

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: P907746

Luminaire Tested: DFN2DIP-4P4F0-030D070US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907746
REPORT IS A COMBINATION OF REPORTS P899127 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-030D070US840-FLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

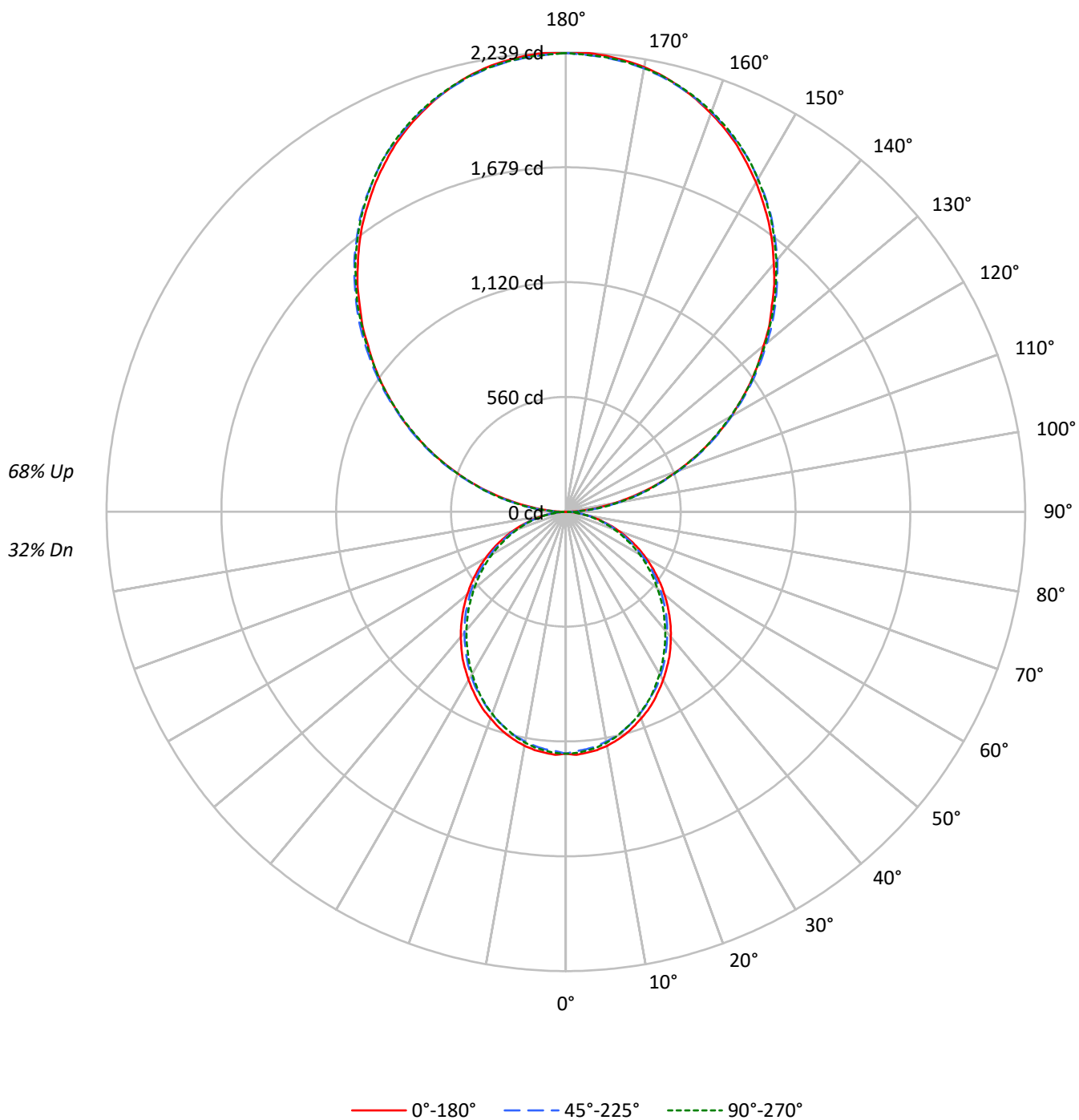
Lumens per Lamp: N/A
Luminaire Lumens: 9255.5 lumens
Efficiency: N/A
Efficacy: 104.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 88.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P907746

CATALOG NUMBER: DFN2DIP-4P4F0-030D070US840-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P907746

CATALOG NUMBER: DFN2DIP-4P4F0-030D070US840-FLLFLL

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	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40
1	94	90	86	82	84	81	78	75	64	62	60	49	48	47	35	34	34
2	85	78	72	67	77	71	66	61	56	53	50	43	41	39	31	30	28
3	78	69	62	56	70	62	56	51	50	45	42	38	35	33	28	26	24
4	71	61	53	47	64	55	48	43	44	39	36	34	31	28	25	23	21
5	65	54	46	40	59	49	42	37	39	34	31	30	27	24	22	20	18
6	60	48	40	35	54	44	37	32	35	30	27	27	24	21	20	18	16
7	55	43	36	30	50	40	33	28	32	27	23	25	21	19	18	16	14
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	14	13
9	48	36	29	24	43	33	26	22	27	22	18	21	17	15	15	13	11
10	44	33	26	21	40	30	24	20	24	20	16	19	16	13	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	765	765	765
5°	766	754	759
10°	760	744	750
15°	749	732	734
20°	734	716	717
25°	719	695	699
30°	700	677	675
35°	682	655	649
40°	660	632	626
45°	639	610	601
50°	615	587	572
55°	590	559	546
60°	561	527	516
65°	531	494	481
70°	491	454	443
75°	437	405	409
80°	372	343	342
85°	270	236	231

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1691 cd/sqm

TEST NUMBER: P907746

CATALOG NUMBER: DFN2DIP-4P4F0-030D070US840-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.0	1.2
10°-20°	312.2	3.4
20°-30°	458.8	5.0
30°-40°	532.8	5.8
40°-50°	532.2	5.7
50°-60°	464.1	5.0
60°-70°	343.1	3.7
70°-80°	194.1	2.1
80°-90°	57.6	0.6
90°-100°	138.3	1.5
100°-110°	439.6	4.7
110°-120°	752.2	8.1
120°-130°	989.3	10.7
130°-140°	1110.5	12.0
140°-150°	1088.9	11.8
150°-160°	913.5	9.9
160°-170°	605.8	6.5
170°-180°	211.7	2.3
0°-30°	881.9	9.5
0°-40°	1414.7	15.3
0°-60°	2411.0	26.0
0°-90°	3005.7	32.5
90°-120°	1330.1	14.4
90°-150°	4518.8	48.8
90°-180°	6250.0	67.5
0°-180°	9255.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1179	1179	1179	1179	1179	
5°	1179	1174	1162	1171	1169	112
15°	1122	1116	1101	1105	1100	316
25°	1016	1007	987	990	987	467
35°	876	865	847	840	834	547
45°	713	705	688	676	671	550
55°	540	533	519	506	500	482
65°	364	357	346	336	330	360
75°	190	188	182	176	178	203
85°	46	45	44	41	40	52
90°	2	24	66	62	64	9
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: P907746

CATALOG NUMBER: DFN2DIP-4P4F0-030D070US840-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1178.8	1178.8	1178.8	1178.8	1178.8
2.5°	1185.7	1180.0	1167.5	1178.8	1176.7
5°	1178.8	1174.4	1161.9	1170.9	1168.7
7.5°	1170.9	1164.2	1151.7	1160.8	1158.5
10°	1158.5	1150.5	1137.0	1146.0	1142.7
12.5°	1141.5	1134.7	1121.2	1126.7	1124.5
15°	1122.2	1115.5	1100.7	1105.2	1099.5
17.5°	1098.3	1091.7	1076.8	1082.5	1076.8
20°	1072.3	1065.5	1049.7	1053.0	1048.5
22.5°	1046.3	1036.1	1021.3	1021.3	1019.0
25°	1015.6	1006.6	987.3	989.6	987.3
27.5°	981.6	973.6	959.0	955.6	950.0
30°	947.7	938.6	921.6	918.2	913.6
32.5°	911.4	904.6	886.5	879.6	875.0
35°	876.3	864.9	846.8	839.9	834.2
37.5°	836.6	826.4	808.2	800.2	794.6
40°	795.8	786.7	768.5	758.4	753.9
42.5°	756.1	747.0	728.9	717.5	710.7
45°	713.1	705.1	688.0	675.6	671.1
47.5°	671.1	663.2	645.0	632.5	625.7
50°	626.8	621.2	605.3	589.5	583.8
52.5°	583.8	575.8	561.2	548.7	540.7
55°	539.7	532.8	519.2	505.6	500.0
57.5°	495.3	489.7	474.9	461.3	456.8
60°	451.1	446.7	430.8	418.3	415.0
62.5°	408.1	400.1	388.8	377.5	372.9
65°	364.0	357.1	345.8	335.6	329.9
67.5°	318.6	312.9	302.7	294.8	290.2
70°	276.6	272.1	261.9	253.9	249.4
72.5°	233.6	228.9	223.3	215.4	212.1
75°	190.4	188.2	182.5	175.7	178.0
77.5°	151.9	147.3	145.0	141.7	138.4
80°	113.4	112.2	109.9	106.5	104.3
82.5°	77.1	77.1	76.0	71.4	71.4
85°	46.5	45.3	44.2	40.8	39.7
87.5°	20.4	18.2	15.9	12.5	11.3
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: P907746

CATALOG NUMBER: DFN2DIP-4P4F0-030D070US840-FLLFLL

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

TEST NUMBER: P907746

CATALOG NUMBER: DFN2DIP-4P4F0-030D070US840-FLFL

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	4.47	5.19	5.56	6.28	7.79	4.02	4.75	5.12	5.84	7.34
	3H	6.13	6.77	7.23	7.87	9.39	5.63	6.28	6.74	7.38	8.90
	4H	6.71	7.32	7.82	8.43	9.95	6.22	6.83	7.33	7.93	9.46
	6H	7.11	7.67	8.23	8.78	10.31	6.61	7.17	7.73	8.28	9.81
	8H	7.21	7.75	8.34	8.87	10.40	6.71	7.25	7.83	8.37	9.90
	12H	7.26	7.77	8.39	8.88	10.43	6.75	7.26	7.88	8.37	9.92
4H	2H	4.91	5.53	6.03	6.63	8.16	4.56	5.17	5.68	6.28	7.80
	3H	6.77	7.29	7.90	8.42	9.95	6.37	6.88	7.49	8.01	9.54
	4H	7.49	7.96	8.62	9.08	10.63	7.06	7.53	8.19	8.65	10.21
	6H	8.00	8.40	9.14	9.54	11.09	7.57	7.97	8.70	9.11	10.66
	8H	8.15	8.53	9.29	9.66	11.22	7.71	8.09	8.85	9.22	10.79
	12H	8.22	8.56	9.37	9.70	11.27	7.77	8.11	8.92	9.26	10.82
8H	4H	7.67	8.05	8.81	9.18	10.75	7.30	7.67	8.43	8.81	10.37
	6H	8.30	8.62	9.46	9.79	11.35	7.92	8.23	9.08	9.41	10.97
	8H	8.53	8.80	9.69	9.95	11.54	8.14	8.41	9.30	9.56	11.14
	12H	8.66	8.90	9.82	10.05	11.66	8.25	8.49	9.41	9.64	11.25
12H	4H	7.65	7.99	8.81	9.14	10.71	7.28	7.63	8.44	8.77	10.34
	6H	8.33	8.61	9.50	9.76	11.34	7.96	8.24	9.13	9.39	10.97
	8H	8.57	8.81	9.74	9.96	11.58	8.19	8.43	9.36	9.58	11.20

END OF REPORT