

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: P908929

Luminaire Tested: DFN2DIP-SQ2F0-030D040US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908929
REPORT IS A COMBINATION OF REPORTS P901303 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-030D040US840-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

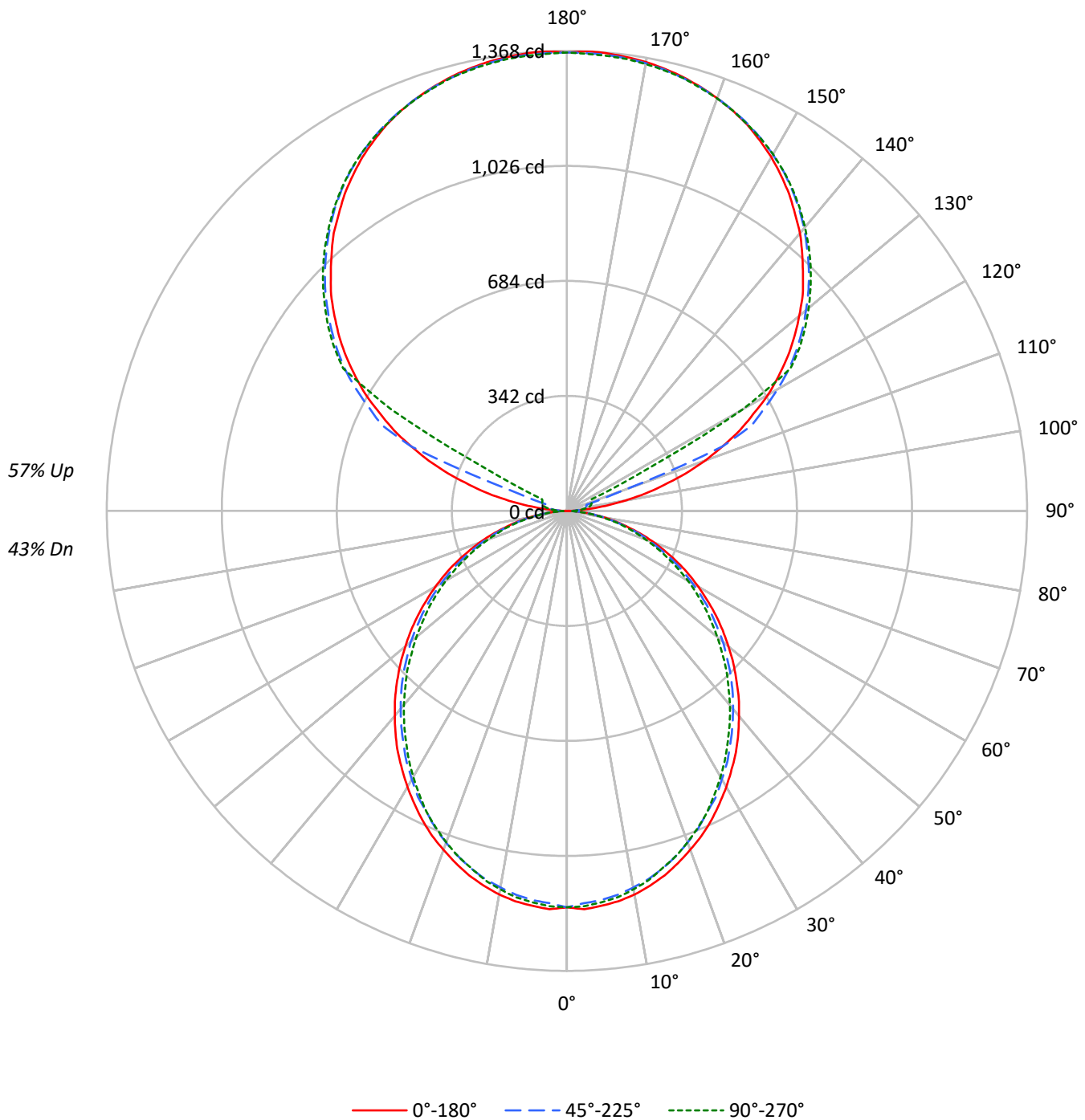
Lumens per Lamp: N/A
Luminaire Lumens: 6998.4 lumens
Efficiency: N/A
Efficacy: 133.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 52.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P908929

CATALOG NUMBER: DFN2DIP-SQ2F0-030D040US840-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P908929

CATALOG NUMBER: DFN2DIP-SQ2F0-030D040US840-FLONL

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°	2592	2592	2592
5°	2592	2550	2569
10°	2566	2510	2531
15°	2524	2464	2473
20°	2469	2400	2414
25°	2413	2326	2346
30°	2345	2257	2261
35°	2280	2176	2171
40°	2201	2094	2085
45°	2122	2011	1997
50°	2035	1924	1895
55°	1944	1824	1801
60°	1840	1706	1693
65°	1727	1582	1565
70°	1582	1432	1426
75°	1384	1252	1294
80°	1143	1021	1051
85°	774	644	660

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2122 cd/sqm

TEST NUMBER: P908929

CATALOG NUMBER: DFN2DIP-SQ2F0-030D040US840-FLONL

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: P908929

CATALOG NUMBER: DFN2DIP-SQ2F0-030D040US840-FLONL

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: P908929

CATALOG NUMBER: DFN2DIP-SQ2F0-030D040US840-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	9.77	10.57	10.79	11.60	12.97	9.33	10.13	10.34	11.15	12.52
	3H	11.41	12.13	12.43	13.16	14.55	10.92	11.64	11.94	12.67	14.06
	4H	11.98	12.66	13.02	13.70	15.09	11.49	12.17	12.52	13.20	14.60
	6H	12.36	12.99	13.41	14.03	15.44	11.86	12.49	12.91	13.53	14.94
	8H	12.46	13.05	13.51	14.11	15.51	11.96	12.55	13.01	13.61	15.01
	12H	12.50	13.06	13.55	14.11	15.54	11.99	12.55	13.05	13.61	15.03
4H	2H	10.21	10.89	11.26	11.93	13.33	9.86	10.54	10.90	11.58	12.97
	3H	12.05	12.62	13.11	13.68	15.09	11.64	12.21	12.70	13.28	14.69
	4H	12.75	13.27	13.81	14.32	15.76	12.32	12.84	13.38	13.90	15.33
	6H	13.24	13.69	14.31	14.77	16.19	12.81	13.26	13.88	14.34	15.76
	8H	13.38	13.80	14.45	14.87	16.31	12.94	13.36	14.01	14.43	15.87
	12H	13.44	13.82	14.53	14.90	16.35	12.99	13.37	14.08	14.46	15.90
8H	4H	12.93	13.35	14.00	14.42	15.86	12.55	12.97	13.62	14.04	15.48
	6H	13.53	13.88	14.63	14.99	16.43	13.15	13.49	14.24	14.61	16.05
	8H	13.74	14.04	14.84	15.14	16.60	13.35	13.65	14.45	14.75	16.20
	12H	13.86	14.12	14.96	15.21	16.71	13.45	13.71	14.55	14.80	16.30
12H	4H	12.91	13.29	14.00	14.37	15.82	12.54	12.92	13.63	14.00	15.45
	6H	13.56	13.86	14.66	14.96	16.42	13.18	13.49	14.28	14.58	16.04
	8H	13.78	14.05	14.88	15.14	16.64	13.40	13.67	14.50	14.76	16.26