

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: P903473

Luminaire Tested: DFN2DIP-SQ2F0-030D040US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903473
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-SQ2F0-030D040US830-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

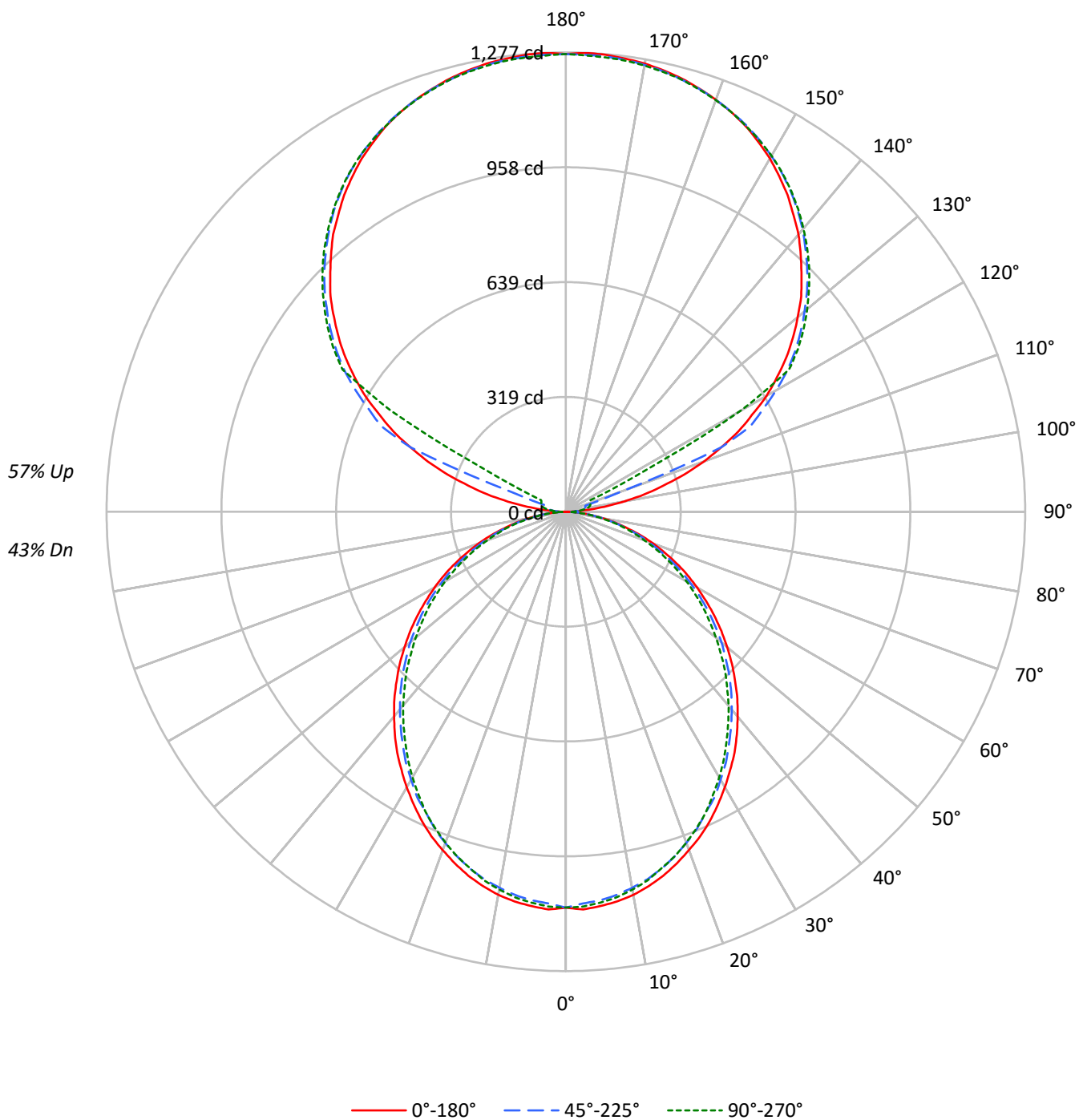
Lumens per Lamp: N/A
Luminaire Lumens: 6531.8 lumens
Efficiency: N/A
Efficacy: 124.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

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: P903473

CATALOG NUMBER: DFN2DIP-SQ2F0-030D040US830-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°	2419	2419	2419
5°	2419	2380	2398
10°	2395	2343	2362
15°	2356	2299	2308
20°	2304	2240	2253
25°	2252	2171	2190
30°	2189	2106	2110
35°	2128	2031	2026
40°	2054	1954	1946
45°	1980	1877	1863
50°	1899	1796	1769
55°	1814	1702	1681
60°	1717	1592	1580
65°	1611	1477	1460
70°	1477	1337	1331
75°	1292	1168	1208
80°	1066	953	982
85°	722	602	616

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1980 cd/sqm

TEST NUMBER: P903473

CATALOG NUMBER: DFN2DIP-SQ2F0-030D040US830-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	1.6
10°-20°	291.4	4.5
20°-30°	428.2	6.6
30°-40°	497.3	7.6
40°-50°	496.7	7.6
50°-60°	433.1	6.6
60°-70°	320.2	4.9
70°-80°	181.1	2.8
80°-90°	50.0	0.8
90°-100°	41.9	0.6
100°-110°	156.4	2.4
110°-120°	414.8	6.4
120°-130°	688.0	10.5
130°-140°	730.8	11.2
140°-150°	679.2	10.4
150°-160°	546.1	8.4
160°-170°	351.9	5.4
170°-180°	121.1	1.9
0°-30°	823.1	12.6
0°-40°	1320.4	20.2
0°-60°	2250.3	34.5
0°-90°	2801.6	42.9
90°-120°	613.2	9.4
90°-150°	2711.2	41.5
90°-180°	3730.0	57.1
0°-180°	6531.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1100	1100	1100	1100	1100	
5°	1100	1096	1084	1093	1091	104
15°	1047	1041	1027	1032	1026	295
25°	948	940	922	924	922	436
35°	818	807	790	784	779	511
45°	666	658	642	631	626	514
55°	504	497	485	472	467	450
65°	340	333	323	313	308	336
75°	178	176	170	164	166	190
85°	43	42	41	38	37	48
90°	1	11	18	23	25	6
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: P903473

CATALOG NUMBER: DFN2DIP-SQ2F0-030D040US830-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1100.2	1100.2	1100.2	1100.2	1100.2
2.5°	1106.6	1101.4	1089.7	1100.2	1098.3
5°	1100.2	1096.1	1084.4	1092.9	1090.8
7.5°	1092.9	1086.6	1074.9	1083.5	1081.3
10°	1081.3	1073.8	1061.2	1069.6	1066.5
12.5°	1065.4	1059.0	1046.4	1051.6	1049.5
15°	1047.4	1041.1	1027.3	1031.5	1026.2
17.5°	1025.1	1018.9	1005.0	1010.3	1005.0
20°	1000.8	994.5	979.7	982.8	978.6
22.5°	976.6	967.0	953.2	953.2	951.0
25°	947.9	939.5	921.5	923.6	921.5
27.5°	916.2	908.7	895.0	891.9	886.6
30°	884.5	876.0	860.2	857.0	852.7
32.5°	850.6	844.3	827.4	821.0	816.7
35°	817.8	807.3	790.3	783.9	778.6
37.5°	780.8	771.3	754.3	746.9	741.6
40°	742.7	734.2	717.3	707.8	703.6
42.5°	705.7	697.2	680.3	669.7	663.4
45°	665.5	658.1	642.2	630.6	626.3
47.5°	626.3	619.0	602.0	590.3	584.0
50°	585.0	579.8	565.0	550.2	544.9
52.5°	544.9	537.4	523.8	512.1	504.6
55°	503.7	497.3	484.6	471.9	466.7
57.5°	462.3	457.0	443.3	430.6	426.3
60°	421.0	416.9	402.1	390.4	387.3
62.5°	380.9	373.4	362.9	352.3	348.1
65°	339.7	333.3	322.7	313.2	307.9
67.5°	297.4	292.0	282.5	275.1	270.9
70°	258.2	253.9	244.4	237.0	232.8
72.5°	218.0	213.7	208.4	201.0	197.9
75°	177.7	175.7	170.3	164.0	166.2
77.5°	141.8	137.5	135.3	132.2	129.1
80°	105.8	104.7	102.5	99.4	97.4
82.5°	71.9	71.9	71.0	66.6	66.6
85°	43.4	42.3	41.3	38.1	37.0
87.5°	19.0	17.0	14.8	11.7	10.6
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: P903473

CATALOG NUMBER: DFN2DIP-SQ2F0-030D040US830-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	9.53	10.33	10.55	11.36	12.73	9.09	9.89	10.10	10.91	12.28
	3H	11.17	11.89	12.19	12.92	14.31	10.68	11.40	11.70	12.43	13.82
	4H	11.74	12.42	12.78	13.46	14.85	11.25	11.93	12.29	12.96	14.36
	6H	12.12	12.75	13.17	13.79	15.20	11.62	12.25	12.67	13.29	14.70
	8H	12.22	12.81	13.27	13.87	15.27	11.72	12.31	12.77	13.37	14.77
	12H	12.26	12.82	13.31	13.87	15.30	11.75	12.32	12.81	13.37	14.79
4H	2H	9.97	10.65	11.02	11.69	13.09	9.62	10.30	10.66	11.34	12.73
	3H	11.81	12.38	12.86	13.44	14.85	11.40	11.97	12.46	13.04	14.45
	4H	12.51	13.03	13.57	14.08	15.52	12.08	12.60	13.14	13.66	15.09
	6H	13.00	13.45	14.07	14.53	15.95	12.57	13.02	13.64	14.10	15.52
	8H	13.14	13.56	14.21	14.63	16.07	12.70	13.12	13.77	14.19	15.63
	12H	13.20	13.58	14.29	14.66	16.11	12.75	13.13	13.84	14.22	15.66
8H	4H	12.69	13.11	13.76	14.18	15.62	12.31	12.73	13.38	13.80	15.24
	6H	13.29	13.64	14.39	14.75	16.19	12.91	13.25	14.00	14.37	15.81
	8H	13.50	13.80	14.60	14.90	16.36	13.11	13.41	14.21	14.51	15.96
	12H	13.62	13.88	14.72	14.97	16.47	13.21	13.47	14.31	14.56	16.06
12H	4H	12.67	13.05	13.76	14.13	15.58	12.30	12.68	13.39	13.76	15.21
	6H	13.32	13.62	14.42	14.72	16.18	12.94	13.25	14.04	14.34	15.80
	8H	13.54	13.81	14.64	14.90	16.40	13.16	13.43	14.26	14.52	16.02