

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: P924929

Luminaire Tested: DFN2DIP-PN3F0-080D070US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924929
REPORT IS A COMBINATION OF REPORTS P901097 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-080D070US950-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

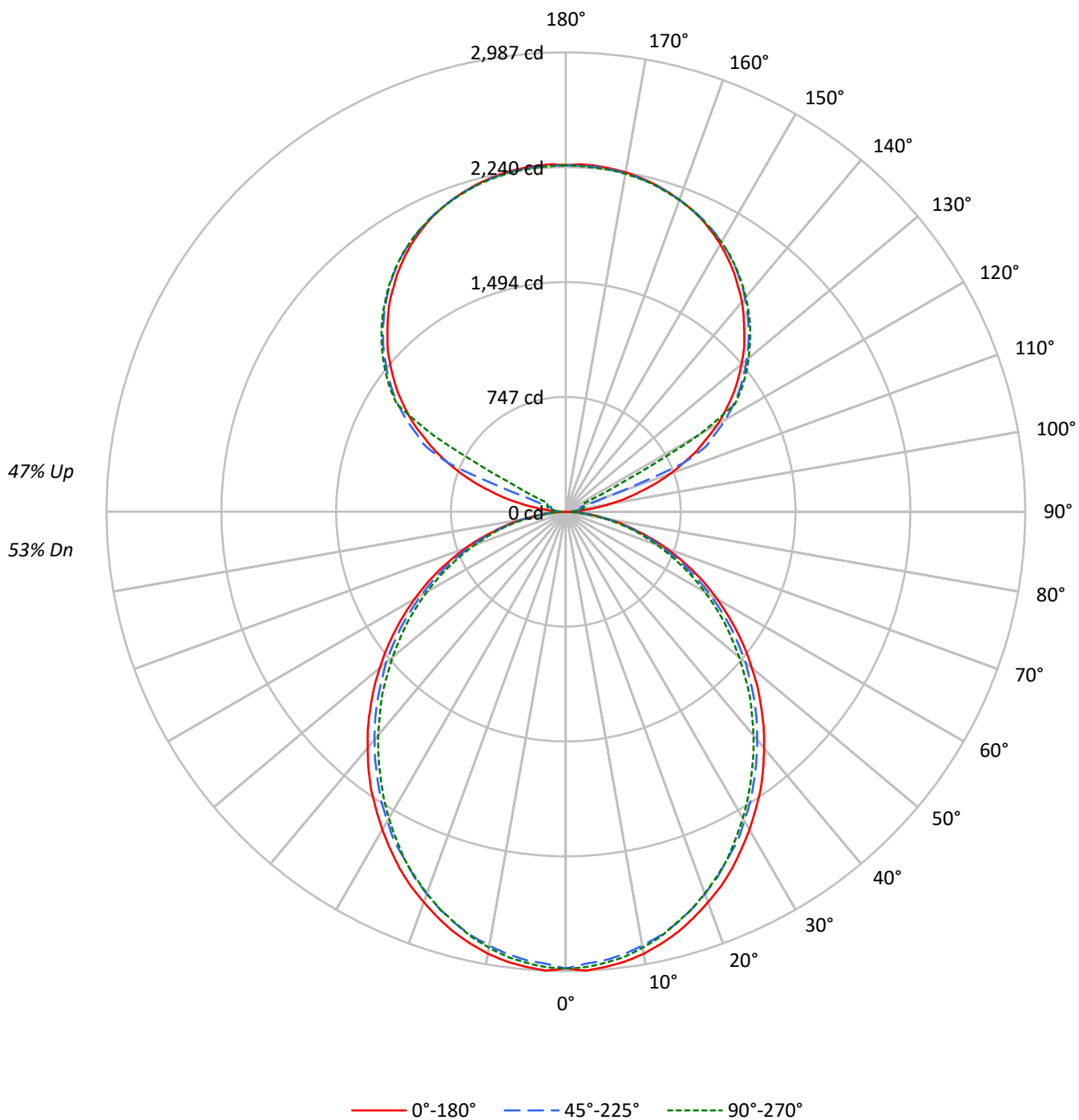
Lumens per Lamp: N/A
Luminaire Lumens: 14166.9 lumens
Efficiency: N/A
Efficacy: 105.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 134.2
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
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	108	108	108	108		100	100	100	100		85	85	85		72	72	72		59	59	59
1	99	94	90	87		91	87	84	81		75	72	70		63	61	60		52	51	50
2	90	82	76	71		83	76	71	66		65	61	58		55	52	50		46	44	42
3	82	72	65	59		76	67	61	56		58	53	49		49	45	42		41	38	36
4	75	64	56	50		69	60	53	47		51	46	42		44	40	36		37	33	31
5	69	57	49	43		63	53	46	41		46	40	36		39	35	31		33	30	27
6	63	51	43	37		59	48	41	35		41	36	31		35	31	28		30	26	24
7	59	46	38	33		54	43	36	31		38	32	28		32	28	24		27	24	21
8	54	42	34	29		50	39	32	27		34	29	25		30	25	22		25	22	19
9	51	38	31	26		47	36	29	25		31	26	22		27	23	20		23	20	17
10	47	35	28	23		44	33	26	22		29	24	20		25	21	18		21	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3471	3471	3471
5°	3475	3421	3445
10°	3445	3372	3397
15°	3392	3314	3322
20°	3322	3235	3246
25°	3251	3140	3159
30°	3164	3052	3047
35°	3081	2948	2930
40°	2979	2843	2818
45°	2877	2738	2704
50°	2766	2627	2571
55°	2649	2499	2449
60°	2517	2348	2309
65°	2372	2190	2143
70°	2188	1998	1965
75°	1934	1768	1798
80°	1627	1474	1483
85°	1148	976	968

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2877 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	279.5	2.0
10°-20°	786.4	5.6
20°-30°	1155.7	8.2
30°-40°	1342.3	9.5
40°-50°	1340.6	9.5
50°-60°	1169.0	8.3
60°-70°	864.1	6.1
70°-80°	488.9	3.5
80°-90°	133.0	0.9
90°-100°	74.3	0.5
100°-110°	277.0	2.0
110°-120°	734.8	5.2
120°-130°	1218.6	8.6
130°-140°	1294.5	9.1
140°-150°	1203.1	8.5
150°-160°	967.2	6.8
160°-170°	623.3	4.4
170°-180°	214.5	1.5
0°-30°	2221.6	15.7
0°-40°	3563.9	25.2
0°-60°	6073.6	42.9
0°-90°	7559.6	53.4
90°-120°	1086.1	7.7
90°-150°	4802.2	33.9
90°-180°	6607.0	46.6
0°-180°	14166.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2970	2970	2970	2970	2970	
5°	2970	2958	2927	2950	2944	282
15°	2827	2810	2773	2784	2770	796
25°	2558	2536	2487	2493	2487	1177
35°	2207	2179	2133	2116	2102	1378
45°	1796	1776	1733	1702	1691	1386
55°	1359	1342	1308	1274	1259	1215
65°	917	900	871	845	831	906
75°	480	474	460	443	448	512
85°	117	114	112	103	100	130
90°	2	20	32	41	44	13
95°	106	52	64	72	70	125
105°	496	545	100	117	124	530
115°	938	965	1006	251	134	923
125°	1326	1347	1378	1390	1394	1182
135°	1641	1667	1681	1698	1694	1267
145°	1903	1902	1929	1941	1932	1190
155°	2096	2081	2100	2110	2097	966
165°	2208	2198	2203	2215	2203	624
175°	2259	2247	2250	2262	2246	215
180°	2254	2254	2254	2254	2254	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2969.6	2969.6	2969.6	2969.6	2969.6
2.5°	2986.9	2972.7	2941.2	2969.6	2964.2
5°	2969.6	2958.4	2927.0	2949.7	2944.2
7.5°	2949.7	2932.7	2901.2	2924.2	2918.5
10°	2918.5	2898.4	2864.2	2886.9	2878.5
12.5°	2875.5	2858.5	2824.2	2838.4	2832.7
15°	2827.0	2810.0	2772.7	2784.2	2770.0
17.5°	2767.0	2750.0	2712.7	2727.0	2712.7
20°	2701.3	2684.3	2644.3	2652.8	2641.5
22.5°	2635.8	2610.0	2572.7	2572.7	2567.0
25°	2558.5	2535.8	2487.4	2492.8	2487.4
27.5°	2472.8	2452.8	2415.8	2407.3	2393.1
30°	2387.4	2364.3	2321.7	2313.2	2301.6
32.5°	2295.9	2278.9	2233.1	2215.9	2204.4
35°	2207.4	2178.9	2133.1	2115.9	2101.7
37.5°	2107.4	2081.6	2035.9	2015.9	2001.7
40°	2004.7	1981.6	1936.0	1910.5	1898.9
42.5°	1904.8	1881.7	1836.3	1807.4	1790.6
45°	1796.3	1776.3	1733.2	1702.0	1690.6
47.5°	1690.6	1670.5	1624.8	1593.3	1576.3
50°	1579.1	1564.8	1524.8	1484.8	1470.6
52.5°	1470.6	1450.6	1413.6	1382.2	1362.1
55°	1359.4	1342.1	1307.9	1273.7	1259.4
57.5°	1247.9	1233.7	1196.4	1162.2	1150.6
60°	1136.4	1125.2	1085.2	1053.7	1045.2
62.5°	1027.9	1008.0	979.5	951.0	939.5
65°	916.8	899.5	871.0	845.2	831.0
67.5°	802.5	788.0	762.5	742.6	731.1
70°	696.8	685.3	659.6	639.6	628.3
72.5°	588.3	576.9	562.6	542.6	534.1
75°	479.6	474.1	459.6	442.7	448.4
77.5°	382.6	371.1	365.4	356.9	348.4
80°	285.7	282.7	276.9	268.5	262.6
82.5°	194.2	194.2	191.5	179.9	179.9
85°	117.0	114.2	111.5	102.7	100.0
87.5°	51.5	45.8	40.0	31.5	28.5
90°	1.5	19.6	32.5	40.8	44.0
92.5°	40.8	34.2	39.1	42.5	44.0
95°	105.9	52.1	63.5	71.8	70.1
97.5°	190.7	57.1	83.1	88.1	89.7
100°	288.8	65.3	92.9	105.9	109.2
102.5°	396.2	393.1	96.3	114.1	119.1
105°	495.8	544.7	99.5	117.3	123.9
107.5°	611.5	652.2	102.8	120.7	127.3
110°	722.6	756.6	285.4	122.4	128.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	826.9	856.1	828.5	125.5	130.5
115°	937.7	965.4	1006.2	251.2	133.8
117.5°	1033.9	1066.5	1094.3	861.0	433.8
120°	1141.6	1166.0	1195.5	1215.0	994.8
122.5°	1232.8	1258.9	1291.7	1301.4	1303.1
125°	1325.8	1347.0	1378.1	1389.5	1394.3
127.5°	1410.6	1433.4	1458.0	1474.3	1475.8
130°	1490.5	1516.7	1534.5	1552.5	1551.0
132.5°	1572.1	1593.4	1611.2	1625.9	1624.4
135°	1640.6	1666.7	1681.3	1697.7	1694.5
137.5°	1712.2	1731.9	1748.3	1764.6	1759.7
140°	1782.4	1795.5	1813.4	1828.1	1819.9
142.5°	1841.2	1852.7	1873.8	1886.7	1878.6
145°	1903.2	1901.5	1929.2	1940.6	1932.5
147.5°	1956.8	1952.1	1979.7	1987.8	1981.5
150°	2009.1	1997.8	2023.9	2033.5	2025.4
152.5°	2053.1	2040.1	2064.6	2074.4	2063.0
155°	2095.6	2081.0	2100.5	2110.2	2097.3
157.5°	2129.8	2116.8	2131.5	2143.0	2129.8
160°	2159.3	2149.4	2159.3	2168.9	2157.5
162.5°	2185.2	2175.5	2183.6	2195.1	2180.4
165°	2208.0	2198.4	2203.2	2214.6	2203.2
167.5°	2226.1	2216.1	2221.2	2232.6	2218.0
170°	2240.8	2230.9	2234.2	2245.6	2230.9
172.5°	2250.5	2240.8	2244.1	2255.4	2240.8
175°	2258.6	2247.1	2250.5	2261.8	2245.6
177.5°	2261.8	2250.5	2252.2	2263.7	2248.9
180°	2253.7	2253.7	2253.7	2253.7	2253.7

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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	11.86	12.75	12.79	13.70	14.92	11.42	12.32	12.35	13.26	14.48
	3H	13.52	14.32	14.46	15.27	16.52	13.04	13.84	13.98	14.79	16.04
	4H	14.10	14.86	15.06	15.82	17.08	13.62	14.38	14.57	15.34	16.59
	6H	14.50	15.20	15.47	16.16	17.43	14.01	14.71	14.98	15.67	16.94
	8H	14.60	15.27	15.58	16.25	17.52	14.11	14.78	15.09	15.76	17.03
	12H	14.65	15.28	15.63	16.26	17.55	14.15	14.79	15.13	15.76	17.05
4H	2H	12.32	13.08	13.28	14.04	15.30	11.97	12.73	12.93	13.69	14.94
	3H	14.19	14.82	15.15	15.81	17.08	13.78	14.42	14.75	15.41	16.67
	4H	14.90	15.47	15.87	16.46	17.75	14.48	15.06	15.46	16.04	17.33
	6H	15.41	15.91	16.40	16.91	18.20	14.99	15.48	15.98	16.49	17.78
	8H	15.56	16.02	16.55	17.02	18.33	15.13	15.59	16.12	16.59	17.90
	12H	15.63	16.05	16.64	17.06	18.37	15.19	15.61	16.20	16.63	17.94
8H	4H	15.09	15.56	16.08	16.56	17.86	14.72	15.19	15.71	16.19	17.49
	6H	15.72	16.10	16.73	17.14	18.45	15.34	15.73	16.36	16.77	18.07
	8H	15.93	16.27	16.96	17.30	18.62	15.55	15.89	16.58	16.92	18.24
	12H	16.06	16.36	17.09	17.38	18.75	15.66	15.96	16.69	16.98	18.35
12H	4H	15.08	15.50	16.09	16.51	17.83	14.72	15.14	15.73	16.15	17.46
	6H	15.74	16.08	16.77	17.11	18.44	15.38	15.72	16.41	16.75	18.07
	8H	15.98	16.28	17.01	17.30	18.67	15.61	15.91	16.64	16.93	18.30