

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: P902917

Luminaire Tested: DFN2DIP-PN2F0-050D040US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902917
REPORT IS A COMBINATION OF REPORTS P901007 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-050D040US830-FLLONL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

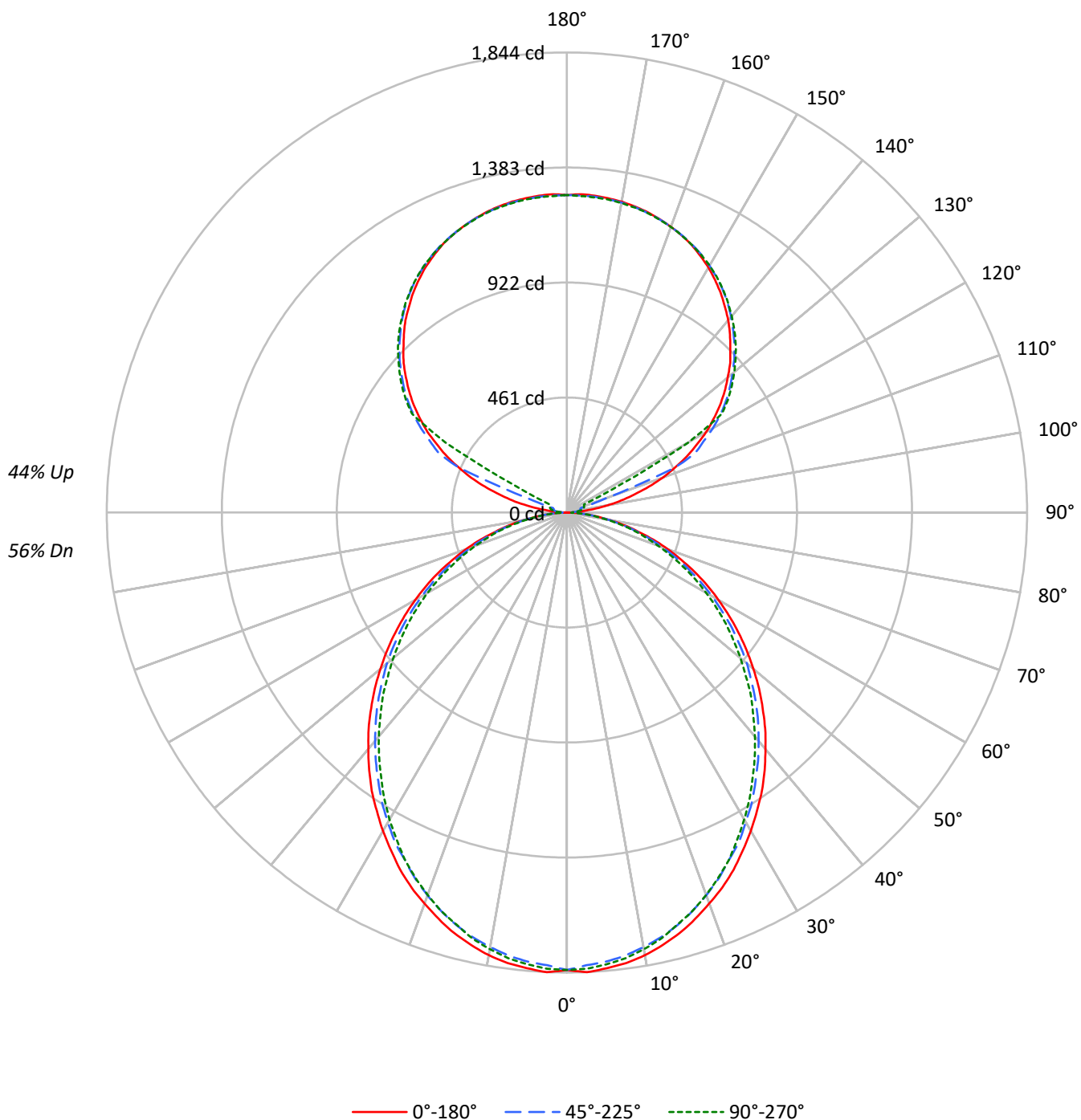
Lumens per Lamp: N/A
Luminaire Lumens: 8398.1 lumens
Efficiency: N/A
Efficacy: 102.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 82
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P902917

CATALOG NUMBER: DFN2DIP-PN2F0-050D040US830-FLLONL

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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61
1	99	95	91	87	92	88	85	82	76	73	71	65	63	61	54	53	52
2	90	83	76	71	84	77	72	67	66	62	59	57	54	51	48	46	44
3	82	73	65	59	76	68	61	56	59	54	50	50	46	43	42	39	37
4	75	64	56	50	70	60	53	48	52	47	42	45	40	37	38	35	32
5	69	57	49	43	64	54	46	41	47	41	36	40	36	32	34	31	28
6	64	52	43	37	59	48	41	36	42	36	32	36	32	28	31	27	25
7	59	47	39	33	55	44	36	31	38	32	28	33	28	25	28	25	22
8	55	42	34	29	51	40	33	28	35	29	25	30	26	22	26	22	20
9	51	39	31	26	47	36	29	25	32	26	22	28	23	20	24	20	18
10	48	35	28	23	44	33	27	22	29	24	20	26	21	18	22	19	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3972	3972	3972
5°	3972	3908	3937
10°	3933	3847	3878
15°	3869	3775	3788
20°	3784	3679	3698
25°	3700	3565	3593
30°	3596	3459	3463
35°	3497	3335	3324
40°	3376	3209	3192
45°	3255	3083	3057
50°	3123	2950	2901
55°	2983	2796	2756
60°	2825	2615	2590
65°	2652	2426	2393
70°	2433	2196	2181
75°	2130	1920	1978
80°	1763	1568	1605
85°	1196	991	1005

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3255 cd/sqm

TEST NUMBER: P902917

CATALOG NUMBER: DFN2DIP-PN2F0-050D040US830-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.6	2.1
10°-20°	485.6	5.8
20°-30°	713.7	8.5
30°-40°	828.9	9.9
40°-50°	827.8	9.9
50°-60°	721.8	8.6
60°-70°	533.6	6.4
70°-80°	301.9	3.6
80°-90°	81.9	1.0
90°-100°	41.9	0.5
100°-110°	156.4	1.9
110°-120°	414.8	4.9
120°-130°	688.0	8.2
130°-140°	730.8	8.7
140°-150°	679.2	8.1
150°-160°	546.1	6.5
160°-170°	351.9	4.2
170°-180°	121.1	1.4
0°-30°	1371.9	16.3
0°-40°	2200.7	26.2
0°-60°	3750.4	44.7
0°-90°	4667.8	55.6
90°-120°	613.2	7.3
90°-150°	2711.2	32.3
90°-180°	3730.0	44.4
0°-180°	8398.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1834	1834	1834	1834	1834	
5°	1834	1827	1807	1821	1818	174
15°	1746	1735	1712	1719	1710	492
25°	1580	1566	1536	1539	1536	727
35°	1363	1346	1317	1307	1298	851
45°	1109	1097	1070	1051	1044	856
55°	839	829	808	786	778	750
65°	566	555	538	522	513	560
75°	296	293	284	273	277	316
85°	72	70	69	63	62	81
90°	1	11	18	23	25	8
95°	60	29	36	40	40	71
105°	280	308	56	66	70	299
115°	529	545	568	142	76	521
125°	748	760	778	784	787	668
135°	926	941	949	958	957	715
145°	1074	1074	1089	1096	1091	672
155°	1183	1175	1186	1191	1184	545
165°	1247	1241	1244	1250	1244	352
175°	1275	1269	1270	1277	1268	121
180°	1272	1272	1272	1272	1272	

TEST NUMBER: P902917

CATALOG NUMBER: DFN2DIP-PN2F0-050D040US830-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1833.7	1833.7	1833.7	1833.7	1833.7
2.5°	1844.4	1835.6	1816.2	1833.7	1830.4
5°	1833.7	1826.8	1807.3	1821.4	1818.1
7.5°	1821.4	1810.9	1791.5	1805.7	1802.1
10°	1802.1	1789.8	1768.7	1782.6	1777.4
12.5°	1775.6	1765.1	1744.0	1752.8	1749.2
15°	1745.6	1735.1	1712.1	1719.3	1710.4
17.5°	1708.5	1698.1	1675.1	1683.9	1675.1
20°	1668.0	1657.6	1632.9	1638.0	1631.2
22.5°	1627.6	1611.7	1588.7	1588.7	1585.1
25°	1579.9	1565.8	1535.9	1539.3	1535.9
27.5°	1526.9	1514.6	1491.8	1486.5	1477.7
30°	1474.1	1460.0	1433.6	1428.3	1421.3
32.5°	1417.7	1407.2	1378.9	1368.3	1361.2
35°	1363.0	1345.5	1317.2	1306.6	1297.8
37.5°	1301.3	1285.4	1257.2	1244.8	1236.0
40°	1237.9	1223.7	1195.4	1179.7	1172.6
42.5°	1176.2	1162.0	1133.9	1116.1	1105.6
45°	1109.2	1096.8	1070.3	1051.0	1043.9
47.5°	1043.9	1031.5	1003.3	983.8	973.4
50°	975.1	966.3	941.6	916.9	908.0
52.5°	908.0	895.7	872.9	853.5	841.1
55°	839.4	828.8	807.6	786.5	777.7
57.5°	770.5	761.8	738.8	717.7	710.5
60°	701.7	694.8	670.1	650.6	645.5
62.5°	634.8	622.5	604.8	587.2	580.1
65°	566.1	555.4	537.8	522.0	513.1
67.5°	495.6	486.6	470.9	458.5	451.4
70°	430.3	423.2	407.3	394.9	388.0
72.5°	363.4	356.2	347.4	335.1	329.8
75°	296.1	292.8	283.8	273.3	276.9
77.5°	236.3	229.1	225.6	220.4	215.2
80°	176.4	174.6	171.0	165.8	162.2
82.5°	119.9	119.9	118.2	111.1	111.1
85°	72.2	70.5	68.8	63.4	61.7
87.5°	31.8	28.3	24.7	19.4	17.6
90°	0.8	11.0	18.4	23.1	24.8
92.5°	23.1	19.3	22.1	23.9	24.8
95°	59.8	29.4	35.8	40.5	39.6
97.5°	107.7	32.2	46.9	49.8	50.6
100°	163.0	36.9	52.5	59.8	61.6
102.5°	223.7	222.0	54.3	64.4	67.2
105°	279.8	307.6	56.2	66.3	69.9
107.5°	345.3	368.3	58.1	68.1	71.8
110°	407.9	427.2	161.2	69.1	72.7

TEST NUMBER: P902917

CATALOG NUMBER: DFN2DIP-PN2F0-050D040US830-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	466.8	483.3	467.7	70.9	73.7
115°	529.3	545.0	568.1	141.8	75.6
117.5°	583.7	602.1	617.8	486.1	244.9
120°	644.5	658.3	674.9	686.0	561.7
122.5°	696.0	710.8	729.2	734.7	735.7
125°	748.5	760.5	778.0	784.5	787.2
127.5°	796.4	809.3	823.1	832.4	833.2
130°	841.5	856.3	866.3	876.5	875.6
132.5°	887.5	899.6	909.6	917.9	917.1
135°	926.2	941.0	949.2	958.5	956.7
137.5°	966.7	977.7	987.0	996.2	993.4
140°	1006.3	1013.7	1023.8	1032.1	1027.5
142.5°	1039.5	1045.9	1057.9	1065.2	1060.6
145°	1074.5	1073.6	1089.1	1095.6	1091.0
147.5°	1104.8	1102.0	1117.7	1122.3	1118.7
150°	1134.3	1127.8	1142.6	1148.1	1143.5
152.5°	1159.1	1151.8	1165.5	1171.1	1164.7
155°	1183.1	1174.9	1185.9	1191.4	1184.0
157.5°	1202.4	1195.0	1203.4	1209.8	1202.4
160°	1219.0	1213.4	1219.0	1224.5	1218.0
162.5°	1233.7	1228.2	1232.8	1239.3	1231.0
165°	1246.6	1241.1	1243.9	1250.3	1243.9
167.5°	1256.8	1251.1	1254.1	1260.5	1252.2
170°	1265.1	1259.5	1261.3	1267.8	1259.5
172.5°	1270.5	1265.1	1267.0	1273.4	1265.1
175°	1275.1	1268.7	1270.5	1277.0	1267.8
177.5°	1277.0	1270.5	1271.5	1278.0	1269.7
180°	1272.4	1272.4	1272.4	1272.4	1272.4

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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	12.45	13.36	13.36	14.29	15.48	12.01	12.92	12.92	13.85	15.04
	3H	14.09	14.91	15.01	15.85	17.06	13.61	14.43	14.53	15.37	16.58
	4H	14.67	15.44	15.60	16.39	17.61	14.19	14.96	15.12	15.90	17.13
	6H	15.06	15.77	16.00	16.72	17.95	14.57	15.28	15.51	16.23	17.47
	8H	15.15	15.83	16.11	16.80	18.03	14.67	15.35	15.62	16.31	17.55
	12H	15.20	15.84	16.15	16.80	18.06	14.70	15.35	15.66	16.31	17.57
4H	2H	12.91	13.68	13.84	14.62	15.84	12.56	13.33	13.50	14.27	15.49
	3H	14.75	15.40	15.70	16.37	17.61	14.35	15.00	15.30	15.97	17.21
	4H	15.45	16.04	16.41	17.01	18.27	15.04	15.63	16.00	16.60	17.86
	6H	15.95	16.46	16.92	17.45	18.71	15.53	16.04	16.50	17.03	18.29
	8H	16.09	16.57	17.07	17.55	18.83	15.67	16.15	16.64	17.13	18.40
	12H	16.16	16.59	17.15	17.59	18.87	15.72	16.15	16.72	17.15	18.43
8H	4H	15.64	16.12	16.62	17.10	18.38	15.27	15.75	16.25	16.73	18.01
	6H	16.25	16.65	17.25	17.67	18.94	15.88	16.27	16.88	17.30	18.57
	8H	16.46	16.81	17.47	17.82	19.11	16.08	16.43	17.09	17.44	18.73
	12H	16.58	16.89	17.59	17.89	19.23	16.18	16.49	17.20	17.50	18.83
12H	4H	15.63	16.06	16.62	17.06	18.34	15.27	15.70	16.26	16.70	17.98
	6H	16.28	16.63	17.29	17.64	18.93	15.91	16.26	16.92	17.28	18.57
	8H	16.51	16.81	17.52	17.82	19.16	16.14	16.44	17.15	17.45	18.79

END OF REPORT