

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: P925025

Luminaire Tested: DFN2DIP-PN4F0-050D090US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925025
REPORT IS A COMBINATION OF REPORTS P901221 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-050D090US950-FLLONL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

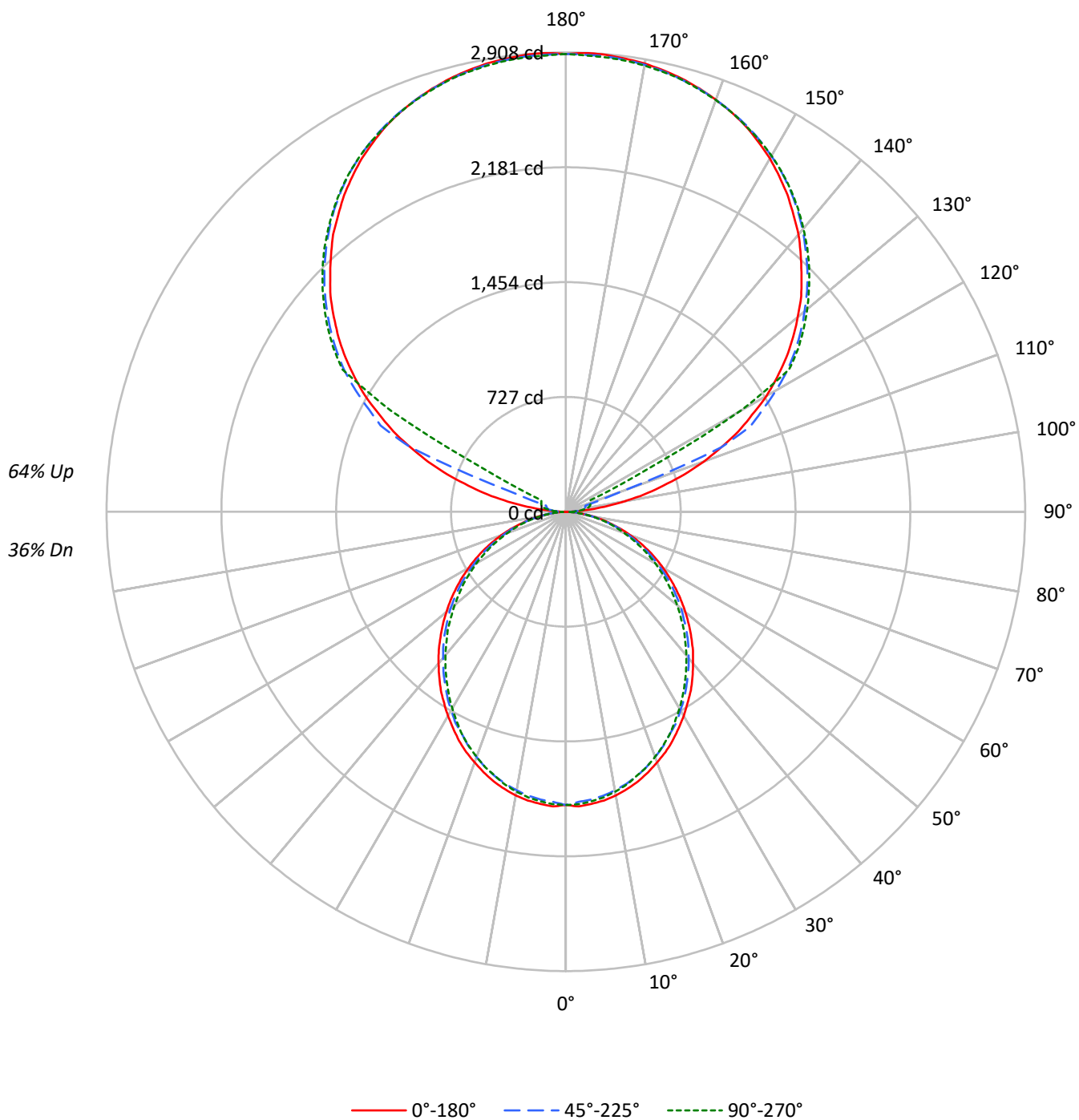
Lumens per Lamp: N/A
Luminaire Lumens: 13222.4 lumens
Efficiency: N/A
Efficacy: 119.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 110.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	75	75	75	59	59	59	43	43	43
1	95	90	87	83	85	82	79	76	66	64	62	51	50	49	38	37	36
2	86	79	73	68	78	72	66	62	58	54	51	45	43	41	33	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	26	24	22
5	66	54	47	41	59	50	43	38	40	35	31	32	28	25	24	21	19
6	61	49	41	35	55	44	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	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1355	1355	1355
5°	1357	1336	1345
10°	1346	1318	1327
15°	1326	1297	1299
20°	1299	1267	1270
25°	1273	1231	1237
30°	1239	1198	1194
35°	1208	1158	1149
40°	1169	1118	1106
45°	1130	1079	1062
50°	1088	1037	1012
55°	1043	988	965
60°	993	931	912
65°	939	871	849
70°	869	799	781
75°	772	712	719
80°	656	602	599
85°	474	410	401

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1545 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.7	1.3
10°-20°	491.5	3.7
20°-30°	722.3	5.5
30°-40°	838.9	6.3
40°-50°	837.9	6.3
50°-60°	730.6	5.5
60°-70°	540.1	4.1
70°-80°	305.6	2.3
80°-90°	85.7	0.6
90°-100°	95.6	0.7
100°-110°	356.2	2.7
110°-120°	944.7	7.1
120°-130°	1566.8	11.8
130°-140°	1664.3	12.6
140°-150°	1546.8	11.7
150°-160°	1243.6	9.4
160°-170°	801.3	6.1
170°-180°	275.8	2.1
0°-30°	1388.5	10.5
0°-40°	2227.5	16.8
0°-60°	3796.0	28.7
0°-90°	4727.4	35.8
90°-120°	1396.4	10.6
90°-150°	6174.3	46.7
90°-180°	8495.0	64.2
0°-180°	13222.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1856	1856	1856	1856	1856	
5°	1856	1849	1829	1844	1840	176
15°	1767	1756	1733	1740	1731	498
25°	1599	1585	1554	1558	1554	736
35°	1380	1362	1333	1322	1314	862
45°	1123	1110	1083	1064	1057	866
55°	850	839	817	796	787	760
65°	573	562	544	528	519	567
75°	300	296	287	277	280	320
85°	73	71	70	64	62	82
90°	2	25	42	53	56	12
95°	136	67	82	92	90	161
105°	637	700	128	151	159	681
115°	1206	1241	1294	323	172	1187
125°	1704	1732	1772	1786	1793	1520
135°	2109	2143	2162	2183	2179	1629
145°	2447	2445	2480	2495	2485	1530
155°	2694	2676	2701	2713	2696	1242
165°	2839	2826	2833	2847	2833	802
175°	2904	2889	2894	2908	2887	276
180°	2898	2898	2898	2898	2898	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1856.0	1856.0	1856.0	1856.0	1856.0
2.5°	1866.8	1857.9	1838.3	1856.0	1852.7
5°	1856.0	1849.0	1829.3	1843.5	1840.2
7.5°	1843.5	1832.9	1813.3	1827.7	1824.0
10°	1824.0	1811.6	1790.2	1804.3	1799.1
12.5°	1797.1	1786.6	1765.2	1774.1	1770.4
15°	1766.8	1756.2	1732.9	1740.2	1731.2
17.5°	1729.3	1718.7	1695.4	1704.3	1695.4
20°	1688.3	1677.7	1652.7	1658.0	1651.0
22.5°	1647.4	1631.2	1608.0	1608.0	1604.3
25°	1599.1	1584.9	1554.5	1558.0	1554.5
27.5°	1545.5	1533.0	1509.9	1504.6	1495.7
30°	1492.1	1477.7	1451.0	1445.7	1438.5
32.5°	1434.9	1424.3	1395.7	1384.9	1377.8
35°	1379.6	1361.8	1333.2	1322.4	1313.6
37.5°	1317.1	1301.1	1272.4	1259.9	1251.1
40°	1253.0	1238.6	1210.0	1194.0	1186.9
42.5°	1190.5	1176.1	1147.7	1129.6	1119.0
45°	1122.7	1110.2	1083.3	1063.8	1056.6
47.5°	1056.6	1044.1	1015.5	995.8	985.2
50°	986.9	978.0	953.0	928.1	919.1
52.5°	919.1	906.6	883.5	863.8	851.3
55°	849.6	838.9	817.4	796.0	787.1
57.5°	779.9	771.0	747.7	726.4	719.1
60°	710.3	703.3	678.3	658.5	653.3
62.5°	642.5	630.0	612.2	594.3	587.2
65°	573.0	562.2	544.4	528.3	519.4
67.5°	501.6	492.6	476.6	464.1	456.9
70°	435.5	428.3	412.2	399.7	392.8
72.5°	367.8	360.5	351.6	339.1	333.8
75°	299.7	296.3	287.2	276.7	280.3
77.5°	239.2	231.9	228.4	223.0	217.8
80°	178.6	176.7	173.1	167.8	164.2
82.5°	121.3	121.3	119.6	112.5	112.5
85°	73.1	71.4	69.6	64.2	62.5
87.5°	32.1	28.6	25.0	19.7	17.8
90°	2.0	25.2	41.8	52.6	56.5
92.5°	52.6	44.1	50.3	54.6	56.5
95°	136.2	67.0	81.7	92.3	90.2
97.5°	245.3	73.5	106.8	113.2	115.2
100°	371.2	84.0	119.5	136.2	140.4
102.5°	509.4	505.4	123.7	146.6	153.1
105°	637.4	700.4	127.9	150.9	159.3
107.5°	786.3	838.6	132.2	155.1	163.6
110°	928.9	972.8	367.0	157.3	165.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1063.1	1100.7	1065.1	161.3	167.8
115°	1205.6	1241.2	1293.7	322.9	172.0
117.5°	1329.3	1371.2	1407.0	1107.0	557.7
120°	1467.7	1499.1	1537.0	1562.1	1279.0
122.5°	1585.1	1618.7	1660.7	1673.1	1675.4
125°	1704.5	1731.9	1771.8	1786.5	1792.7
127.5°	1813.6	1842.9	1874.6	1895.5	1897.5
130°	1916.4	1950.1	1973.0	1996.1	1994.1
132.5°	2021.2	2048.6	2071.5	2090.5	2088.5
135°	2109.4	2143.0	2161.7	2182.8	2178.6
137.5°	2201.5	2226.6	2247.8	2268.7	2262.5
140°	2291.6	2308.6	2331.5	2350.4	2340.0
142.5°	2367.4	2382.0	2409.1	2425.8	2415.4
145°	2447.0	2444.7	2480.4	2495.1	2484.6
147.5°	2516.0	2509.8	2545.4	2555.9	2547.6
150°	2583.2	2568.5	2602.1	2614.5	2604.1
152.5°	2639.7	2623.0	2654.4	2667.1	2652.4
155°	2694.3	2675.6	2700.7	2713.2	2696.5
157.5°	2738.4	2721.7	2740.6	2755.2	2738.4
160°	2776.1	2763.5	2776.1	2788.6	2773.9
162.5°	2809.5	2797.0	2807.5	2822.2	2803.3
165°	2838.9	2826.4	2832.7	2847.4	2832.7
167.5°	2862.1	2849.4	2855.8	2870.5	2851.6
170°	2881.0	2868.3	2872.5	2887.2	2868.3
172.5°	2893.5	2881.0	2885.2	2899.9	2881.0
175°	2903.9	2889.2	2893.5	2908.1	2887.2
177.5°	2908.1	2893.5	2895.7	2910.4	2891.5
180°	2897.7	2897.7	2897.7	2897.7	2897.7

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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	6.85	7.60	7.92	8.67	10.13	6.41	7.16	7.48	8.23	9.69
	3H	8.51	9.17	9.59	10.25	11.73	8.02	8.69	9.10	9.77	11.25
	4H	9.09	9.72	10.18	10.81	12.29	8.60	9.24	9.69	10.32	11.80
	6H	9.49	10.07	10.59	11.16	12.65	8.99	9.58	10.09	10.66	12.16
	8H	9.59	10.14	10.69	11.25	12.74	9.10	9.65	10.20	10.75	12.24
	12H	9.63	10.16	10.74	11.26	12.77	9.13	9.66	10.24	10.76	12.27
4H	2H	7.30	7.93	8.40	9.01	10.50	6.95	7.58	8.05	8.66	10.15
	3H	9.16	9.69	10.26	10.80	12.29	8.75	9.28	9.86	10.39	11.89
	4H	9.87	10.35	10.98	11.45	12.97	9.45	9.94	10.56	11.04	12.56
	6H	10.38	10.80	11.50	11.92	13.43	9.96	10.37	11.07	11.50	13.01
	8H	10.53	10.92	11.64	12.03	13.56	10.10	10.49	11.22	11.60	13.13
	12H	10.60	10.95	11.73	12.08	13.61	10.16	10.51	11.29	11.64	13.17
8H	4H	10.06	10.45	11.17	11.56	13.09	9.69	10.07	10.80	11.19	12.72
	6H	10.69	11.01	11.82	12.16	13.69	10.31	10.63	11.45	11.79	13.31
	8H	10.91	11.19	12.05	12.33	13.87	10.52	10.80	11.67	11.94	13.49
	12H	11.04	11.28	12.18	12.42	14.00	10.63	10.88	11.78	12.01	13.60
12H	4H	10.04	10.39	11.17	11.52	13.05	9.67	10.03	10.81	11.15	12.69
	6H	10.72	11.00	11.86	12.13	13.68	10.35	10.63	11.49	11.77	13.31
	8H	10.95	11.20	12.10	12.33	13.91	10.58	10.83	11.73	11.96	13.54

END OF REPORT