

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: P913969

Luminaire Tested: DFN2DIP-PN3F0-060D090US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913969
REPORT IS A COMBINATION OF REPORTS P901121 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-060D090US927-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

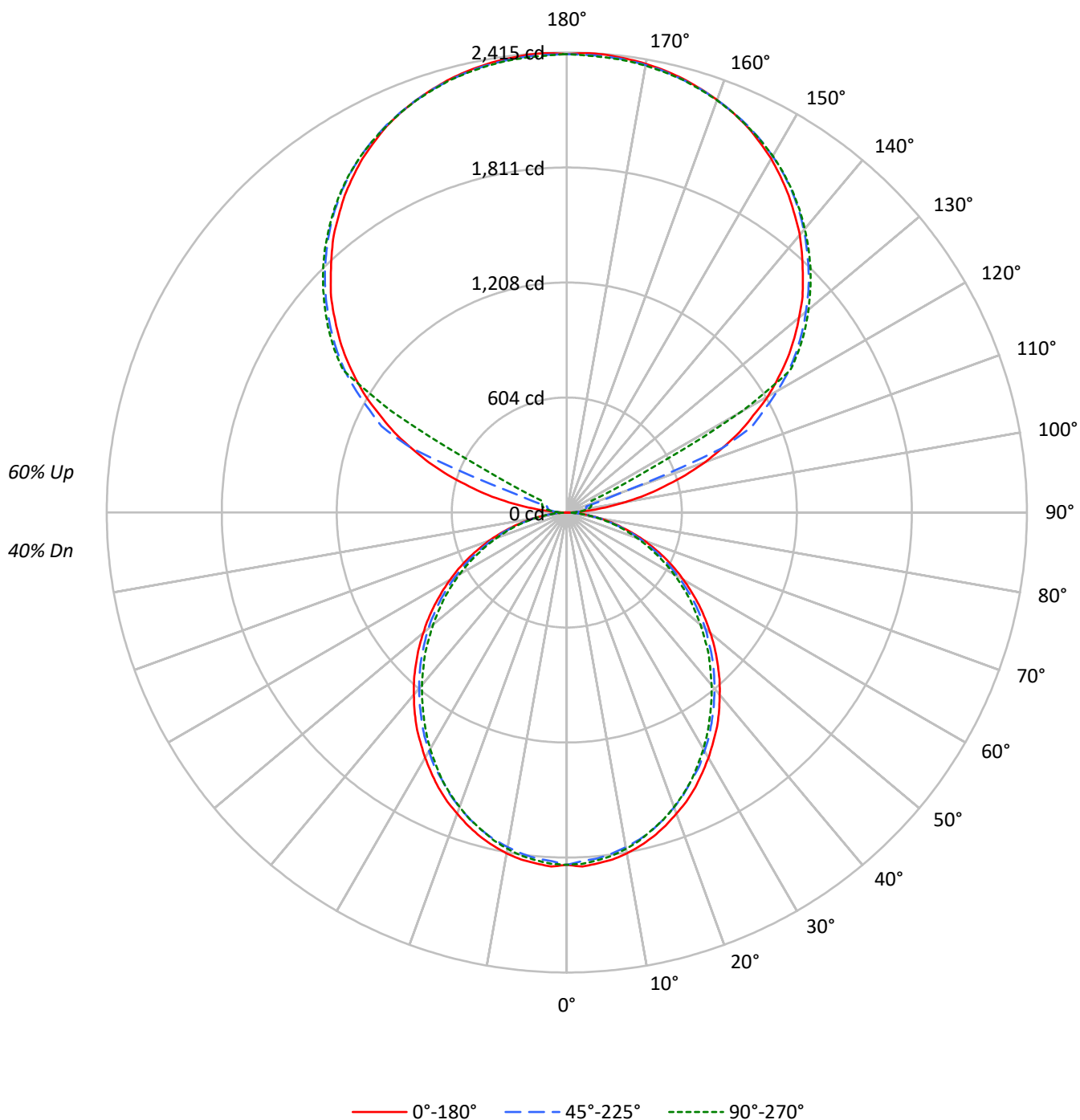
Lumens per Lamp: N/A
Luminaire Lumens: 11763.8 lumens
Efficiency: N/A
Efficacy: 91.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 128.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
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	105	105	105	105		95	95	95	95		78	78	78		62	62	62		47	47	47
1	96	91	87	84		87	83	80	77		68	66	64		54	53	51		41	41	40
2	87	80	74	69		79	73	68	63		60	56	53		48	45	43		37	35	33
3	79	70	63	57		72	64	58	53		53	48	44		42	39	36		32	30	28
4	73	62	54	48		66	57	50	45		47	42	38		37	34	31		29	26	24
5	67	55	47	41		60	50	44	38		42	37	33		34	30	27		26	23	21
6	61	49	41	36		56	45	38	33		38	32	28		30	26	23		24	21	19
7	57	45	37	31		51	41	34	29		34	29	25		28	24	21		22	19	17
8	52	40	33	27		48	37	30	26		31	26	22		25	21	18		20	17	15
9	49	37	29	24		44	34	27	23		28	23	20		23	19	17		18	15	13
10	46	34	27	22		41	31	25	20		26	21	18		21	18	15		17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2162	2162	2162
5°	2164	2130	2145
10°	2145	2100	2115
15°	2112	2064	2069
20°	2069	2014	2022
25°	2025	1955	1967
30°	1970	1901	1898
35°	1919	1836	1825
40°	1855	1771	1755
45°	1792	1705	1684
50°	1722	1636	1601
55°	1650	1556	1525
60°	1567	1462	1438
65°	1477	1364	1335
70°	1363	1244	1224
75°	1205	1101	1120
80°	1013	918	924
85°	714	607	603

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1792 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.1	1.5
10°-20°	489.8	4.2
20°-30°	719.8	6.1
30°-40°	836.0	7.1
40°-50°	834.9	7.1
50°-60°	728.0	6.2
60°-70°	538.2	4.6
70°-80°	304.5	2.6
80°-90°	84.6	0.7
90°-100°	79.3	0.7
100°-110°	295.8	2.5
110°-120°	784.4	6.7
120°-130°	1301.0	11.1
130°-140°	1382.0	11.7
140°-150°	1284.4	10.9
150°-160°	1032.6	8.8
160°-170°	665.4	5.7
170°-180°	229.0	1.9
0°-30°	1383.6	11.8
0°-40°	2219.6	18.9
0°-60°	3782.5	32.2
0°-90°	4709.8	40.0
90°-120°	1159.5	9.9
90°-150°	5127.0	43.6
90°-180°	7054.0	60.0
0°-180°	11763.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1849	1849	1849	1849	1849	
5°	1849	1842	1823	1837	1834	176
15°	1760	1750	1727	1734	1725	496
25°	1593	1579	1549	1552	1549	733
35°	1375	1357	1328	1318	1309	858
45°	1119	1106	1079	1060	1053	863
55°	847	836	814	793	784	757
65°	571	560	542	526	518	564
75°	299	295	286	276	279	319
85°	73	71	69	64	62	81
90°	2	21	35	44	47	11
95°	113	56	68	77	75	134
105°	529	582	106	125	132	566
115°	1001	1031	1074	268	143	986
125°	1415	1438	1471	1483	1489	1262
135°	1752	1780	1795	1813	1809	1353
145°	2032	2030	2060	2072	2063	1271
155°	2237	2222	2243	2253	2239	1031
165°	2357	2347	2352	2364	2352	666
175°	2411	2399	2403	2415	2398	229
180°	2406	2406	2406	2406	2406	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1849.4	1849.4	1849.4	1849.4	1849.4
2.5°	1860.2	1851.3	1831.7	1849.4	1846.0
5°	1849.4	1842.5	1822.8	1837.0	1833.6
7.5°	1837.0	1826.5	1806.8	1821.1	1817.6
10°	1817.6	1805.1	1783.8	1797.9	1792.6
12.5°	1790.8	1780.2	1758.9	1767.8	1764.2
15°	1760.5	1750.0	1726.8	1734.0	1725.1
17.5°	1723.2	1712.7	1689.5	1698.3	1689.5
20°	1682.3	1671.7	1646.8	1652.1	1645.1
22.5°	1641.6	1625.5	1602.3	1602.3	1598.7
25°	1593.4	1579.3	1549.0	1552.4	1549.0
27.5°	1540.0	1527.6	1504.5	1499.3	1490.4
30°	1486.8	1472.4	1445.9	1440.6	1433.4
32.5°	1429.8	1419.3	1390.8	1380.0	1372.8
35°	1374.8	1357.0	1328.5	1317.7	1308.8
37.5°	1312.5	1296.4	1268.0	1255.4	1246.6
40°	1248.5	1234.1	1205.7	1189.9	1182.6
42.5°	1186.2	1171.9	1143.6	1125.7	1115.1
45°	1118.7	1106.2	1079.4	1060.0	1052.8
47.5°	1052.8	1040.4	1011.9	992.3	981.7
50°	983.4	974.5	949.7	924.7	915.8
52.5°	915.8	903.4	880.4	860.8	848.3
55°	846.6	835.8	814.5	793.2	784.3
57.5°	777.2	768.3	745.1	723.8	716.6
60°	707.7	700.8	675.9	656.2	650.9
62.5°	640.2	627.7	610.0	592.2	585.1
65°	570.9	560.2	542.5	526.4	517.5
67.5°	499.8	490.8	474.9	462.5	455.3
70°	434.0	426.8	410.7	398.3	391.3
72.5°	366.4	359.3	350.4	337.9	332.6
75°	298.7	295.3	286.2	275.7	279.2
77.5°	238.3	231.2	227.5	222.3	217.0
80°	177.9	176.0	172.5	167.2	163.6
82.5°	121.0	121.0	119.2	112.1	112.1
85°	72.8	71.1	69.4	63.9	62.3
87.5°	32.1	28.5	24.9	19.6	17.7
90°	1.7	20.9	34.7	43.6	46.9
92.5°	43.6	36.6	41.7	45.3	46.9
95°	113.1	55.6	67.8	76.7	74.9
97.5°	203.7	61.0	88.7	94.0	95.7
100°	308.2	69.7	99.3	113.1	116.6
102.5°	423.0	419.7	102.7	121.8	127.1
105°	529.3	581.6	106.2	125.3	132.3
107.5°	652.9	696.3	109.8	128.8	135.9
110°	771.3	807.8	304.8	130.6	137.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	882.8	914.0	884.5	134.0	139.3
115°	1001.1	1030.6	1074.3	268.2	142.8
117.5°	1103.8	1138.6	1168.3	919.2	463.1
120°	1218.8	1244.8	1276.3	1297.1	1062.1
122.5°	1316.2	1344.1	1379.0	1389.3	1391.2
125°	1415.4	1438.1	1471.2	1483.4	1488.6
127.5°	1505.9	1530.3	1556.6	1574.0	1575.6
130°	1591.3	1619.3	1638.3	1657.5	1655.9
132.5°	1678.4	1701.1	1720.1	1735.9	1734.2
135°	1751.6	1779.5	1795.0	1812.6	1809.1
137.5°	1828.1	1849.0	1866.5	1883.9	1878.7
140°	1902.9	1917.0	1936.0	1951.7	1943.1
142.5°	1965.8	1978.0	2000.5	2014.4	2005.7
145°	2031.9	2030.0	2059.7	2071.9	2063.2
147.5°	2089.2	2084.1	2113.6	2122.3	2115.4
150°	2145.1	2132.9	2160.8	2171.1	2162.4
152.5°	2192.0	2178.1	2204.2	2214.7	2202.5
155°	2237.3	2221.8	2242.6	2253.0	2239.1
157.5°	2273.9	2260.0	2275.7	2287.9	2273.9
160°	2305.2	2294.7	2305.2	2315.6	2303.4
162.5°	2333.0	2322.6	2331.3	2343.5	2327.8
165°	2357.4	2347.0	2352.2	2364.4	2352.2
167.5°	2376.6	2366.1	2371.4	2383.6	2367.9
170°	2392.3	2381.8	2385.3	2397.5	2381.8
172.5°	2402.7	2392.3	2395.8	2408.0	2392.3
175°	2411.3	2399.1	2402.7	2414.8	2397.5
177.5°	2414.8	2402.7	2404.5	2416.7	2401.0
180°	2406.2	2406.2	2406.2	2406.2	2406.2

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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	8.91	9.69	9.95	10.74	12.14	8.48	9.25	9.51	10.30	11.71
	3H	10.56	11.26	11.61	12.31	13.74	10.08	10.78	11.13	11.83	13.26
	4H	11.14	11.80	12.20	12.86	14.29	10.66	11.32	11.72	12.37	13.81
	6H	11.53	12.14	12.60	13.20	14.65	11.04	11.65	12.11	12.71	14.16
	8H	11.63	12.21	12.71	13.29	14.73	11.14	11.72	12.22	12.80	14.24
	12H	11.68	12.23	12.76	13.30	14.76	11.18	11.73	12.26	12.80	14.26
4H	2H	9.36	10.02	10.43	11.08	12.51	9.01	9.67	10.08	10.73	12.16
	3H	11.21	11.77	12.29	12.85	14.29	10.81	11.36	11.89	12.45	13.89
	4H	11.92	12.43	13.00	13.50	14.97	11.50	12.01	12.58	13.08	14.55
	6H	12.42	12.86	13.51	13.96	15.42	12.00	12.44	13.09	13.53	14.99
	8H	12.57	12.97	13.66	14.06	15.54	12.14	12.55	13.23	13.64	15.11
	12H	12.64	13.00	13.74	14.10	15.59	12.20	12.57	13.30	13.67	15.15
8H	4H	12.11	12.51	13.19	13.60	15.08	11.74	12.14	12.82	13.23	14.71
	6H	12.73	13.06	13.84	14.19	15.67	12.35	12.69	13.46	13.82	15.29
	8H	12.94	13.24	14.06	14.35	15.84	12.56	12.85	13.68	13.97	15.46
	12H	13.06	13.32	14.19	14.43	15.96	12.67	12.92	13.79	14.03	15.56
12H	4H	12.09	12.45	13.19	13.56	15.04	11.72	12.09	12.83	13.19	14.68
	6H	12.75	13.05	13.87	14.16	15.65	12.39	12.68	13.51	13.80	15.29
	8H	12.99	13.24	14.11	14.35	15.89	12.62	12.87	13.74	13.98	15.51

END OF REPORT