

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: P908333

Luminaire Tested: DFN2DIP-PN2F0-030D040US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908333
REPORT IS A COMBINATION OF REPORTS P901003 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-030D040US840-FLLONL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

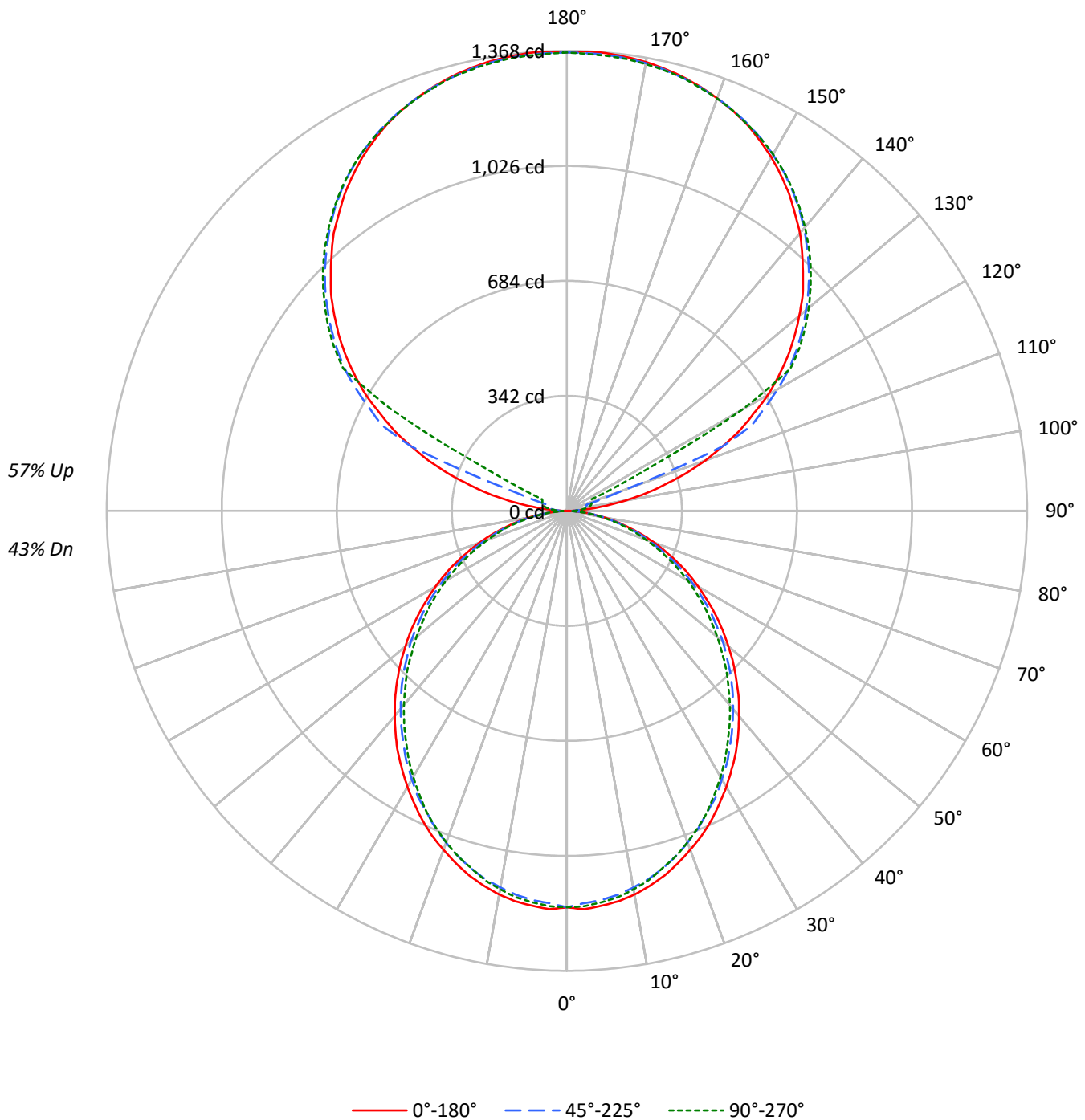
Lumens per Lamp: N/A
Luminaire Lumens: 6998.4 lumens
Efficiency: N/A
Efficacy: 119.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 58.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P908333

CATALOG NUMBER: DFN2DIP-PN2F0-030D040US840-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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	50	50	50
1	96	92	88	85	88	84	81	78	70	67	65	56	55	53	44	43	42
2	88	80	74	69	80	74	68	64	61	57	54	49	47	44	39	37	35
3	80	71	63	58	73	65	58	53	54	49	45	44	40	38	34	32	30
4	73	62	55	49	66	57	50	45	48	43	39	39	35	32	31	28	26
5	67	56	48	42	61	51	44	39	43	37	33	35	31	28	28	25	23
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	25	22	20
7	57	45	37	32	52	41	34	29	35	29	25	29	25	22	23	20	18
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	27	22	18	22	18	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2553	2553	2553
5°	2553	2512	2531
10°	2528	2473	2493
15°	2487	2427	2435
20°	2433	2365	2377
25°	2379	2292	2310
30°	2312	2223	2226
35°	2248	2144	2137
40°	2170	2063	2052
45°	2093	1982	1965
50°	2007	1896	1865
55°	1918	1798	1772
60°	1816	1681	1665
65°	1705	1560	1539
70°	1564	1412	1402
75°	1370	1235	1271
80°	1133	1008	1032
85°	770	637	647

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2093 cd/sqm

TEST NUMBER: P908333

CATALOG NUMBER: DFN2DIP-PN2F0-030D040US840-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.0	1.6
10°-20°	312.2	4.5
20°-30°	458.8	6.6
30°-40°	532.8	7.6
40°-50°	532.2	7.6
50°-60°	464.1	6.6
60°-70°	343.1	4.9
70°-80°	194.1	2.8
80°-90°	53.6	0.8
90°-100°	44.9	0.6
100°-110°	167.6	2.4
110°-120°	444.4	6.4
120°-130°	737.1	10.5
130°-140°	783.0	11.2
140°-150°	727.7	10.4
150°-160°	585.1	8.4
160°-170°	377.0	5.4
170°-180°	129.8	1.9
0°-30°	881.9	12.6
0°-40°	1414.7	20.2
0°-60°	2411.0	34.5
0°-90°	3001.7	42.9
90°-120°	656.9	9.4
90°-150°	2904.8	41.5
90°-180°	3997.0	57.1
0°-180°	6998.4	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°	1	12	20	25	27	6
95°	64	32	38	43	42	76
105°	300	330	60	71	75	320
115°	567	584	609	152	81	558
125°	802	815	834	840	843	715
135°	992	1008	1017	1027	1025	767
145°	1151	1150	1167	1174	1169	720
155°	1268	1259	1271	1276	1269	584
165°	1336	1330	1333	1340	1333	377
175°	1366	1359	1361	1368	1358	130
180°	1363	1363	1363	1363	1363	

TEST NUMBER: P908333

CATALOG NUMBER: DFN2DIP-PN2F0-030D040US840-FLLONL

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°	0.9	11.8	19.7	24.7	26.6
92.5°	24.7	20.7	23.6	25.7	26.6
95°	64.0	31.5	38.4	43.4	42.4
97.5°	115.4	34.5	50.3	53.3	54.2
100°	174.6	39.5	56.2	64.0	66.0
102.5°	239.6	237.8	58.2	69.0	72.0
105°	299.8	329.5	60.2	71.0	74.9
107.5°	369.9	394.6	62.2	73.0	77.0
110°	437.1	457.7	172.7	74.0	77.9

TEST NUMBER: P908333

CATALOG NUMBER: DFN2DIP-PN2F0-030D040US840-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	500.2	517.9	501.1	75.9	79.0
115°	567.1	583.9	608.6	151.9	81.0
117.5°	625.4	645.1	662.0	520.8	262.4
120°	690.5	705.3	723.1	735.0	601.8
122.5°	745.7	761.5	781.3	787.2	788.2
125°	801.9	814.9	833.5	840.5	843.4
127.5°	853.2	867.1	881.9	891.8	892.7
130°	901.6	917.5	928.2	939.1	938.2
132.5°	950.9	963.8	974.6	983.5	982.6
135°	992.4	1008.2	1017.0	1026.9	1025.0
137.5°	1035.7	1047.5	1057.5	1067.3	1064.4
140°	1078.1	1086.1	1096.9	1105.8	1100.9
142.5°	1113.8	1120.6	1133.5	1141.2	1136.4
145°	1151.2	1150.2	1166.9	1173.9	1168.9
147.5°	1183.7	1180.7	1197.5	1202.4	1198.6
150°	1215.3	1208.4	1224.3	1230.1	1225.2
152.5°	1241.9	1234.1	1248.8	1254.8	1247.9
155°	1267.6	1258.8	1270.6	1276.5	1268.6
157.5°	1288.3	1280.4	1289.4	1296.3	1288.3
160°	1306.1	1300.1	1306.1	1311.9	1305.0
162.5°	1321.8	1316.0	1320.9	1327.8	1318.9
165°	1335.6	1329.8	1332.7	1339.6	1332.7
167.5°	1346.6	1340.5	1343.6	1350.5	1341.6
170°	1355.4	1349.5	1351.4	1358.4	1349.5
172.5°	1361.3	1355.4	1357.5	1364.3	1355.4
175°	1366.1	1359.3	1361.3	1368.2	1358.4
177.5°	1368.2	1361.3	1362.3	1369.3	1360.4
180°	1363.3	1363.3	1363.3	1363.3	1363.3



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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	9.72	10.52	10.73	11.54	12.91	9.28	10.08	10.30	11.11	12.47
	3H	11.35	12.07	12.38	13.10	14.49	10.87	11.59	11.90	12.62	14.01
	4H	11.92	12.60	12.96	13.64	15.04	11.44	12.12	12.48	13.16	14.56
	6H	12.31	12.93	13.35	13.97	15.38	11.82	12.45	12.87	13.49	14.90
	8H	12.40	13.00	13.45	14.05	15.46	11.91	12.51	12.97	13.57	14.97
	12H	12.44	13.01	13.50	14.06	15.49	11.95	12.51	13.00	13.56	14.99
4H	2H	10.16	10.84	11.21	11.88	13.27	9.81	10.49	10.86	11.53	12.92
	3H	12.00	12.57	13.05	13.63	15.04	11.60	12.17	12.65	13.23	14.64
	4H	12.69	13.21	13.75	14.27	15.70	12.28	12.80	13.34	13.86	15.29
	6H	13.19	13.63	14.25	14.71	16.14	12.77	13.21	13.84	14.29	15.72
	8H	13.32	13.74	14.39	14.81	16.26	12.90	13.32	13.97	14.39	15.83
	12H	13.38	13.76	14.47	14.85	16.30	12.95	13.33	14.04	14.41	15.86
8H	4H	12.87	13.29	13.94	14.36	15.81	12.51	12.92	13.57	13.99	15.44
	6H	13.48	13.82	14.57	14.94	16.38	13.11	13.45	14.20	14.56	16.00
	8H	13.68	13.99	14.78	15.08	16.54	13.30	13.61	14.40	14.70	16.16
	12H	13.80	14.07	14.90	15.16	16.66	13.40	13.67	14.51	14.76	16.26
12H	4H	12.85	13.23	13.94	14.32	15.76	12.49	12.87	13.58	13.96	15.40
	6H	13.50	13.81	14.60	14.90	16.36	13.14	13.44	14.24	14.54	16.00
	8H	13.73	13.99	14.83	15.08	16.58	13.36	13.62	14.46	14.72	16.21