

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: P924168

Luminaire Tested: DFN2DIP-4P4F0-050D080US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924168
REPORT IS A COMBINATION OF REPORTS P899144 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-050D080US950-RLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

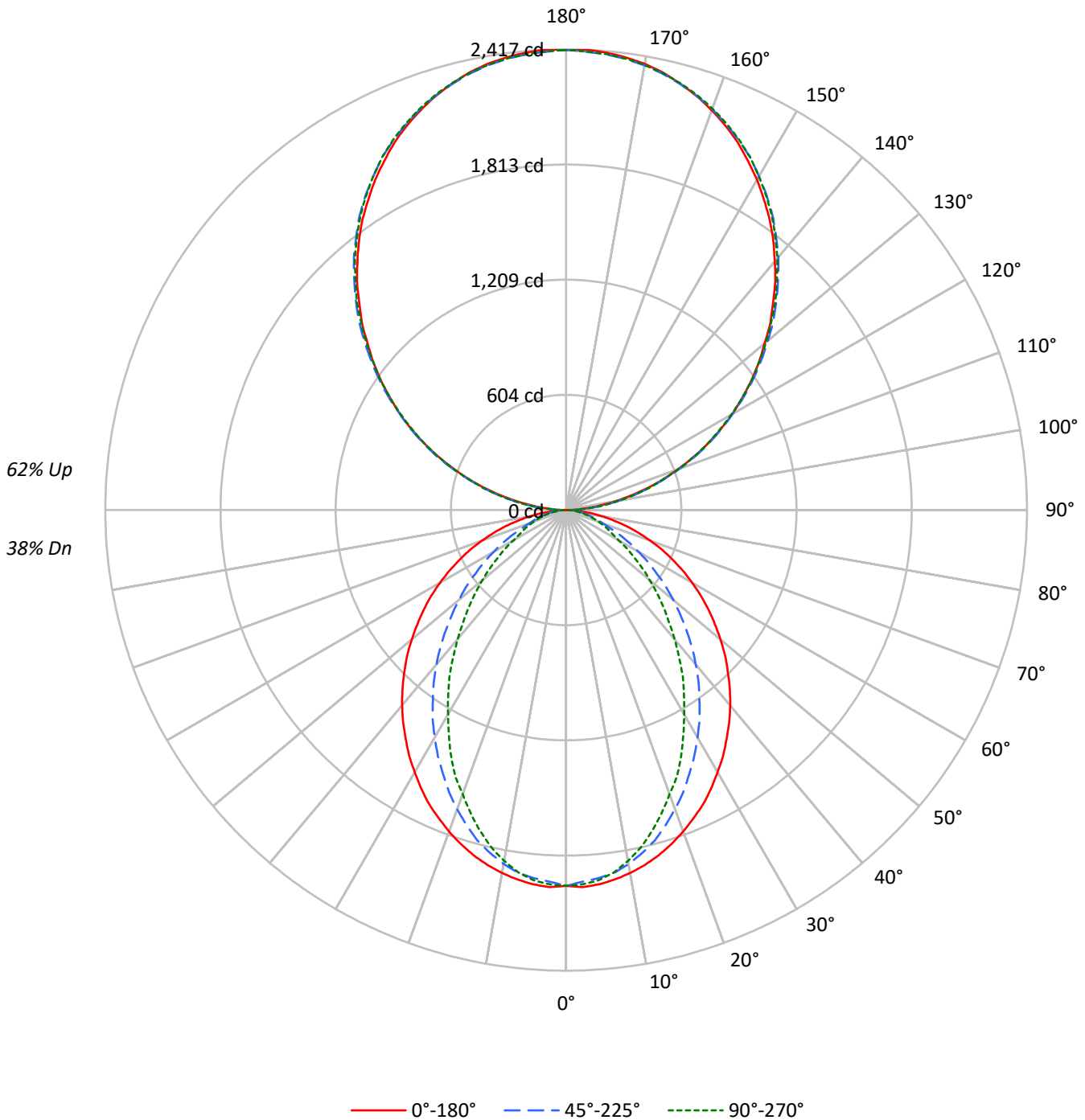
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10808.9 lumens
Efficiency: N/A
Efficacy: 87.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 123.6
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			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	104	104	104	104	95	95	95	95	76	76	76	60	60	60	45	45	45	38			38
1	95	91	88	84	86	83	80	77	67	65	63	53	52	50	40	39	38	32			32
2	87	80	74	69	79	73	68	64	59	56	53	47	45	43	36	34	33	28			28
3	80	71	64	58	72	64	58	54	53	48	45	42	39	37	32	30	28	24			24
4	73	63	55	49	66	57	51	46	47	42	39	38	34	32	29	27	25	21			21
5	67	56	48	42	61	51	44	39	42	37	33	34	30	28	26	24	22	18			18
6	62	50	42	37	56	46	39	34	38	33	29	31	27	24	24	21	19	16			16
7	57	45	38	32	52	42	35	30	35	30	26	28	24	22	22	19	17	15			15
8	53	41	34	29	48	38	31	27	32	27	23	26	22	19	20	18	16	13			13
9	49	38	30	26	45	35	28	24	29	24	21	24	20	17	19	16	14	12			12
10	46	35	28	23	42	32	26	21	27	22	19	22	18	16	17	15	13	11			11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1279	1279	1279
5°	1281	1259	1267
10°	1268	1235	1226
15°	1251	1194	1163
20°	1228	1138	1085
25°	1205	1076	1010
30°	1173	1011	914
35°	1142	942	831
40°	1110	871	734
45°	1074	791	647
50°	1036	711	562
55°	996	625	480
60°	950	535	395
65°	898	443	356
70°	834	358	323
75°	754	317	295
80°	638	267	257
85°	446	181	197

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1829 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.8	1.7
10°-20°	507.2	4.7
20°-30°	712.1	6.6
30°-40°	776.3	7.2
40°-50°	713.5	6.6
50°-60°	560.3	5.2
60°-70°	364.7	3.4
70°-80°	187.7	1.7
80°-90°	54.8	0.5
90°-100°	149.4	1.4
100°-110°	474.6	4.4
110°-120°	812.1	7.5
120°-130°	1068.1	9.9
130°-140°	1198.9	11.1
140°-150°	1175.6	10.9
150°-160°	986.2	9.1
160°-170°	654.0	6.1
170°-180°	228.6	2.1
0°-30°	1404.1	13.0
0°-40°	2180.4	20.2
0°-60°	3454.1	32.0
0°-90°	4061.4	37.6
90°-120°	1436.1	13.3
90°-150°	4878.6	45.1
90°-180°	6747.0	62.4
0°-180°	10808.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1971	1971	1971	1971	1971	
5°	1971	1963	1939	1955	1950	187
15°	1875	1855	1795	1761	1743	528
25°	1702	1645	1527	1454	1427	783
35°	1467	1376	1219	1106	1067	918
45°	1199	1079	892	765	722	926
55°	912	772	580	473	439	815
65°	616	471	310	250	244	610
75°	328	203	143	130	128	347
85°	77	39	34	34	34	88
90°	2	26	71	67	69	11
95°	106	127	130	130	127	118
105°	438	444	448	452	452	462
115°	815	827	823	821	815	806
125°	1185	1204	1198	1191	1189	1059
135°	1533	1556	1560	1558	1552	1185
145°	1861	1876	1888	1890	1882	1163
155°	2128	2134	2141	2151	2144	980
165°	2316	2313	2313	2328	2318	653
175°	2409	2404	2399	2414	2401	229
180°	2414	2414	2414	2414	2414	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1971.4	1971.4	1971.4	1971.4	1971.4
2.5°	1980.3	1971.4	1951.8	1969.7	1966.1
5°	1971.4	1962.6	1939.3	1955.3	1950.1
7.5°	1955.3	1944.7	1919.7	1926.8	1917.8
10°	1933.9	1921.5	1885.9	1880.4	1869.7
12.5°	1907.2	1891.2	1842.9	1832.3	1812.6
15°	1875.1	1855.4	1794.9	1761.0	1743.1
17.5°	1837.6	1809.1	1734.1	1694.9	1666.3
20°	1794.9	1759.1	1669.9	1625.4	1586.0
22.5°	1748.5	1707.4	1603.9	1543.3	1516.6
25°	1702.0	1644.9	1527.2	1454.1	1427.2
27.5°	1646.8	1586.0	1455.8	1371.9	1330.9
30°	1587.9	1520.0	1377.3	1286.4	1238.1
32.5°	1530.8	1448.6	1302.5	1195.4	1150.7
35°	1466.6	1375.6	1218.6	1106.2	1066.9
37.5°	1404.1	1305.9	1140.1	1016.9	972.4
40°	1338.1	1231.1	1057.9	931.3	884.9
42.5°	1270.3	1156.2	975.9	843.8	799.4
45°	1199.0	1079.4	892.1	765.3	722.5
47.5°	1131.2	1004.6	811.9	685.1	645.9
50°	1056.3	929.6	733.3	610.1	572.8
52.5°	983.0	849.2	658.4	540.6	506.8
55°	911.6	772.5	579.7	472.8	438.9
57.5°	838.6	695.8	510.3	410.4	381.8
60°	763.6	620.9	437.0	346.2	317.6
62.5°	690.5	547.8	374.6	289.1	274.8
65°	615.5	471.0	310.4	249.9	244.4
67.5°	544.2	399.6	249.9	219.4	214.1
70°	469.3	330.1	206.9	189.1	181.9
72.5°	397.9	265.8	173.1	158.8	155.2
75°	328.3	203.3	142.7	130.2	128.5
77.5°	258.7	144.4	112.5	105.2	101.6
80°	194.4	103.5	85.6	78.5	78.5
82.5°	135.6	69.6	58.9	55.2	55.2
85°	76.7	39.2	33.9	33.9	33.9
87.5°	28.6	14.2	14.2	12.5	12.5
90°	2.2	26.2	71.4	67.0	69.2
92.5°	45.1	61.2	63.3	65.4	65.4
95°	106.3	126.6	130.2	130.2	126.6
97.5°	176.9	195.8	203.8	203.8	203.8
100°	258.3	275.0	280.9	280.9	278.7
102.5°	344.2	356.6	364.5	366.7	364.5
105°	438.1	443.9	448.3	451.9	451.9
107.5°	531.2	540.0	540.0	541.4	531.2
110°	621.4	633.1	633.1	633.1	627.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	718.9	731.3	729.1	723.3	718.9
115°	815.0	826.6	823.0	820.8	815.0
117.5°	910.3	926.3	916.1	910.3	904.5
120°	1006.4	1022.4	1006.4	1006.4	999.8
122.5°	1093.7	1114.1	1103.9	1098.1	1093.7
125°	1185.3	1203.6	1197.7	1191.2	1189.1
127.5°	1274.9	1297.4	1289.4	1280.7	1274.9
130°	1358.6	1384.7	1381.1	1376.8	1368.8
132.5°	1452.5	1472.8	1474.3	1464.1	1458.3
135°	1533.2	1555.8	1560.2	1558.0	1552.2
137.5°	1623.4	1641.6	1645.3	1643.8	1635.1
140°	1702.8	1720.9	1731.1	1731.1	1723.1
142.5°	1784.3	1802.5	1808.3	1810.5	1802.5
145°	1861.4	1875.9	1887.6	1889.8	1881.8
147.5°	1930.5	1948.7	1957.4	1961.1	1953.1
150°	2001.9	2014.2	2022.2	2028.8	2022.2
152.5°	2065.1	2077.5	2087.7	2095.7	2087.7
155°	2128.5	2134.3	2140.9	2151.0	2144.5
157.5°	2183.0	2187.4	2191.1	2205.6	2195.4
160°	2231.8	2236.2	2238.4	2250.7	2242.0
162.5°	2276.9	2276.9	2279.1	2292.9	2282.7
165°	2315.5	2313.3	2313.3	2327.9	2317.6
167.5°	2350.4	2343.9	2343.9	2358.4	2348.2
170°	2376.6	2370.8	2368.6	2383.2	2370.8
172.5°	2394.8	2389.0	2386.8	2401.3	2389.0
175°	2409.3	2403.5	2399.1	2413.7	2401.3
177.5°	2417.3	2411.5	2407.1	2419.5	2407.1
180°	2413.7	2413.7	2413.7	2413.7	2413.7



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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	6.74	7.47	7.80	8.54	9.98	2.70	3.43	3.76	4.50	5.94
	3H	8.41	9.07	9.48	10.14	11.60	3.88	4.54	4.95	5.61	7.07
	4H	9.02	9.65	10.10	10.72	12.18	4.33	4.95	5.41	6.02	7.49
	6H	9.44	10.02	10.53	11.09	12.57	4.64	5.22	5.74	6.29	7.77
	8H	9.57	10.11	10.66	11.21	12.68	4.73	5.28	5.83	6.37	7.84
	12H	9.63	10.15	10.73	11.23	12.73	4.77	5.29	5.87	6.38	7.87
4H	2H	6.74	7.37	7.83	8.44	9.91	3.28	3.91	4.37	4.98	6.45
	3H	8.57	9.09	9.67	10.19	11.67	4.63	5.15	5.72	6.25	7.72
	4H	9.26	9.74	10.36	10.83	12.33	5.17	5.65	6.27	6.74	8.24
	6H	9.78	10.19	10.89	11.30	12.79	5.59	6.00	6.70	7.11	8.60
	8H	9.95	10.34	11.06	11.44	12.95	5.72	6.10	6.83	7.20	8.71
	12H	10.05	10.39	11.17	11.51	13.02	5.78	6.12	6.90	7.24	8.75
8H	4H	9.22	9.61	10.33	10.71	12.22	5.45	5.83	6.56	6.94	8.44
	6H	9.79	10.11	10.92	11.25	12.76	5.97	6.28	7.10	7.43	8.93
	8H	10.01	10.29	11.15	11.42	12.94	6.16	6.43	7.30	7.56	9.09
	12H	10.15	10.39	11.29	11.52	13.08	6.28	6.52	7.42	7.64	9.20
12H	4H	9.17	9.52	10.30	10.63	12.15	5.45	5.80	6.58	6.91	8.43
	6H	9.77	10.04	10.90	11.17	12.70	6.02	6.29	7.15	7.42	8.95
	8H	9.99	10.23	11.13	11.35	12.92	6.23	6.47	7.37	7.59	9.15