

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: P914204

Luminaire Tested: DFN2DIP-PN4F0-080D050US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914204
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-PN4F0-080D050US927-FLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

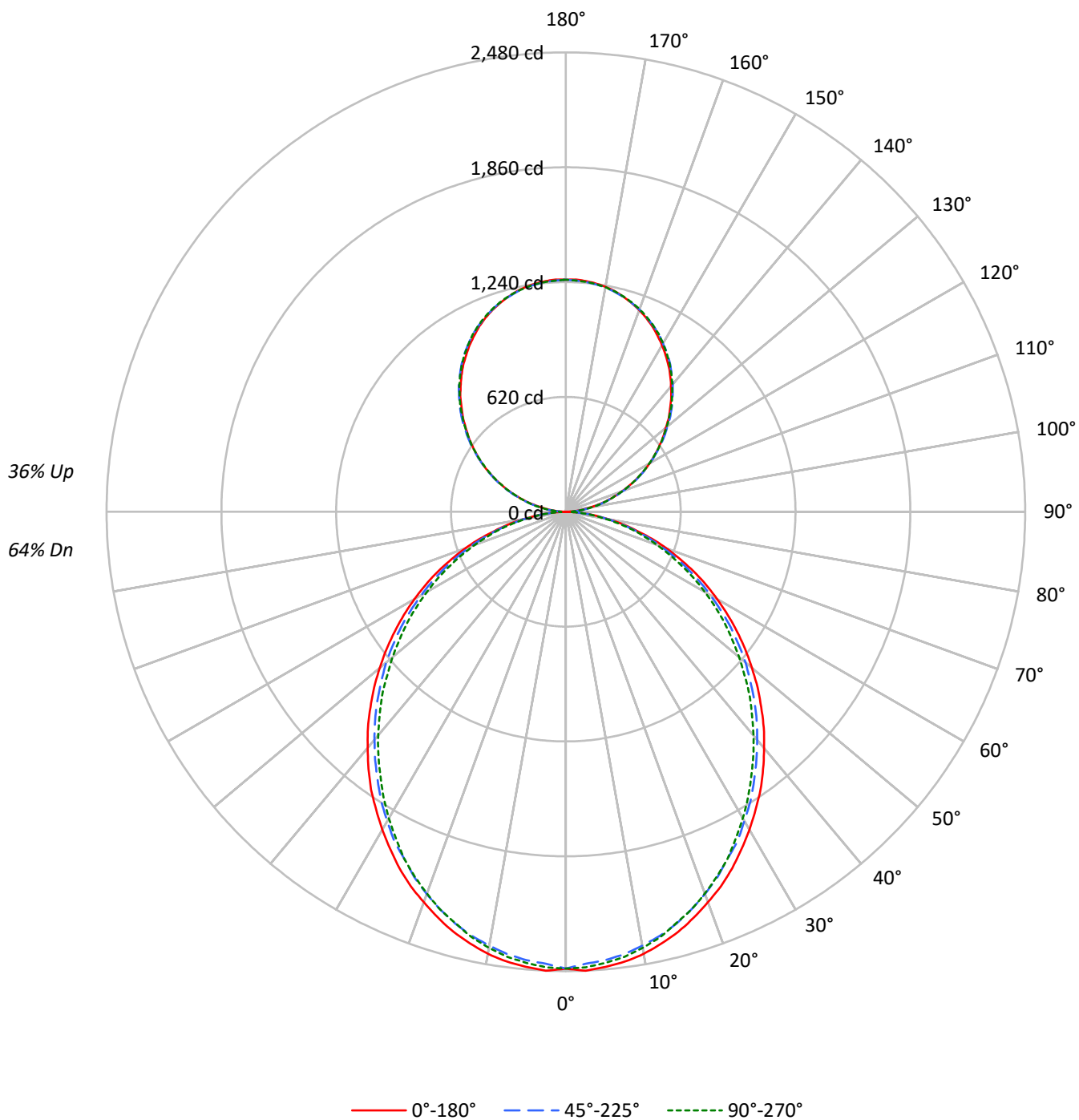
Lumens per Lamp: N/A
Luminaire Lumens: 9779.5 lumens
Efficiency: N/A
Efficacy: 85.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

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°	1800	1800	1800
5°	1803	1775	1787
10°	1788	1752	1763
15°	1762	1723	1726
20°	1726	1683	1688
25°	1691	1635	1643
30°	1647	1591	1586
35°	1605	1539	1527
40°	1553	1486	1470
45°	1502	1433	1411
50°	1445	1377	1344
55°	1386	1313	1282
60°	1320	1237	1211
65°	1247	1158	1127
70°	1154	1061	1037
75°	1026	946	955
80°	872	800	796
85°	630	546	533

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1502 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.1	2.4
10°-20°	653.0	6.7
20°-30°	959.7	9.8
30°-40°	1114.6	11.4
40°-50°	1113.2	11.4
50°-60°	970.7	9.9
60°-70°	717.6	7.3
70°-80°	406.0	4.2
80°-90°	110.7	1.1
90°-100°	77.5	0.8
100°-110°	246.3	2.5
110°-120°	421.5	4.3
120°-130°	554.3	5.7
130°-140°	622.2	6.4
140°-150°	610.1	6.2
150°-160°	511.8	5.2
160°-170°	339.4	3.5
170°-180°	118.6	1.2
0°-30°	1844.8	18.9
0°-40°	2959.4	30.3
0°-60°	5043.4	51.6
0°-90°	6277.6	64.2
90°-120°	745.3	7.6
90°-150°	2532.0	25.9
90°-180°	3502.0	35.8
0°-180°	9779.5	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°	1	14	37	35	36	9
95°	55	66	68	68	66	61
105°	227	230	233	234	234	240
115°	423	429	427	426	423	418
125°	615	625	622	618	617	550
135°	796	807	810	809	806	615
145°	966	974	980	981	977	604
155°	1105	1108	1111	1116	1113	508
165°	1202	1201	1201	1208	1203	339
175°	1250	1247	1245	1253	1246	119
180°	1253	1253	1253	1253	1253	

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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°	1.1	13.6	37.0	34.8	35.9
92.5°	23.4	31.7	32.9	34.0	34.0
95°	55.1	65.8	67.6	67.6	65.8
97.5°	91.7	101.6	105.8	105.8	105.8
100°	134.0	142.8	145.8	145.8	144.7
102.5°	178.6	185.1	189.2	190.4	189.2
105°	227.4	230.4	232.7	234.5	234.5
107.5°	275.7	280.2	280.2	281.0	275.7
110°	322.5	328.6	328.6	328.6	325.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	373.1	379.5	378.4	375.4	373.1
115°	422.9	429.0	427.1	426.0	422.9
117.5°	472.5	480.8	475.5	472.5	469.4
120°	522.3	530.6	522.3	522.3	518.9
122.5°	567.6	578.2	572.9	569.9	567.6
125°	615.2	624.6	621.6	618.2	617.1
127.5°	661.6	673.4	669.2	664.6	661.6
130°	705.1	718.7	716.8	714.5	710.3
132.5°	753.8	764.4	765.2	759.9	756.8
135°	795.7	807.4	809.7	808.6	805.6
137.5°	842.6	852.0	853.9	853.1	848.6
140°	883.7	893.2	898.4	898.4	894.3
142.5°	926.0	935.5	938.5	939.6	935.5
145°	966.1	973.6	979.6	980.8	976.6
147.5°	1002.0	1011.4	1015.9	1017.8	1013.6
150°	1038.9	1045.4	1049.5	1052.9	1049.5
152.5°	1071.8	1078.2	1083.5	1087.7	1083.5
155°	1104.6	1107.6	1111.0	1116.3	1112.9
157.5°	1133.0	1135.2	1137.1	1144.7	1139.4
160°	1158.2	1160.5	1161.7	1168.1	1163.6
162.5°	1181.7	1181.7	1182.8	1190.0	1184.7
165°	1201.7	1200.6	1200.6	1208.2	1202.8
167.5°	1219.8	1216.4	1216.4	1224.0	1218.7
170°	1233.4	1230.4	1229.3	1236.8	1230.4
172.5°	1242.9	1239.8	1238.7	1246.3	1239.8
175°	1250.5	1247.4	1245.2	1252.7	1246.3
177.5°	1254.6	1251.6	1249.3	1255.7	1249.3
180°	1252.7	1252.7	1252.7	1252.7	1252.7

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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	10.54	11.54	11.36	12.39	13.44	10.10	11.10	10.92	11.95	13.00
	3H	12.21	13.11	13.05	13.97	15.05	11.72	12.63	12.56	13.48	14.57
	4H	12.81	13.66	13.66	14.52	15.61	12.32	13.17	13.17	14.04	15.13
	6H	13.22	14.00	14.08	14.87	15.98	12.72	13.51	13.59	14.38	15.49
	8H	13.33	14.07	14.20	14.96	16.07	12.83	13.58	13.71	14.47	15.58
	12H	13.38	14.09	14.26	14.98	16.11	12.88	13.59	13.76	14.48	15.61
4H	2H	11.01	11.87	11.87	12.73	13.82	10.66	11.52	11.52	12.38	13.47
	3H	12.90	13.61	13.77	14.50	15.61	12.49	13.21	13.36	14.10	15.21
	4H	13.62	14.27	14.50	15.16	16.29	13.20	13.85	14.08	14.74	15.88
	6H	14.15	14.71	15.04	15.62	16.76	13.72	14.28	14.62	15.20	16.33
	8H	14.30	14.82	15.20	15.74	16.88	13.87	14.40	14.77	15.31	16.46
	12H	14.38	14.85	15.30	15.78	16.94	13.94	14.41	14.86	15.34	16.50
8H	4H	13.83	14.35	14.73	15.26	16.41	13.46	13.98	14.36	14.89	16.04
	6H	14.47	14.90	15.40	15.86	17.00	14.09	14.53	15.02	15.48	16.63
	8H	14.69	15.08	15.63	16.02	17.19	14.31	14.69	15.24	15.64	16.80
	12H	14.83	15.17	15.77	16.11	17.33	14.43	14.77	15.37	15.71	16.92
12H	4H	13.82	14.29	14.74	15.22	16.38	13.46	13.93	14.38	14.86	16.02
	6H	14.50	14.88	15.44	15.83	17.00	14.13	14.52	15.07	15.46	16.63
	8H	14.75	15.09	15.69	16.03	17.24	14.38	14.72	15.32	15.65	16.87

END OF REPORT