

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: P903493

Luminaire Tested: DFN2DIP-SQ2F0-040D030US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903493
REPORT IS A COMBINATION OF REPORTS P901293 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-040D030US830-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

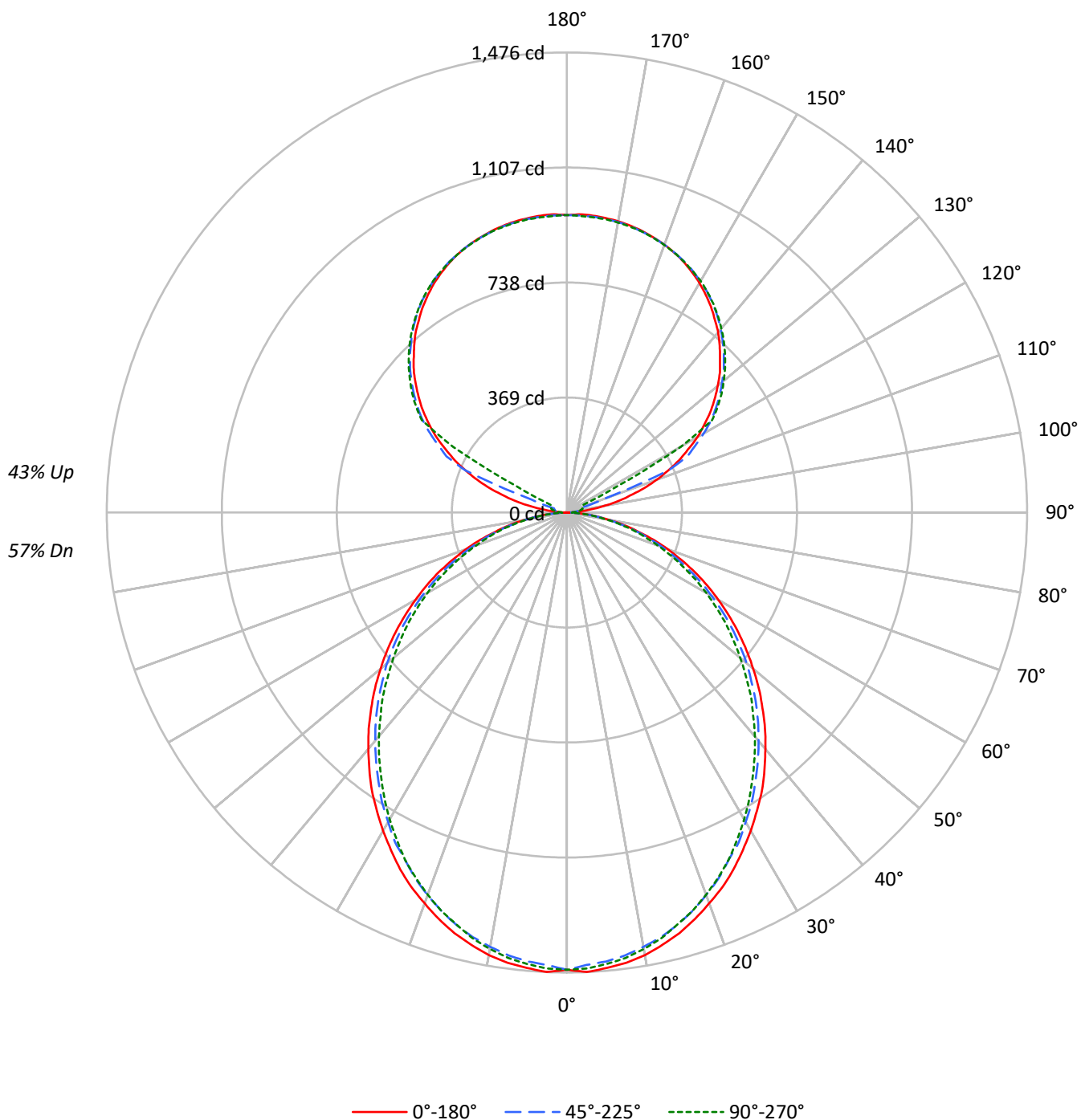
Lumens per Lamp: N/A
Luminaire Lumens: 6531.8 lumens
Efficiency: N/A
Efficacy: 115.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 56.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P903493

CATALOG NUMBER: DFN2DIP-SQ2F0-040D030US830-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P903493

CATALOG NUMBER: DFN2DIP-SQ2F0-040D030US830-FLLONL

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	101	101	101	101	87	87	87	74	74	74	63	63	63
1	99	95	91	88	92	89	85	82	77	74	72	66	64	62	55	54	53
2	91	83	77	72	84	77	72	67	67	63	59	58	55	52	49	47	45
3	83	73	66	60	77	68	62	56	59	54	50	51	47	44	43	40	38
4	76	65	57	50	70	61	53	48	53	47	43	45	41	38	39	35	33
5	69	58	49	43	64	54	47	41	47	41	37	41	36	33	35	31	29
6	64	52	44	38	59	49	41	36	43	37	32	37	32	29	32	28	25
7	59	47	39	33	55	44	37	31	39	33	28	34	29	25	29	25	22
8	55	43	35	29	51	40	33	28	35	29	25	31	26	23	27	23	20
9	51	39	31	26	48	37	30	25	32	27	23	28	24	20	25	21	18
10	48	36	28	24	45	34	27	22	30	24	20	26	22	18	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3226	3226	3226
5°	3225	3174	3198
10°	3194	3124	3150
15°	3141	3066	3078
20°	3072	2987	3004
25°	3003	2895	2920
30°	2918	2808	2813
35°	2837	2708	2701
40°	2739	2605	2594
45°	2640	2503	2485
50°	2532	2395	2358
55°	2419	2270	2241
60°	2290	2123	2106
65°	2148	1969	1948
70°	1968	1782	1775
75°	1723	1558	1610
80°	1422	1271	1308
85°	962	802	822

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2640 cd/sqm

TEST NUMBER: P903493

CATALOG NUMBER: DFN2DIP-SQ2F0-040D030US830-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.1	2.1
10°-20°	388.5	5.9
20°-30°	570.9	8.7
30°-40°	663.1	10.2
40°-50°	662.3	10.1
50°-60°	577.5	8.8
60°-70°	426.9	6.5
70°-80°	241.5	3.7
80°-90°	65.4	1.0
90°-100°	31.5	0.5
100°-110°	117.3	1.8
110°-120°	311.1	4.8
120°-130°	516.0	7.9
130°-140°	548.1	8.4
140°-150°	509.4	7.8
150°-160°	409.6	6.3
160°-170°	263.9	4.0
170°-180°	90.8	1.4
0°-30°	1097.5	16.8
0°-40°	1760.6	27.0
0°-60°	3000.3	45.9
0°-90°	3734.1	57.2
90°-120°	459.9	7.0
90°-150°	2033.4	31.1
90°-180°	2798.0	42.8
0°-180°	6531.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1467	1467	1467	1467	1467	
5°	1467	1461	1446	1457	1454	139
15°	1396	1388	1370	1375	1368	393
25°	1264	1253	1229	1231	1229	582
35°	1090	1076	1054	1045	1038	681
45°	887	878	856	841	835	685
55°	672	663	646	629	622	600
65°	453	444	430	418	411	448
75°	237	234	227	219	222	253
85°	58	56	55	51	49	64
90°	1	8	14	17	19	6
95°	45	22	27	30	30	53
105°	210	231	42	50	52	224
115°	397	409	426	106	57	391
125°	561	570	584	588	590	501
135°	695	706	712	719	718	537
145°	806	805	817	822	818	504
155°	887	881	889	894	888	409
165°	935	931	933	938	933	264
175°	956	952	953	958	951	91
180°	954	954	954	954	954	

TEST NUMBER: P903493

CATALOG NUMBER: DFN2DIP-SQ2F0-040D030US830-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1467.0	1467.0	1467.0	1467.0	1467.0
2.5°	1475.5	1468.5	1452.9	1467.0	1464.3
5°	1467.0	1461.4	1445.9	1457.1	1454.4
7.5°	1457.1	1448.7	1433.1	1444.5	1441.7
10°	1441.7	1431.8	1414.9	1426.2	1421.9
12.5°	1420.4	1412.0	1395.2	1402.2	1399.3
15°	1396.5	1388.1	1369.7	1375.4	1368.4
17.5°	1366.9	1358.5	1340.1	1347.1	1340.1
20°	1334.4	1326.0	1306.3	1310.4	1304.9
22.5°	1302.0	1289.3	1270.9	1270.9	1268.1
25°	1263.9	1252.6	1228.7	1231.4	1228.7
27.5°	1221.5	1211.6	1193.4	1189.2	1182.2
30°	1179.3	1168.0	1146.9	1142.6	1137.0
32.5°	1134.2	1125.8	1103.2	1094.7	1088.9
35°	1090.4	1076.4	1053.8	1045.3	1038.2
37.5°	1041.0	1028.3	1005.7	995.9	988.8
40°	990.3	978.9	956.3	943.8	938.1
42.5°	940.9	929.5	907.1	892.9	884.5
45°	887.3	877.5	856.2	840.8	835.1
47.5°	835.1	825.2	802.7	787.1	778.7
50°	780.0	773.0	753.3	733.5	726.4
52.5°	726.4	716.6	698.3	682.8	672.9
55°	671.6	663.0	646.1	629.1	622.2
57.5°	616.4	609.4	591.0	574.1	568.4
60°	561.4	555.8	536.1	520.6	516.3
62.5°	507.8	497.9	483.9	469.8	464.1
65°	452.9	444.3	430.3	417.5	410.6
67.5°	396.4	389.3	376.7	366.8	361.2
70°	344.2	338.6	325.8	315.9	310.4
72.5°	290.7	284.9	278.0	268.1	263.8
75°	237.0	234.2	227.1	218.7	221.5
77.5°	189.0	183.3	180.5	176.3	172.1
80°	141.1	139.6	136.8	132.6	129.8
82.5°	96.0	96.0	94.6	88.9	88.9
85°	57.8	56.5	55.0	50.7	49.4
87.5°	25.4	22.6	19.8	15.6	14.0
90°	0.7	8.3	13.8	17.3	18.6
92.5°	17.3	14.5	16.6	18.0	18.6
95°	44.9	22.1	26.9	30.4	29.7
97.5°	80.8	24.2	35.2	37.3	38.0
100°	122.2	27.6	39.4	44.9	46.3
102.5°	167.8	166.5	40.7	48.3	50.4
105°	209.9	230.6	42.1	49.7	52.5
107.5°	258.9	276.2	43.5	51.1	53.9
110°	305.9	320.4	120.8	51.8	54.6

TEST NUMBER: P903493

CATALOG NUMBER: DFN2DIP-SQ2F0-040D030US830-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	350.2	362.5	350.8	53.2	55.2
115°	397.0	408.8	426.0	106.3	56.6
117.5°	437.8	451.6	463.4	364.6	183.7
120°	483.3	493.7	506.1	514.4	421.2
122.5°	522.0	533.1	547.0	551.0	551.8
125°	561.4	570.3	583.5	588.3	590.4
127.5°	597.3	606.9	617.4	624.2	624.9
130°	631.1	642.2	649.8	657.3	656.8
132.5°	665.6	674.7	682.2	688.4	687.8
135°	694.7	705.8	711.9	718.9	717.5
137.5°	725.0	733.3	740.3	747.2	745.1
140°	754.7	760.3	767.8	774.0	770.6
142.5°	779.7	784.5	793.4	798.9	795.5
145°	805.9	805.1	816.9	821.7	818.2
147.5°	828.6	826.5	838.3	841.7	839.0
150°	850.7	845.9	857.0	861.0	857.6
152.5°	869.3	863.8	874.2	878.4	873.5
155°	887.3	881.2	889.4	893.5	888.1
157.5°	901.8	896.4	902.6	907.4	901.8
160°	914.3	910.1	914.3	918.4	913.5
162.5°	925.3	921.1	924.6	929.4	923.2
165°	934.9	930.9	932.9	937.7	932.9
167.5°	942.5	938.4	940.5	945.4	939.1
170°	948.8	944.6	946.0	950.8	944.6
172.5°	952.9	948.8	950.2	955.0	948.8
175°	956.3	951.5	952.9	957.7	950.8
177.5°	957.7	952.9	953.7	958.5	952.3
180°	954.3	954.3	954.3	954.3	954.3

TEST NUMBER: P903493

CATALOG NUMBER: DFN2DIP-SQ2F0-040D030US830-FLONL

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	11.86	12.79	12.76	13.71	14.87	11.42	12.35	12.31	13.26	14.43
	3H	13.51	14.34	14.41	15.27	16.46	13.02	13.85	13.92	14.78	15.97
	4H	14.09	14.88	15.01	15.80	17.00	13.59	14.38	14.51	15.31	16.51
	6H	14.48	15.20	15.41	16.14	17.35	13.98	14.70	14.91	15.64	16.85
	8H	14.57	15.27	15.51	16.22	17.43	14.07	14.77	15.01	15.72	16.93
	12H	14.62	15.28	15.56	16.22	17.46	14.11	14.77	15.05	15.71	16.95
4H	2H	12.32	13.11	13.25	14.04	15.24	11.97	12.75	12.89	13.68	14.88
	3H	14.17	14.83	15.11	15.79	17.00	13.76	14.42	14.70	15.38	16.59
	4H	14.87	15.47	15.82	16.43	17.67	14.45	15.05	15.39	16.00	17.24
	6H	15.37	15.89	16.33	16.87	18.11	14.94	15.46	15.90	16.44	17.67
	8H	15.51	16.00	16.48	16.97	18.22	15.08	15.56	16.04	16.53	17.79
	12H	15.58	16.02	16.56	17.01	18.26	15.13	15.57	16.11	16.56	17.82
8H	4H	15.06	15.55	16.02	16.52	17.77	14.68	15.17	15.65	16.14	17.39
	6H	15.67	16.07	16.66	17.09	18.34	15.29	15.69	16.28	16.70	17.95
	8H	15.88	16.24	16.88	17.24	18.51	15.49	15.84	16.48	16.84	18.11
	12H	16.00	16.31	17.00	17.31	18.63	15.59	15.90	16.59	16.90	18.21
12H	4H	15.05	15.49	16.03	16.47	17.73	14.68	15.12	15.66	16.10	17.36
	6H	15.70	16.05	16.69	17.05	18.32	15.32	15.68	16.32	16.68	17.95
	8H	15.93	16.24	16.93	17.23	18.55	15.55	15.86	16.55	16.85	18.17