

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: P907796

Luminaire Tested: DFN2DIP-4P4F0-050D070US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907796
REPORT IS A COMBINATION OF REPORTS P899132 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-050D070US840-RLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

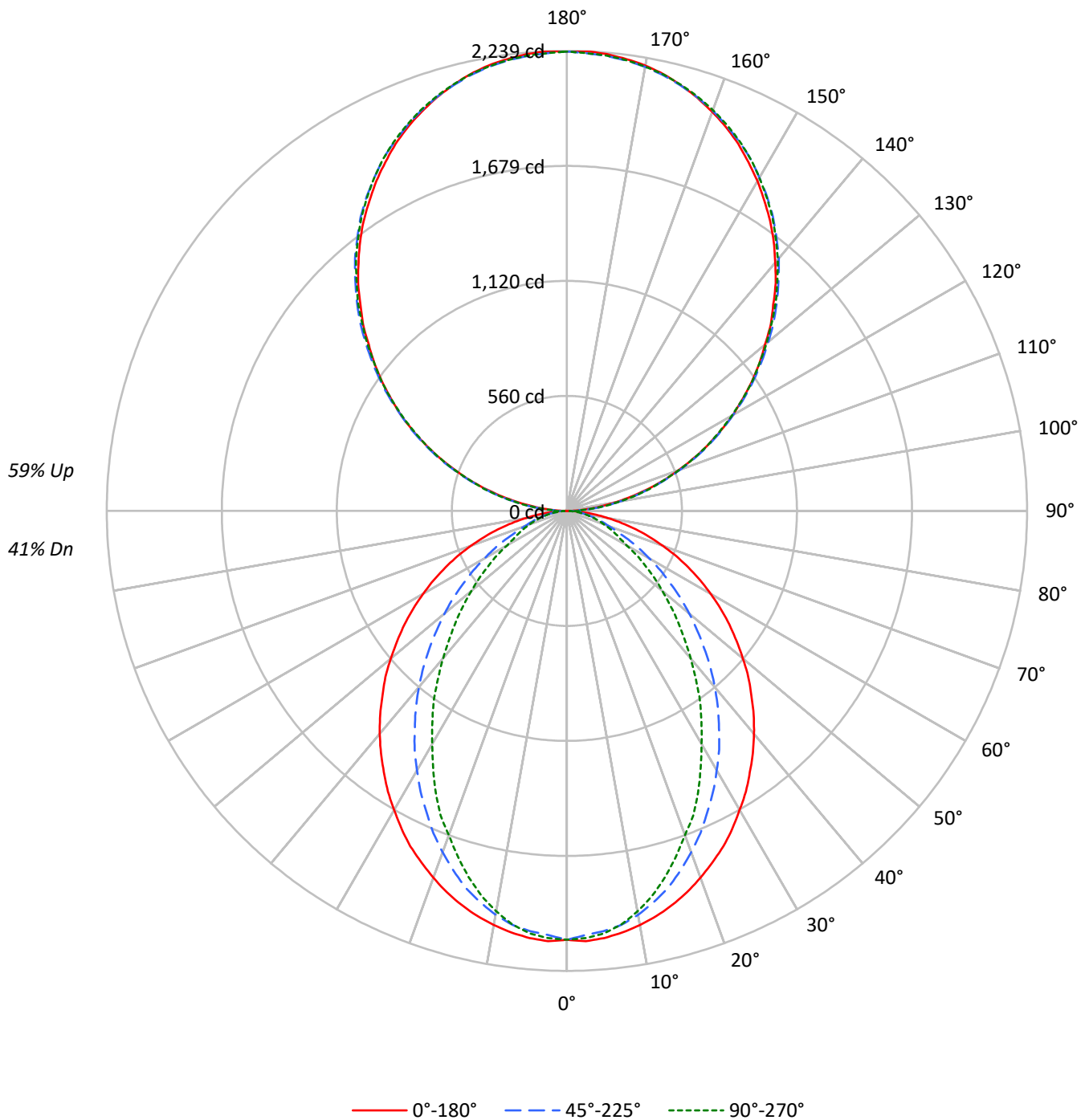
Lumens per Lamp: N/A
Luminaire Lumens: 10548.1 lumens
Efficiency: N/A
Efficacy: 94.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 111.2
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

TEST NUMBER: P907796

CATALOG NUMBER: DFN2DIP-4P4F0-050D070US840-RLLFLL

Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-4P4F0-050D070US840-RLLFLL

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	96	96	96	96	78	78	78	62	62	62	48	48	48
1	96	92	88	85	87	84	81	78	69	67	65	55	54	53	43	42	41
2	88	81	75	70	80	74	69	65	61	57	54	49	47	44	38	36	35
3	80	71	64	59	73	65	59	54	54	50	46	44	41	38	34	32	30
4	74	63	56	50	67	58	52	46	48	43	40	39	36	33	31	28	26
5	68	57	49	43	62	52	45	40	43	38	34	35	32	29	28	25	23
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	25	23	21
7	58	46	38	33	53	42	36	31	36	30	27	29	25	23	23	21	19
8	54	42	34	29	49	39	32	27	32	27	24	27	23	20	21	19	17
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	17	15
10	47	35	28	23	43	32	26	22	27	23	19	23	19	17	18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1354	1354	1354
5°	1356	1333	1341
10°	1343	1307	1298
15°	1324	1264	1231
20°	1300	1205	1149
25°	1275	1139	1069
30°	1242	1071	968
35°	1209	997	879
40°	1175	921	777
45°	1137	837	685
50°	1096	752	595
55°	1054	661	508
60°	1006	566	418
65°	950	469	377
70°	883	379	342
75°	798	335	312
80°	675	283	273
85°	472	191	209

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1691 cd/sqm

TEST NUMBER: P907796

CATALOG NUMBER: DFN2DIP-4P4F0-050D070US840-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.6	1.9
10°-20°	536.9	5.1
20°-30°	753.8	7.1
30°-40°	821.7	7.8
40°-50°	755.2	7.2
50°-60°	593.1	5.6
60°-70°	386.1	3.7
70°-80°	198.7	1.9
80°-90°	57.1	0.5
90°-100°	138.3	1.3
100°-110°	439.6	4.2
110°-120°	752.2	7.1
120°-130°	989.3	9.4
130°-140°	1110.5	10.5
140°-150°	1088.9	10.3
150°-160°	913.5	8.7
160°-170°	605.8	5.7
170°-180°	211.7	2.0
0°-30°	1486.3	14.1
0°-40°	2308.0	21.9
0°-60°	3656.4	34.7
0°-90°	4298.3	40.7
90°-120°	1330.1	12.6
90°-150°	4518.8	42.8
90°-180°	6250.0	59.3
0°-180°	10548.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2087	2087	2087	2087	2087	
5°	2087	2078	2053	2070	2064	198
15°	1985	1964	1900	1864	1845	559
25°	1802	1741	1617	1539	1511	829
35°	1552	1456	1290	1171	1129	972
45°	1269	1143	944	810	765	980
55°	965	818	614	500	465	862
65°	652	499	329	264	259	646
75°	348	215	151	138	136	368
85°	81	42	36	36	36	93
90°	2	24	66	62	64	10
95°	98	117	121	121	117	109
105°	406	411	415	419	419	428
115°	755	766	762	760	755	747
125°	1098	1115	1109	1103	1101	981
135°	1420	1441	1445	1443	1438	1098
145°	1724	1738	1748	1750	1743	1077
155°	1972	1977	1983	1992	1986	907
165°	2145	2143	2143	2156	2147	605
175°	2232	2226	2222	2236	2224	212
180°	2236	2236	2236	2236	2236	

TEST NUMBER: P907796

CATALOG NUMBER: DFN2DIP-4P4F0-050D070US840-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2086.9	2086.9	2086.9	2086.9	2086.9
2.5°	2096.3	2086.9	2066.1	2085.1	2081.2
5°	2086.9	2077.5	2052.9	2069.8	2064.3
7.5°	2069.8	2058.6	2032.2	2039.6	2030.1
10°	2047.2	2034.0	1996.3	1990.5	1979.2
12.5°	2018.9	2002.0	1950.9	1939.6	1918.7
15°	1984.9	1964.1	1900.0	1864.1	1845.2
17.5°	1945.2	1915.0	1835.6	1794.1	1763.8
20°	1900.0	1862.1	1767.7	1720.6	1678.9
22.5°	1850.9	1807.4	1697.8	1633.7	1605.4
25°	1801.7	1741.2	1616.6	1539.2	1510.8
27.5°	1743.2	1678.9	1541.1	1452.3	1408.9
30°	1680.9	1609.0	1457.9	1361.7	1310.6
32.5°	1620.4	1533.5	1378.8	1265.4	1218.1
35°	1552.5	1456.1	1290.0	1170.9	1129.3
37.5°	1486.3	1382.4	1206.9	1076.4	1029.4
40°	1416.4	1303.2	1119.8	985.8	936.8
42.5°	1344.7	1223.9	1033.1	893.2	846.2
45°	1269.2	1142.6	944.3	810.1	764.8
47.5°	1197.4	1063.4	859.4	725.2	683.7
50°	1118.1	984.0	776.3	645.8	606.3
52.5°	1040.6	898.9	696.9	572.3	536.4
55°	965.0	817.7	613.7	500.5	464.6
57.5°	887.7	736.6	540.2	434.4	404.1
60°	808.3	657.2	462.6	366.5	336.2
62.5°	730.9	579.9	396.6	306.0	290.9
65°	651.6	498.6	328.6	264.5	258.7
67.5°	576.0	423.0	264.5	232.3	226.6
70°	496.8	349.4	219.0	200.2	192.6
72.5°	421.2	281.3	183.2	168.1	164.3
75°	347.5	215.2	151.1	137.8	136.0
77.5°	273.9	152.9	119.1	111.4	107.6
80°	205.8	109.6	90.6	83.1	83.1
82.5°	143.5	73.7	62.3	58.5	58.5
85°	81.2	41.5	35.9	35.9	35.9
87.5°	30.3	15.0	15.0	13.2	13.2
90°	2.0	24.2	66.0	62.0	64.0
92.5°	41.8	56.7	58.7	60.7	60.7
95°	98.4	117.2	120.7	120.7	117.2
97.5°	163.8	181.3	188.7	188.7	188.7
100°	239.2	254.8	260.1	260.1	258.1
102.5°	318.8	330.2	337.7	339.7	337.7
105°	405.8	411.1	415.2	418.6	418.6
107.5°	492.0	500.1	500.1	501.5	492.0
110°	575.6	586.4	586.4	586.4	581.0

TEST NUMBER: P907796

CATALOG NUMBER: DFN2DIP-4P4F0-050D070US840-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	665.9	677.4	675.4	669.9	665.9
115°	754.9	765.7	762.3	760.3	754.9
117.5°	843.1	858.0	848.6	843.1	837.8
120°	932.1	947.0	932.1	932.1	926.0
122.5°	1013.0	1031.9	1022.5	1017.0	1013.0
125°	1097.9	1114.8	1109.4	1103.4	1101.4
127.5°	1180.8	1201.7	1194.4	1186.3	1180.8
130°	1258.4	1282.6	1279.3	1275.3	1267.8
132.5°	1345.3	1364.2	1365.5	1356.1	1350.7
135°	1420.2	1441.0	1445.1	1443.0	1437.6
137.5°	1503.7	1520.6	1523.9	1522.6	1514.5
140°	1577.2	1594.1	1603.5	1603.5	1596.1
142.5°	1652.6	1669.5	1674.9	1676.9	1669.5
145°	1724.1	1737.6	1748.4	1750.4	1743.0
147.5°	1788.2	1805.0	1813.1	1816.4	1809.1
150°	1854.2	1865.6	1873.1	1879.2	1873.1
152.5°	1912.8	1924.3	1933.7	1941.2	1933.7
155°	1971.5	1976.8	1983.0	1992.4	1986.3
157.5°	2022.1	2026.1	2029.4	2043.0	2033.5
160°	2067.2	2071.2	2073.3	2084.7	2076.6
162.5°	2109.0	2109.0	2111.0	2123.7	2114.4
165°	2144.7	2142.6	2142.6	2156.2	2146.7
167.5°	2177.1	2171.0	2171.0	2184.4	2175.0
170°	2201.3	2196.0	2193.9	2207.4	2196.0
172.5°	2218.2	2212.7	2210.7	2224.2	2212.7
175°	2231.6	2226.2	2222.2	2235.6	2224.2
177.5°	2239.1	2233.6	2229.6	2241.1	2229.6
180°	2235.6	2235.6	2235.6	2235.6	2235.6

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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	7.29	8.05	8.33	9.09	10.49	3.25	4.01	4.29	5.05	6.45
	3H	8.97	9.64	10.01	10.69	12.11	4.43	5.11	5.48	6.16	7.58
	4H	9.57	10.22	10.63	11.27	12.70	4.88	5.52	5.94	6.58	8.00
	6H	10.00	10.59	11.07	11.64	13.08	5.20	5.79	6.27	6.85	8.29
	8H	10.12	10.69	11.20	11.76	13.19	5.29	5.85	6.36	6.92	8.36
	12H	10.19	10.72	11.27	11.79	13.24	5.33	5.87	6.41	6.93	8.39
4H	2H	7.30	7.94	8.36	8.99	10.42	3.84	4.48	4.90	5.53	6.96
	3H	9.13	9.66	10.20	10.74	12.18	5.18	5.72	6.26	6.80	8.24
	4H	9.82	10.31	10.90	11.38	12.84	5.73	6.22	6.81	7.29	8.75
	6H	10.34	10.76	11.42	11.85	13.31	6.15	6.57	7.24	7.66	9.12
	8H	10.51	10.91	11.60	11.99	13.46	6.28	6.67	7.36	7.75	9.22
	12H	10.61	10.96	11.71	12.06	13.54	6.34	6.69	7.44	7.79	9.27
8H	4H	9.78	10.18	10.87	11.26	12.73	6.01	6.40	7.10	7.49	8.96
	6H	10.35	10.68	11.46	11.80	13.27	6.53	6.85	7.64	7.98	9.45
	8H	10.57	10.86	11.69	11.97	13.45	6.72	7.00	7.84	8.11	9.60
	12H	10.71	10.96	11.83	12.07	13.59	6.84	7.09	7.96	8.19	9.72
12H	4H	9.73	10.09	10.84	11.19	12.66	6.01	6.37	7.12	7.47	8.94
	6H	10.33	10.61	11.45	11.72	13.21	6.58	6.86	7.69	7.97	9.46
	8H	10.55	10.80	11.67	11.90	13.43	6.79	7.04	7.91	8.14	9.67

END OF REPORT