265.2	1272.9	1266.3
172.5°	1279.1	1276.0	1274.9	1282.6	1276.0
175°	1286.9	1283.8	1281.5	1289.2	1282.6
177.5°	1291.2	1288.1	1285.7	1292.3	1285.7
180°	1289.2	1289.2	1289.2	1289.2	1289.2

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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	12.23	13.23	13.05	14.08	15.13	11.79	12.79	12.61	13.64	14.69
	3H	13.89	14.79	14.73	15.65	16.73	13.41	14.31	14.25	15.17	16.25
	4H	14.48	15.33	15.34	16.20	17.29	14.00	14.85	14.85	15.71	16.80
	6H	14.88	15.67	15.75	16.54	17.65	14.39	15.18	15.26	16.05	17.16
	8H	14.99	15.74	15.87	16.63	17.73	14.50	15.25	15.37	16.14	17.24
	12H	15.04	15.76	15.92	16.64	17.77	14.54	15.26	15.42	16.14	17.27
4H	2H	12.70	13.55	13.56	14.42	15.51	12.35	13.20	13.21	14.07	15.16
	3H	14.57	15.28	15.44	16.18	17.29	14.17	14.88	15.04	15.78	16.89
	4H	15.29	15.94	16.17	16.83	17.96	14.87	15.52	15.75	16.41	17.55
	6H	15.81	16.37	16.70	17.28	18.42	15.38	15.94	16.28	16.86	18.00
	8H	15.96	16.48	16.86	17.39	18.54	15.53	16.05	16.43	16.96	18.11
	12H	16.03	16.51	16.95	17.44	18.59	15.60	16.07	16.52	17.00	18.15
8H	4H	15.49	16.02	16.39	16.93	18.08	15.12	15.65	16.02	16.56	17.71
	6H	16.12	16.56	17.05	17.51	18.66	15.75	16.18	16.67	17.13	18.28
	8H	16.34	16.72	17.28	17.67	18.84	15.96	16.34	16.89	17.29	18.45
	12H	16.47	16.81	17.41	17.75	18.97	16.07	16.41	17.01	17.35	18.57
12H	4H	15.48	15.96	16.40	16.89	18.04	15.12	15.59	16.04	16.53	17.68
	6H	16.15	16.54	17.09	17.48	18.65	15.79	16.17	16.72	17.12	18.28
	8H	16.40	16.73	17.34	17.67	18.89	16.02	16.36	16.96	17.30	18.52