

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: P914024

Luminaire Tested: DFN2DIP-PN3F0-080D090US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914024
REPORT IS A COMBINATION OF REPORTS P899605 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-080D090US927-FLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

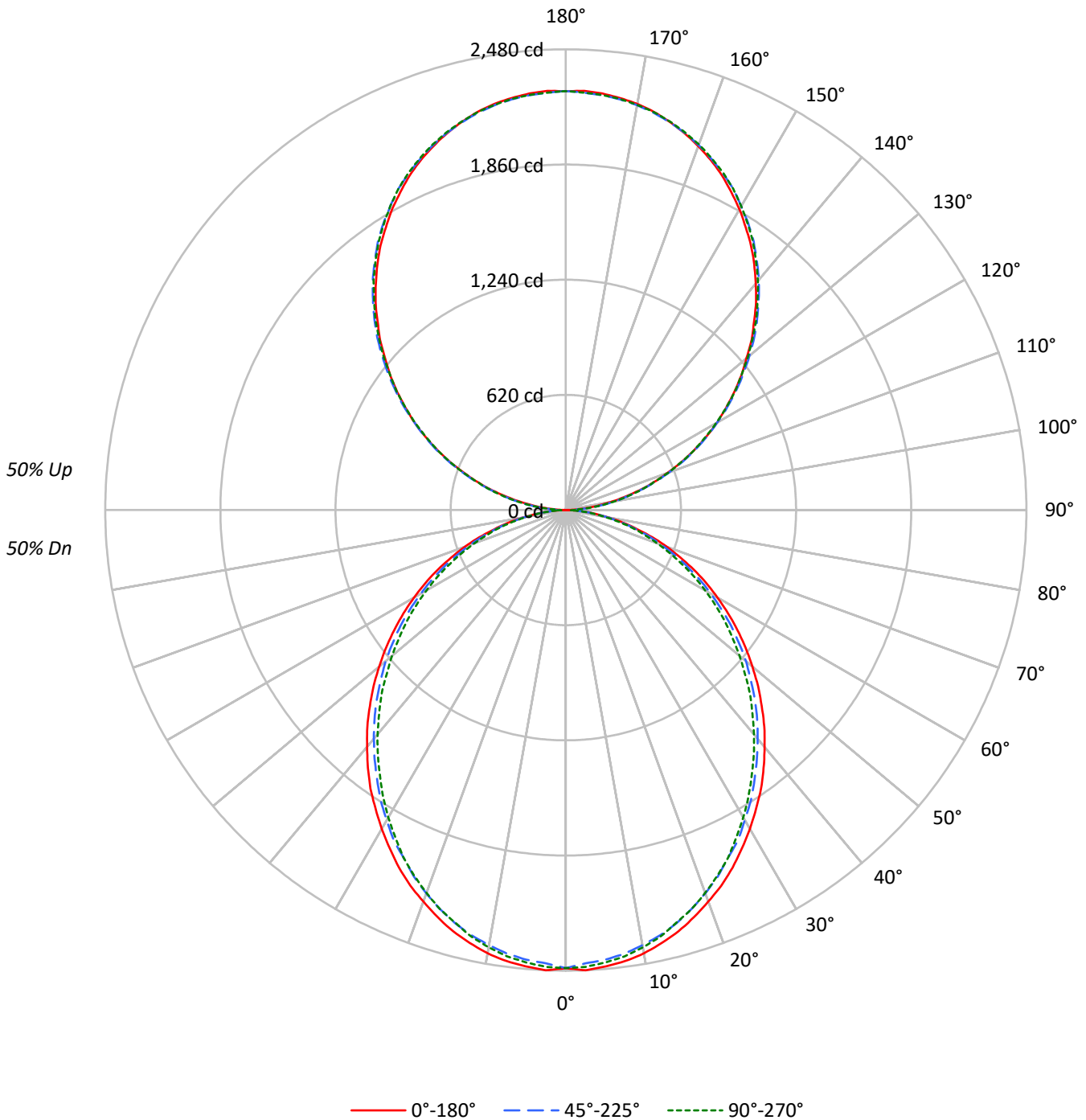
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12583.8 lumens
Efficiency: N/A
Efficacy: 83.3 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): 151.1
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

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				20
RC	80				70				50				30				10				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	56	56	56	50
1	98	93	90	86	90	86	83	80	73	71	68	61	59	58	50	48	47	50	48	47	42
2	89	82	75	70	82	75	70	66	64	60	57	53	51	48	44	42	40	44	42	40	35
3	81	72	64	59	75	66	60	55	56	52	48	47	44	41	39	36	34	39	36	34	30
4	74	63	56	50	68	59	52	46	50	45	41	42	38	35	35	32	29	35	32	29	26
5	68	57	48	42	63	53	45	40	45	39	35	38	34	30	31	28	25	31	28	25	22
6	63	51	43	37	58	47	40	35	40	35	31	34	30	26	28	25	22	28	25	22	20
7	58	46	38	32	53	43	36	30	37	31	27	31	27	23	26	22	20	26	22	20	17
8	54	42	34	29	50	39	32	27	33	28	24	28	24	21	24	20	18	24	20	18	16
9	50	38	30	25	46	35	29	24	31	25	21	26	22	19	22	19	16	22	19	16	14
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	15	20	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2883	2883	2883
5°	2885	2840	2860
10°	2860	2800	2820
15°	2817	2752	2759
20°	2758	2686	2696
25°	2700	2607	2623
30°	2627	2534	2530
35°	2558	2448	2433
40°	2474	2361	2340
45°	2389	2273	2245
50°	2297	2181	2135
55°	2200	2075	2033
60°	2090	1949	1917
65°	1970	1819	1780
70°	1817	1659	1632
75°	1606	1468	1493
80°	1351	1225	1232
85°	952	810	803

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2389 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.1	1.8
10°-20°	653.0	5.2
20°-30°	959.7	7.6
30°-40°	1114.6	8.9
40°-50°	1113.2	8.8
50°-60°	970.7	7.7
60°-70°	717.6	5.7
70°-80°	406.0	3.2
80°-90°	113.6	0.9
90°-100°	139.5	1.1
100°-110°	443.3	3.5
110°-120°	758.7	6.0
120°-130°	997.8	7.9
130°-140°	1120.0	8.9
140°-150°	1098.2	8.7
150°-160°	921.3	7.3
160°-170°	611.0	4.9
170°-180°	213.5	1.7
0°-30°	1844.8	14.7
0°-40°	2959.4	23.5
0°-60°	5043.4	40.1
0°-90°	6280.5	49.9
90°-120°	1341.5	10.7
90°-150°	4557.5	36.2
90°-180°	6303.0	50.1
0°-180°	12583.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2466	2466	2466	2466	2466	
5°	2466	2457	2430	2449	2445	234
15°	2348	2333	2302	2312	2300	661
25°	2125	2106	2066	2070	2066	978
35°	1833	1809	1771	1757	1745	1145
45°	1492	1475	1439	1413	1404	1151
55°	1129	1114	1086	1058	1046	1009
65°	761	747	723	702	690	753
75°	398	394	382	368	372	425
85°	97	95	93	85	83	108
90°	2	24	67	62	65	12
95°	99	118	122	122	118	110
105°	409	415	419	422	422	432
115°	761	772	769	767	761	753
125°	1107	1124	1119	1113	1111	990
135°	1432	1453	1458	1455	1450	1107
145°	1739	1752	1763	1765	1758	1086
155°	1988	1994	2000	2009	2003	915
165°	2163	2161	2161	2175	2165	610
175°	2251	2245	2241	2255	2243	214
180°	2255	2255	2255	2255	2255	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2465.9	2465.9	2465.9	2465.9	2465.9
2.5°	2480.2	2468.4	2442.3	2465.9	2461.4
5°	2465.9	2456.6	2430.5	2449.3	2444.8
7.5°	2449.3	2435.2	2409.1	2428.2	2423.4
10°	2423.4	2406.8	2378.4	2397.2	2390.2
12.5°	2387.7	2373.6	2345.2	2357.0	2352.2
15°	2347.5	2333.4	2302.4	2312.0	2300.2
17.5°	2297.6	2283.5	2252.6	2264.4	2252.6
20°	2243.1	2229.0	2195.8	2202.8	2193.5
22.5°	2188.7	2167.3	2136.4	2136.4	2131.6
25°	2124.6	2105.7	2065.5	2070.0	2065.5
27.5°	2053.3	2036.8	2006.0	1999.0	1987.2
30°	1982.4	1963.3	1927.9	1920.8	1911.2
32.5°	1906.5	1892.4	1854.3	1840.0	1830.5
35°	1832.9	1809.3	1771.3	1757.0	1745.2
37.5°	1749.9	1728.5	1690.6	1674.0	1662.2
40°	1664.7	1645.5	1607.6	1586.4	1576.8
42.5°	1581.7	1562.5	1524.8	1500.9	1486.8
45°	1491.6	1475.0	1439.2	1413.3	1403.8
47.5°	1403.8	1387.2	1349.2	1323.0	1308.9
50°	1311.2	1299.4	1266.1	1233.0	1221.1
52.5°	1221.1	1204.5	1173.9	1147.7	1131.1
55°	1128.8	1114.4	1086.1	1057.6	1045.8
57.5°	1036.3	1024.4	993.5	965.0	955.4
60°	943.6	934.4	901.1	875.0	867.9
62.5°	853.6	837.0	813.3	789.7	780.1
65°	761.3	746.9	723.3	701.9	690.1
67.5°	666.4	654.3	633.2	616.6	607.0
70°	578.6	569.0	547.7	531.1	521.7
72.5°	488.5	479.0	467.1	450.6	443.5
75°	398.2	393.7	381.7	367.6	372.3
77.5°	317.7	308.2	303.4	296.4	289.3
80°	237.3	234.7	230.0	222.9	218.1
82.5°	161.3	161.3	159.0	149.4	149.4
85°	97.1	94.8	92.6	85.3	83.0
87.5°	42.8	38.0	33.2	26.1	23.7
90°	2.1	24.5	66.6	62.5	64.6
92.5°	42.1	57.1	59.2	61.2	61.2
95°	99.3	118.3	121.7	121.7	118.3
97.5°	165.2	182.8	190.4	190.4	190.4
100°	241.3	257.0	262.4	262.4	260.4
102.5°	321.5	333.1	340.6	342.6	340.6
105°	409.2	414.6	418.7	422.2	422.2
107.5°	496.2	504.4	504.4	505.7	496.2
110°	580.5	591.4	591.4	591.4	586.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	671.6	683.2	681.1	675.7	671.6
115°	761.4	772.2	768.8	766.8	761.4
117.5°	850.4	865.4	855.9	850.4	844.9
120°	940.2	955.1	940.2	940.2	934.0
122.5°	1021.7	1040.8	1031.3	1025.8	1021.7
125°	1107.4	1124.3	1119.0	1112.8	1110.8
127.5°	1191.0	1212.0	1204.6	1196.4	1191.0
130°	1269.2	1293.6	1290.2	1286.1	1278.7
132.5°	1356.8	1375.9	1377.2	1367.7	1362.3
135°	1432.3	1453.3	1457.5	1455.4	1450.0
137.5°	1516.6	1533.6	1537.0	1535.6	1527.5
140°	1590.7	1607.7	1617.2	1617.2	1609.7
142.5°	1666.8	1683.8	1689.2	1691.3	1683.8
145°	1738.9	1752.5	1763.3	1765.4	1757.9
147.5°	1803.5	1820.4	1828.6	1832.0	1824.6
150°	1870.1	1881.7	1889.1	1895.2	1889.1
152.5°	1929.2	1940.8	1950.3	1957.8	1950.3
155°	1988.4	1993.8	1999.9	2009.4	2003.3
157.5°	2039.3	2043.4	2046.8	2060.4	2050.9
160°	2084.9	2089.0	2091.0	2102.5	2094.4
162.5°	2127.0	2127.0	2129.1	2142.0	2132.5
165°	2163.1	2161.0	2161.0	2174.6	2165.1
167.5°	2195.7	2189.6	2189.6	2203.1	2193.6
170°	2220.2	2214.7	2212.7	2226.3	2214.7
172.5°	2237.1	2231.7	2229.7	2243.3	2231.7
175°	2250.7	2245.3	2241.2	2254.9	2243.3
177.5°	2258.2	2252.8	2248.7	2260.3	2248.7
180°	2254.9	2254.9	2254.9	2254.9	2254.9



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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	10.90	11.76	11.86	12.74	14.01	10.46	11.32	11.42	12.30	13.57
	3H	12.56	13.33	13.52	14.31	15.60	12.07	12.84	13.04	13.83	15.12
	4H	13.14	13.87	14.12	14.86	16.16	12.65	13.38	13.64	14.37	15.67
	6H	13.53	14.21	14.53	15.20	16.51	13.04	13.72	14.04	14.71	16.03
	8H	13.64	14.28	14.64	15.29	16.60	13.15	13.79	14.15	14.80	16.11
	12H	13.68	14.29	14.69	15.29	16.63	13.19	13.80	14.19	14.80	16.13
4H	2H	11.36	12.09	12.35	13.08	14.38	11.01	11.74	12.00	12.72	14.03
	3H	13.22	13.83	14.22	14.84	16.16	12.82	13.43	13.81	14.44	15.76
	4H	13.93	14.48	14.93	15.49	16.83	13.51	14.07	14.52	15.08	16.42
	6H	14.44	14.92	15.45	15.95	17.29	14.01	14.49	15.03	15.53	16.86
	8H	14.58	15.03	15.60	16.06	17.41	14.16	14.61	15.18	15.63	16.98
	12H	14.65	15.06	15.69	16.10	17.46	14.22	14.62	15.25	15.66	17.02
8H	4H	14.12	14.57	15.14	15.59	16.95	13.75	14.20	14.77	15.22	16.58
	6H	14.74	15.11	15.79	16.18	17.53	14.37	14.74	15.41	15.81	17.16
	8H	14.96	15.29	16.01	16.34	17.71	14.58	14.90	15.63	15.96	17.32
	12H	15.09	15.37	16.14	16.42	17.83	14.69	14.98	15.74	16.02	17.43
12H	4H	14.10	14.51	15.14	15.55	16.91	13.74	14.15	14.78	15.19	16.55
	6H	14.77	15.10	15.82	16.15	17.52	14.41	14.73	15.46	15.79	17.16
	8H	15.01	15.30	16.06	16.34	17.75	14.64	14.93	15.69	15.97	17.38