

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: P916932

Luminaire Tested: DFN2DIP-PN4F0-080D050US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916932
REPORT IS A COMBINATION OF REPORTS P899635 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-080D050US930-FLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

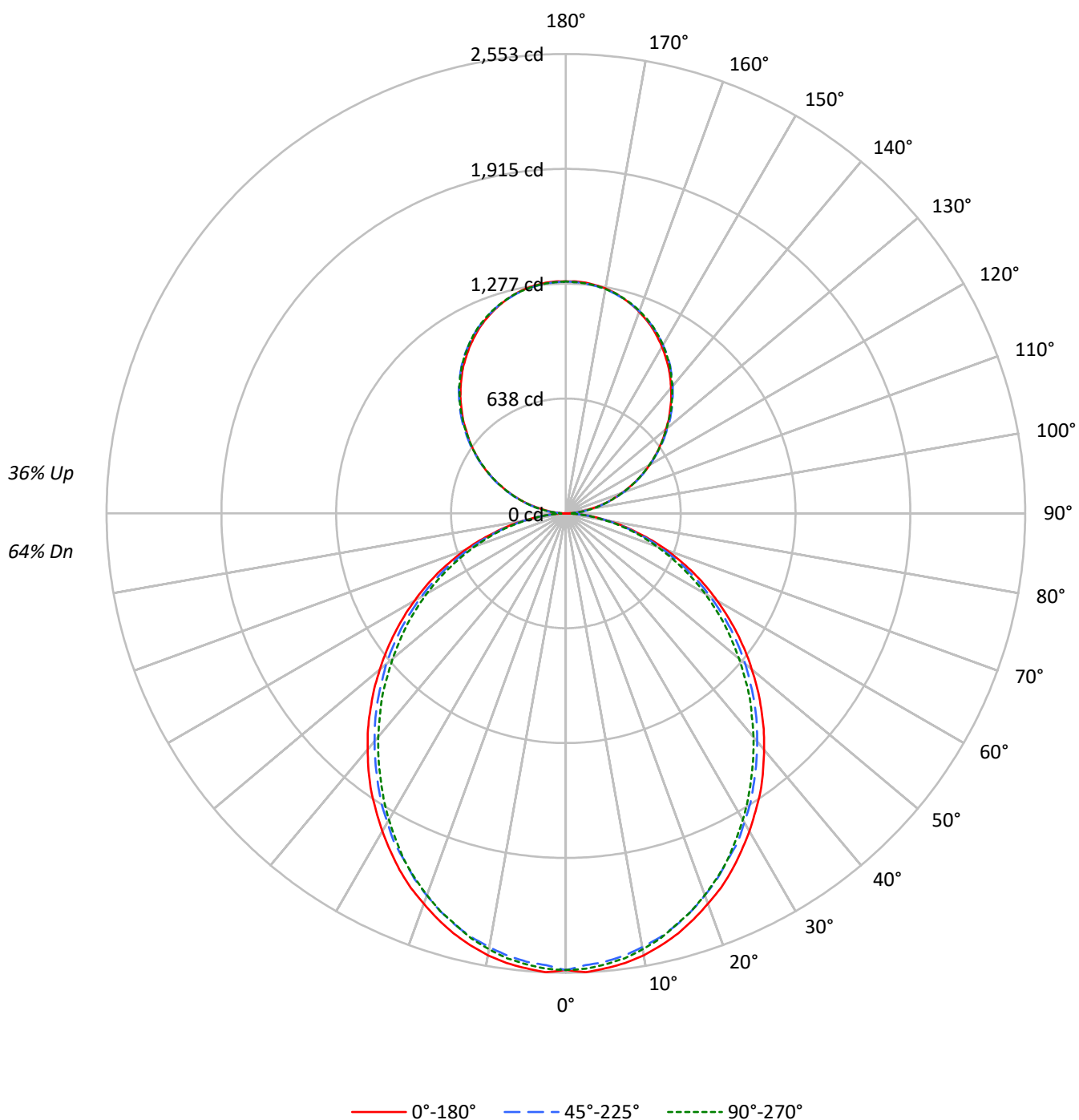
Lumens per Lamp: N/A
Luminaire Lumens: 10064.9 lumens
Efficiency: N/A
Efficacy: 87.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 114.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	111	111	111	111	104	104	104	104	91	91	91		80	80	80		69
1	101	97	93	89	95	91	87	84	80	77	75		70	68	66		61
2	92	84	78	73	86	79	74	69	70	66	62		62	58	56		54
3	84	74	67	61	79	70	63	58	62	57	52		55	50	47		48
4	77	66	58	51	72	62	55	49	55	49	45		49	44	40		43
5	71	59	50	44	66	55	48	42	49	43	39		44	39	35		38
6	65	53	44	38	61	50	42	37	45	38	34		40	35	31		35
7	60	48	40	34	56	45	38	32	40	34	30		36	31	27		32
8	56	43	35	30	53	41	34	29	37	31	27		33	28	24		29
9	52	40	32	27	49	38	31	26	34	28	24		30	26	22		27
10	49	37	29	24	46	35	28	23	31	26	22		28	23	20		25

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1853	1853	1853
5°	1856	1827	1839
10°	1841	1803	1815
15°	1813	1773	1776
20°	1777	1732	1737
25°	1740	1683	1691
30°	1695	1638	1633
35°	1652	1584	1571
40°	1599	1529	1513
45°	1545	1475	1453
50°	1487	1418	1383
55°	1427	1351	1319
60°	1358	1273	1246
65°	1283	1192	1160
70°	1188	1093	1068
75°	1056	974	983
80°	897	823	820
85°	649	562	548

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1545 cd/sqm

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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	

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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

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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	10.64	11.64	11.46	12.49	13.54	10.20	11.20	11.02	12.05	13.10
	3H	12.31	13.21	13.15	14.07	15.15	11.83	12.73	12.66	13.58	14.67
	4H	12.91	13.76	13.76	14.62	15.71	12.42	13.27	13.27	14.14	15.23
	6H	13.32	14.10	14.18	14.97	16.08	12.82	13.61	13.69	14.48	15.59
	8H	13.43	14.17	14.30	15.06	16.17	12.93	13.68	13.81	14.57	15.68
	12H	13.48	14.19	14.36	15.08	16.21	12.98	13.69	13.86	14.58	15.71
4H	2H	11.11	11.97	11.97	12.83	13.92	10.76	11.62	11.62	12.48	13.57
	3H	13.00	13.71	13.87	14.60	15.71	12.59	13.31	13.46	14.20	15.31
	4H	13.72	14.37	14.60	15.26	16.39	13.30	13.95	14.18	14.84	15.98
	6H	14.25	14.81	15.14	15.72	16.86	13.82	14.38	14.72	15.30	16.43
	8H	14.40	14.92	15.30	15.84	16.98	13.97	14.50	14.87	15.41	16.56
	12H	14.48	14.95	15.40	15.88	17.04	14.04	14.51	14.96	15.44	16.60
8H	4H	13.93	14.45	14.83	15.36	16.51	13.56	14.08	14.46	14.99	16.14
	6H	14.57	15.00	15.50	15.96	17.10	14.19	14.63	15.12	15.58	16.73
	8H	14.79	15.18	15.73	16.12	17.29	14.41	14.79	15.35	15.74	16.90
	12H	14.93	15.27	15.87	16.21	17.43	14.53	14.87	15.47	15.81	17.02
12H	4H	13.92	14.39	14.84	15.32	16.48	13.56	14.03	14.48	14.96	16.12
	6H	14.60	14.98	15.54	15.93	17.10	14.23	14.62	15.17	15.56	16.73
	8H	14.85	15.19	15.79	16.13	17.34	14.48	14.82	15.42	15.75	16.97