

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: P905054

Luminaire Tested: DFN2DIP-4P4F0-050D040US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905054
REPORT IS A COMBINATION OF REPORTS P899095 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-050D040US835-FLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

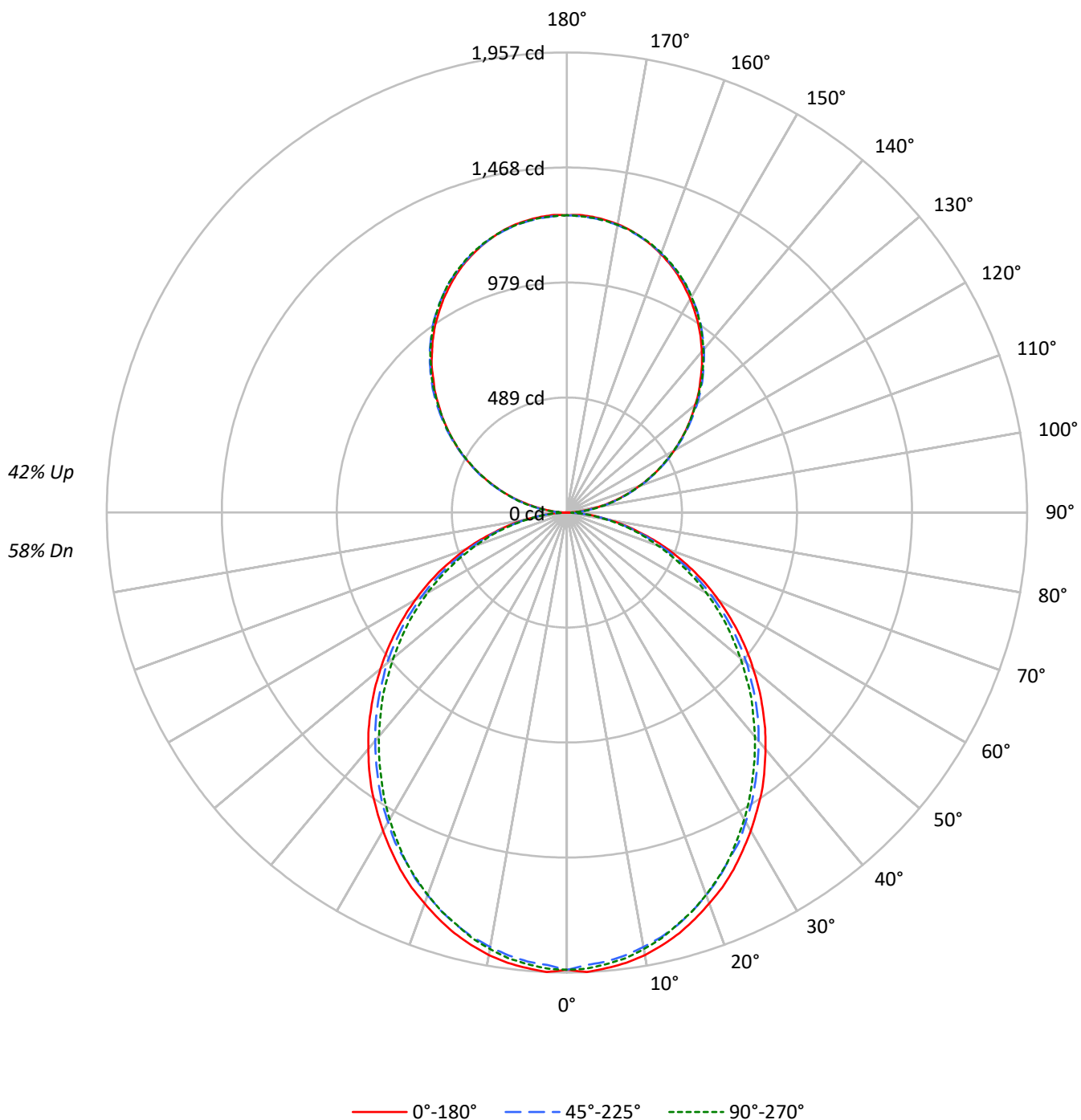
Lumens per Lamp: N/A
Luminaire Lumens: 8490.0 lumens
Efficiency: N/A
Efficacy: 104.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 80.9
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: P905054

CATALOG NUMBER: DFN2DIP-4P4F0-050D040US835-FLLFLL

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	109	109	109	109	102	102	102	102	88	88	88	75	75	75	64	64	64
1	100	95	91	88	93	89	86	82	77	75	72	66	65	63	56	55	54
2	91	83	77	72	84	78	72	68	68	64	60	58	55	52	50	47	45
3	83	73	66	60	77	69	62	57	60	55	50	52	48	44	44	41	39
4	76	65	57	51	70	61	54	48	53	47	43	46	42	38	39	36	33
5	70	58	50	43	65	54	47	41	48	42	37	41	37	33	35	32	29
6	64	52	44	38	60	49	41	36	43	37	32	37	33	29	32	29	26
7	59	47	39	33	55	44	37	32	39	33	29	34	29	26	29	26	23
8	55	43	35	29	51	40	33	28	36	30	26	31	26	23	27	23	20
9	51	39	31	26	48	37	30	25	33	27	23	29	24	21	25	21	18
10	48	36	28	24	45	34	27	23	30	25	21	27	22	19	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1262	1262	1262
5°	1264	1245	1253
10°	1254	1229	1237
15°	1236	1209	1211
20°	1211	1181	1184
25°	1186	1148	1153
30°	1155	1117	1114
35°	1126	1081	1072
40°	1090	1044	1032
45°	1054	1007	992
50°	1014	968	945
55°	973	923	902
60°	927	870	852
65°	876	815	794
70°	811	748	732
75°	721	668	675
80°	614	566	564
85°	445	389	381

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1054 cd/sqm

TEST NUMBER: P905054

CATALOG NUMBER: DFN2DIP-4P4F0-050D040US835-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	183.1	2.2
10°-20°	515.2	6.1
20°-30°	757.2	8.9
30°-40°	879.4	10.4
40°-50°	878.3	10.3
50°-60°	765.8	9.0
60°-70°	566.1	6.7
70°-80°	320.3	3.8
80°-90°	88.1	1.0
90°-100°	78.3	0.9
100°-110°	248.7	2.9
110°-120°	425.6	5.0
120°-130°	559.8	6.6
130°-140°	628.3	7.4
140°-150°	616.2	7.3
150°-160°	516.9	6.1
160°-170°	342.8	4.0
170°-180°	119.8	1.4
0°-30°	1455.5	17.1
0°-40°	2334.9	27.5
0°-60°	3979.0	46.9
0°-90°	4953.6	58.3
90°-120°	752.7	8.9
90°-150°	2556.9	30.1
90°-180°	3536.0	41.6
0°-180°	8490.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1946	1946	1946	1946	1946	
5°	1946	1938	1918	1932	1929	185
15°	1852	1841	1816	1824	1815	522
25°	1676	1661	1630	1633	1630	771
35°	1446	1428	1398	1386	1377	903
45°	1177	1164	1136	1115	1108	908
55°	891	879	857	834	825	796
65°	601	589	571	554	544	594
75°	314	311	301	290	294	335
85°	77	75	73	67	66	85
90°	1	14	37	35	36	8
95°	56	66	68	68	66	62
105°	230	233	235	237	237	242
115°	427	433	431	430	427	422
125°	621	631	628	624	623	555
135°	804	815	818	816	814	621
145°	976	983	989	990	986	610
155°	1116	1119	1122	1127	1124	513
165°	1214	1212	1212	1220	1215	342
175°	1263	1260	1257	1265	1259	120
180°	1265	1265	1265	1265	1265	

TEST NUMBER: P905054

CATALOG NUMBER: DFN2DIP-4P4F0-050D040US835-FLLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1945.5	1945.5	1945.5	1945.5	1945.5
2.5°	1956.8	1947.5	1926.9	1945.5	1942.0
5°	1945.5	1938.2	1917.5	1932.4	1928.9
7.5°	1932.4	1921.3	1900.7	1915.8	1912.0
10°	1912.0	1898.9	1876.5	1891.3	1885.8
12.5°	1883.8	1872.7	1850.3	1859.6	1855.8
15°	1852.0	1840.9	1816.5	1824.1	1814.7
17.5°	1812.7	1801.6	1777.2	1786.5	1777.2
20°	1769.7	1758.6	1732.4	1737.9	1730.6
22.5°	1726.8	1709.9	1685.5	1685.5	1681.7
25°	1676.2	1661.3	1629.5	1633.1	1629.5
27.5°	1620.0	1606.9	1582.7	1577.1	1567.8
30°	1564.0	1549.0	1521.0	1515.4	1507.9
32.5°	1504.1	1493.0	1463.0	1451.7	1444.2
35°	1446.1	1427.5	1397.5	1386.2	1376.9
37.5°	1380.6	1363.8	1333.8	1320.7	1311.4
40°	1313.4	1298.3	1268.3	1251.6	1244.1
42.5°	1247.9	1232.8	1203.0	1184.1	1173.0
45°	1176.8	1163.7	1135.5	1115.1	1107.5
47.5°	1107.5	1094.4	1064.5	1043.8	1032.7
50°	1034.5	1025.2	999.0	972.8	963.4
52.5°	963.4	950.3	926.1	905.5	892.4
55°	890.6	879.3	856.8	834.4	825.1
57.5°	817.5	808.2	783.8	761.4	753.8
60°	744.5	737.2	711.0	690.3	684.8
62.5°	673.5	660.4	641.7	623.0	615.5
65°	600.6	589.3	570.6	553.8	544.4
67.5°	525.8	516.3	499.6	486.5	478.9
70°	456.5	449.0	432.1	419.0	411.7
72.5°	385.5	377.9	368.6	355.5	349.9
75°	314.2	310.6	301.1	290.0	293.8
77.5°	250.7	243.1	239.4	233.8	228.3
80°	187.2	185.2	181.4	175.9	172.1
82.5°	127.2	127.2	125.4	117.9	117.9
85°	76.6	74.8	73.0	67.3	65.5
87.5°	33.7	30.0	26.2	20.6	18.7
90°	1.1	13.7	37.4	35.1	36.2
92.5°	23.6	32.0	33.2	34.3	34.3
95°	55.7	66.4	68.3	68.3	66.4
97.5°	92.7	102.6	106.8	106.8	106.8
100°	135.4	144.2	147.2	147.2	146.1
102.5°	180.4	186.9	191.1	192.2	191.1
105°	229.6	232.6	234.9	236.8	236.8
107.5°	278.4	283.0	283.0	283.7	278.4
110°	325.7	331.8	331.8	331.8	328.8

TEST NUMBER: P905054

CATALOG NUMBER: DFN2DIP-4P4F0-050D040US835-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	376.8	383.3	382.1	379.1	376.8
115°	427.1	433.3	431.3	430.2	427.1
117.5°	477.1	485.5	480.2	477.1	474.1
120°	527.5	535.8	527.5	527.5	524.0
122.5°	573.2	583.9	578.6	575.5	573.2
125°	621.3	630.8	627.8	624.3	623.2
127.5°	668.2	680.0	675.8	671.2	668.2
130°	712.0	725.8	723.9	721.6	717.4
132.5°	761.2	771.9	772.7	767.3	764.3
135°	803.6	815.4	817.7	816.5	813.5
137.5°	850.9	860.4	862.3	861.5	857.0
140°	892.4	902.0	907.3	907.3	903.1
142.5°	935.2	944.7	947.7	948.9	944.7
145°	975.6	983.2	989.3	990.5	986.3
147.5°	1011.8	1021.3	1025.9	1027.8	1023.6
150°	1049.2	1055.7	1059.9	1063.3	1059.9
152.5°	1082.4	1088.8	1094.2	1098.4	1094.2
155°	1115.5	1118.6	1122.0	1127.4	1123.9
157.5°	1144.2	1146.4	1148.3	1156.0	1150.6
160°	1169.7	1172.0	1173.1	1179.6	1175.0
162.5°	1193.3	1193.3	1194.5	1201.7	1196.4
165°	1213.6	1212.4	1212.4	1220.0	1214.7
167.5°	1231.9	1228.4	1228.4	1236.1	1230.7
170°	1245.6	1242.5	1241.4	1249.0	1242.5
172.5°	1255.1	1252.1	1250.9	1258.6	1252.1
175°	1262.8	1259.7	1257.4	1265.0	1258.6
177.5°	1267.0	1263.9	1261.6	1268.1	1261.6
180°	1265.0	1265.0	1265.0	1265.0	1265.0

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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	8.84	9.78	9.72	10.68	11.83	8.39	9.33	9.27	10.24	11.38
	3H	10.51	11.35	11.40	12.26	13.44	10.02	10.86	10.91	11.77	12.95
	4H	11.10	11.90	12.01	12.82	14.00	10.61	11.41	11.52	12.33	13.51
	6H	11.51	12.25	12.43	13.17	14.37	11.01	11.75	11.93	12.67	13.87
	8H	11.62	12.32	12.55	13.26	14.46	11.12	11.82	12.05	12.76	13.96
	12H	11.67	12.34	12.61	13.28	14.50	11.16	11.83	12.10	12.77	13.99
4H	2H	9.31	10.11	10.22	11.02	12.21	8.95	9.75	9.87	10.67	11.85
	3H	11.19	11.85	12.11	12.80	14.00	10.78	11.45	11.70	12.39	13.59
	4H	11.91	12.52	12.84	13.46	14.68	11.48	12.09	12.42	13.04	14.26
	6H	12.43	12.96	13.38	13.93	15.15	12.00	12.53	12.95	13.49	14.72
	8H	12.59	13.08	13.54	14.04	15.28	12.15	12.64	13.10	13.60	14.84
	12H	12.67	13.11	13.64	14.09	15.33	12.22	12.66	13.19	13.64	14.88
8H	4H	12.11	12.60	13.06	13.56	14.80	11.74	12.23	12.69	13.19	14.42
	6H	12.75	13.16	13.73	14.16	15.40	12.37	12.78	13.35	13.78	15.01
	8H	12.98	13.34	13.97	14.33	15.58	12.59	12.95	13.57	13.94	15.19
	12H	13.12	13.43	14.11	14.42	15.72	12.71	13.02	13.70	14.01	15.31
12H	4H	12.10	12.55	13.07	13.52	14.77	11.73	12.18	12.71	13.16	14.40
	6H	12.78	13.14	13.77	14.14	15.39	12.41	12.77	13.40	13.76	15.02
	8H	13.03	13.35	14.02	14.34	15.64	12.66	12.97	13.65	13.96	15.26