

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: P906297

Luminaire Tested: DFN2DIP-SQ2F0-070D040US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906297
REPORT IS A COMBINATION OF REPORTS P901311 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-070D040US835-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

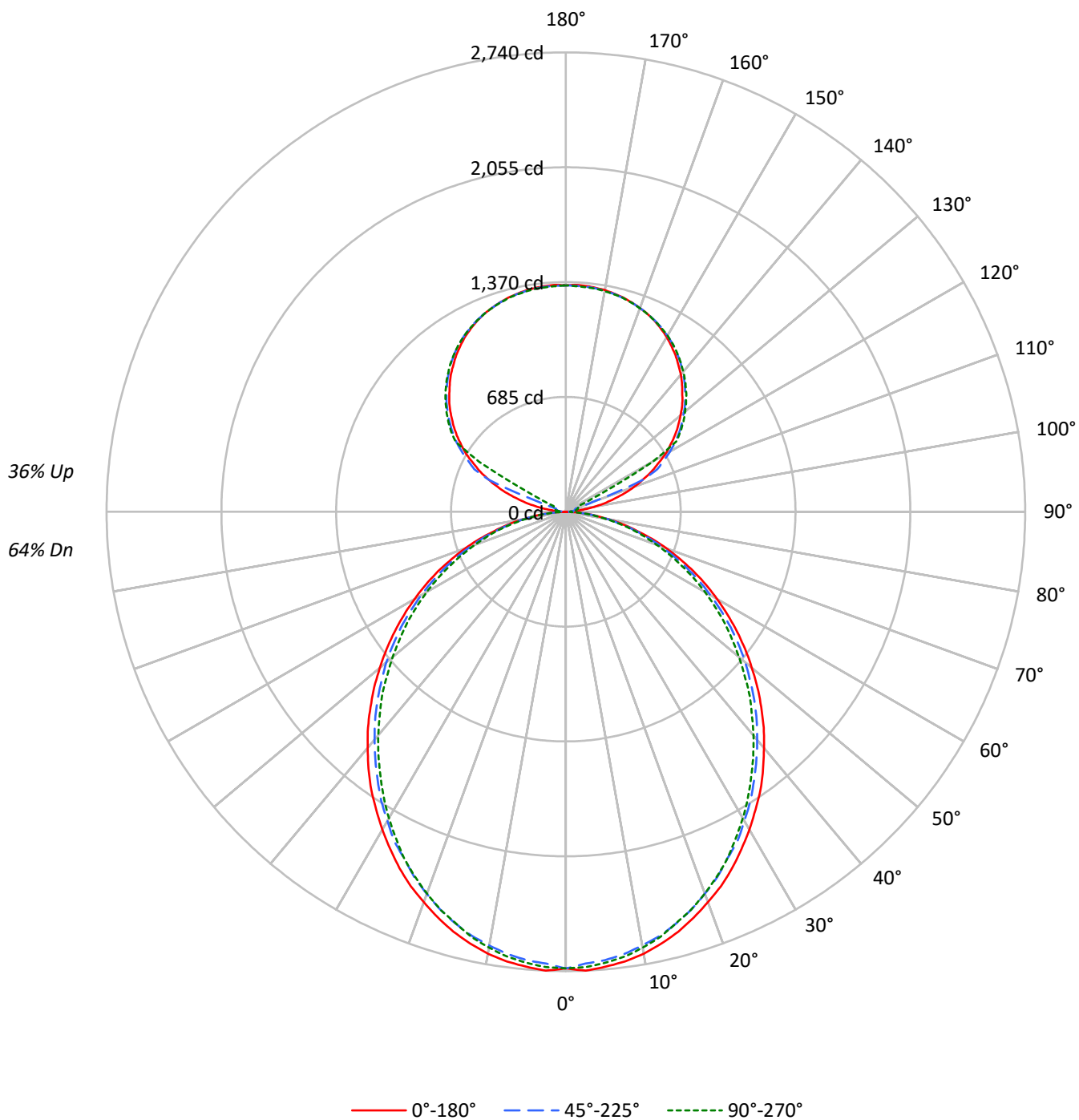
Lumens per Lamp: N/A
Luminaire Lumens: 10890.0 lumens
Efficiency: N/A
Efficacy: 112.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 97.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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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	110	110	110	110	104	104	104	104	91	91	91	79	79	79	69	69	69
1	101	96	92	89	94	91	87	84	80	77	75	70	68	66	61	59	58
2	92	84	78	73	86	79	74	69	70	66	62	61	58	55	53	51	49
3	84	74	67	61	78	70	63	58	62	57	52	54	50	47	47	44	42
4	77	66	58	51	72	62	55	49	55	49	45	48	44	40	42	39	36
5	71	59	50	44	66	55	48	42	49	43	39	44	39	35	38	34	31
6	65	53	44	38	61	50	42	37	44	38	34	39	34	31	35	31	28
7	60	48	39	34	56	45	38	32	40	34	30	36	31	27	32	28	25
8	56	43	35	30	52	41	34	29	37	31	27	33	28	24	29	25	22
9	52	40	32	27	49	38	31	26	34	28	24	30	25	22	27	23	20
10	49	36	29	24	46	35	28	23	31	26	22	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5989	5989	5989
5°	5988	5893	5937
10°	5930	5800	5848
15°	5832	5692	5714
20°	5704	5546	5578
25°	5576	5375	5421
30°	5418	5214	5224
35°	5268	5027	5016
40°	5085	4837	4817
45°	4902	4646	4613
50°	4701	4445	4378
55°	4490	4214	4160
60°	4251	3941	3910
65°	3989	3656	3615
70°	3655	3308	3296
75°	3198	2891	2990
80°	2641	2361	2428
85°	1785	1491	1525

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4902 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	256.4	2.4
10°-20°	721.3	6.6
20°-30°	1060.0	9.7
30°-40°	1231.1	11.3
40°-50°	1229.6	11.3
50°-60°	1072.2	9.8
60°-70°	792.6	7.3
70°-80°	448.4	4.1
80°-90°	120.7	1.1
90°-100°	44.5	0.4
100°-110°	165.9	1.5
110°-120°	440.1	4.0
120°-130°	729.9	6.7
130°-140°	775.4	7.1
140°-150°	720.6	6.6
150°-160°	579.4	5.3
160°-170°	373.3	3.4
170°-180°	128.5	1.2
0°-30°	2037.7	18.7
0°-40°	3268.8	30.0
0°-60°	5570.6	51.2
0°-90°	6932.4	63.7
90°-120°	650.5	6.0
90°-150°	2876.4	26.4
90°-180°	3958.0	36.3
0°-180°	10890.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2724	2724	2724	2724	2724	
5°	2724	2714	2685	2705	2700	259
15°	2593	2577	2543	2554	2541	730
25°	2347	2326	2281	2286	2281	1080
35°	2025	1998	1956	1941	1928	1264
45°	1648	1629	1590	1561	1550	1271
55°	1247	1231	1200	1168	1155	1115
65°	841	825	799	775	762	831
75°	440	435	422	406	411	470
85°	107	105	102	94	92	120
90°	1	12	20	24	26	10
95°	63	31	38	43	42	75
105°	297	326	60	70	74	317
115°	562	578	603	150	80	553
125°	794	807	825	832	835	708
135°	983	998	1007	1017	1015	759
145°	1140	1139	1156	1162	1158	713
155°	1255	1246	1258	1264	1256	578
165°	1323	1317	1320	1326	1320	374
175°	1353	1346	1348	1355	1345	129
180°	1350	1350	1350	1350	1350	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2723.7	2723.7	2723.7	2723.7	2723.7
2.5°	2739.6	2726.5	2697.6	2723.7	2718.7
5°	2723.7	2713.5	2684.6	2705.4	2700.4
7.5°	2705.4	2689.8	2660.9	2682.1	2676.8
10°	2676.8	2658.4	2627.0	2647.9	2640.1
12.5°	2637.3	2621.8	2590.4	2603.4	2598.1
15°	2592.9	2577.3	2543.1	2553.7	2540.6
17.5°	2537.8	2522.3	2488.1	2501.2	2488.1
20°	2477.5	2462.0	2425.3	2433.1	2422.8
22.5°	2417.5	2393.9	2359.7	2359.7	2354.4
25°	2346.7	2325.8	2281.4	2286.4	2281.4
27.5°	2268.0	2249.7	2215.8	2208.0	2194.9
30°	2189.7	2168.5	2129.4	2121.6	2111.0
32.5°	2105.7	2090.2	2048.2	2032.4	2021.8
35°	2024.6	1998.5	1956.5	1940.7	1927.6
37.5°	1932.9	1909.3	1867.3	1849.0	1835.9
40°	1838.7	1817.6	1775.6	1752.3	1741.7
42.5°	1747.0	1725.9	1684.2	1657.8	1642.2
45°	1647.5	1629.2	1589.7	1561.1	1550.5
47.5°	1550.5	1532.2	1490.2	1461.3	1445.8
50°	1448.3	1435.2	1398.5	1361.9	1348.8
52.5°	1348.8	1330.5	1296.6	1267.7	1249.3
55°	1246.8	1231.0	1199.6	1168.2	1155.1
57.5°	1144.6	1131.5	1097.3	1065.9	1055.4
60°	1042.3	1032.0	995.4	966.5	958.7
62.5°	942.8	924.5	898.4	872.3	861.7
65°	840.9	825.0	798.9	775.3	762.2
67.5°	736.1	722.8	699.4	681.1	670.5
70°	639.1	628.6	604.9	586.6	576.3
72.5°	539.6	529.1	516.0	497.7	489.9
75°	439.9	434.9	421.5	406.0	411.3
77.5°	351.0	340.4	335.1	327.3	319.6
80°	262.0	259.3	254.0	246.2	240.9
82.5°	178.1	178.1	175.6	165.1	165.1
85°	107.3	104.8	102.3	94.2	91.7
87.5°	47.2	42.0	36.7	28.9	26.1
90°	0.9	11.7	19.5	24.5	26.3
92.5°	24.5	20.5	23.4	25.4	26.3
95°	63.4	31.2	38.0	43.0	42.0
97.5°	114.3	34.2	49.8	52.8	53.7
100°	172.9	39.1	55.7	63.4	65.4
102.5°	237.3	235.5	57.6	68.3	71.3
105°	296.9	326.3	59.6	70.3	74.2
107.5°	366.3	390.7	61.6	72.3	76.2
110°	432.8	453.2	171.0	73.3	77.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	495.3	512.8	496.2	75.2	78.2
115°	561.6	578.2	602.7	150.4	80.2
117.5°	619.3	638.8	655.5	515.7	259.8
120°	683.8	698.4	716.0	727.8	595.9
122.5°	738.4	754.1	773.7	779.5	780.5
125°	794.1	806.9	825.4	832.3	835.2
127.5°	844.9	858.6	873.3	883.1	884.0
130°	892.8	908.5	919.1	929.9	929.0
132.5°	941.6	954.4	965.1	973.9	973.0
135°	982.7	998.4	1007.1	1016.9	1015.0
137.5°	1025.6	1037.3	1047.2	1056.9	1054.0
140°	1067.6	1075.5	1086.2	1095.0	1090.1
142.5°	1102.9	1109.7	1122.4	1130.1	1125.3
145°	1140.0	1139.0	1155.5	1162.4	1157.5
147.5°	1172.1	1169.2	1185.8	1190.7	1186.9
150°	1203.4	1196.6	1212.3	1218.1	1213.2
152.5°	1229.8	1222.0	1236.6	1242.5	1235.7
155°	1255.2	1246.5	1258.2	1264.0	1256.2
157.5°	1275.7	1267.9	1276.8	1283.6	1275.7
160°	1293.3	1287.4	1293.3	1299.1	1292.3
162.5°	1308.9	1303.1	1308.0	1314.8	1306.0
165°	1322.6	1316.8	1319.7	1326.5	1319.7
167.5°	1333.4	1327.4	1330.5	1337.3	1328.5
170°	1342.2	1336.3	1338.2	1345.1	1336.3
172.5°	1348.0	1342.2	1344.2	1351.0	1342.2
175°	1352.8	1346.0	1348.0	1354.8	1345.1
177.5°	1354.8	1348.0	1349.0	1355.9	1347.1
180°	1350.0	1350.0	1350.0	1350.0	1350.0

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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	14.55	15.55	15.38	16.40	17.46	14.10	15.10	14.93	15.96	17.02
	3H	16.20	17.10	17.04	17.96	19.05	15.71	16.61	16.55	17.47	18.56
	4H	16.78	17.63	17.64	18.50	19.60	16.29	17.13	17.15	18.00	19.10
	6H	17.17	17.95	18.04	18.83	19.94	16.67	17.45	17.54	18.33	19.44
	8H	17.27	18.02	18.15	18.91	20.03	16.77	17.52	17.65	18.41	19.52
	12H	17.32	18.03	18.21	18.92	20.06	16.81	17.52	17.70	18.41	19.55
4H	2H	15.02	15.86	15.88	16.73	17.83	14.66	15.51	15.52	16.38	17.48
	3H	16.87	17.58	17.75	18.48	19.60	16.46	17.17	17.34	18.07	19.19
	4H	17.58	18.22	18.46	19.12	20.26	17.15	17.80	18.04	18.69	19.84
	6H	18.08	18.64	18.98	19.56	20.70	17.65	18.21	18.55	19.13	20.27
	8H	18.22	18.74	19.13	19.66	20.82	17.79	18.31	18.69	19.22	20.38
	12H	18.29	18.76	19.22	19.70	20.86	17.85	18.32	18.77	19.25	20.41
8H	4H	17.77	18.29	18.68	19.21	20.37	17.39	17.91	18.30	18.83	19.99
	6H	18.38	18.82	19.32	19.77	20.93	18.00	18.43	18.93	19.39	20.55
	8H	18.59	18.98	19.54	19.92	21.10	18.20	18.58	19.14	19.53	20.71
	12H	18.72	19.05	19.66	20.00	21.22	18.31	18.64	19.25	19.59	20.81
12H	4H	17.76	18.23	18.69	19.17	20.33	17.39	17.86	18.32	18.80	19.96
	6H	18.41	18.79	19.35	19.74	20.92	18.04	18.42	18.98	19.37	20.54
	8H	18.64	18.98	19.59	19.92	21.15	18.26	18.60	19.21	19.54	20.77