

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: P917510

Luminaire Tested: DFN2DIP-SQ3F0-110D050US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917510
REPORT IS A COMBINATION OF REPORTS P899894 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-110D050US930-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

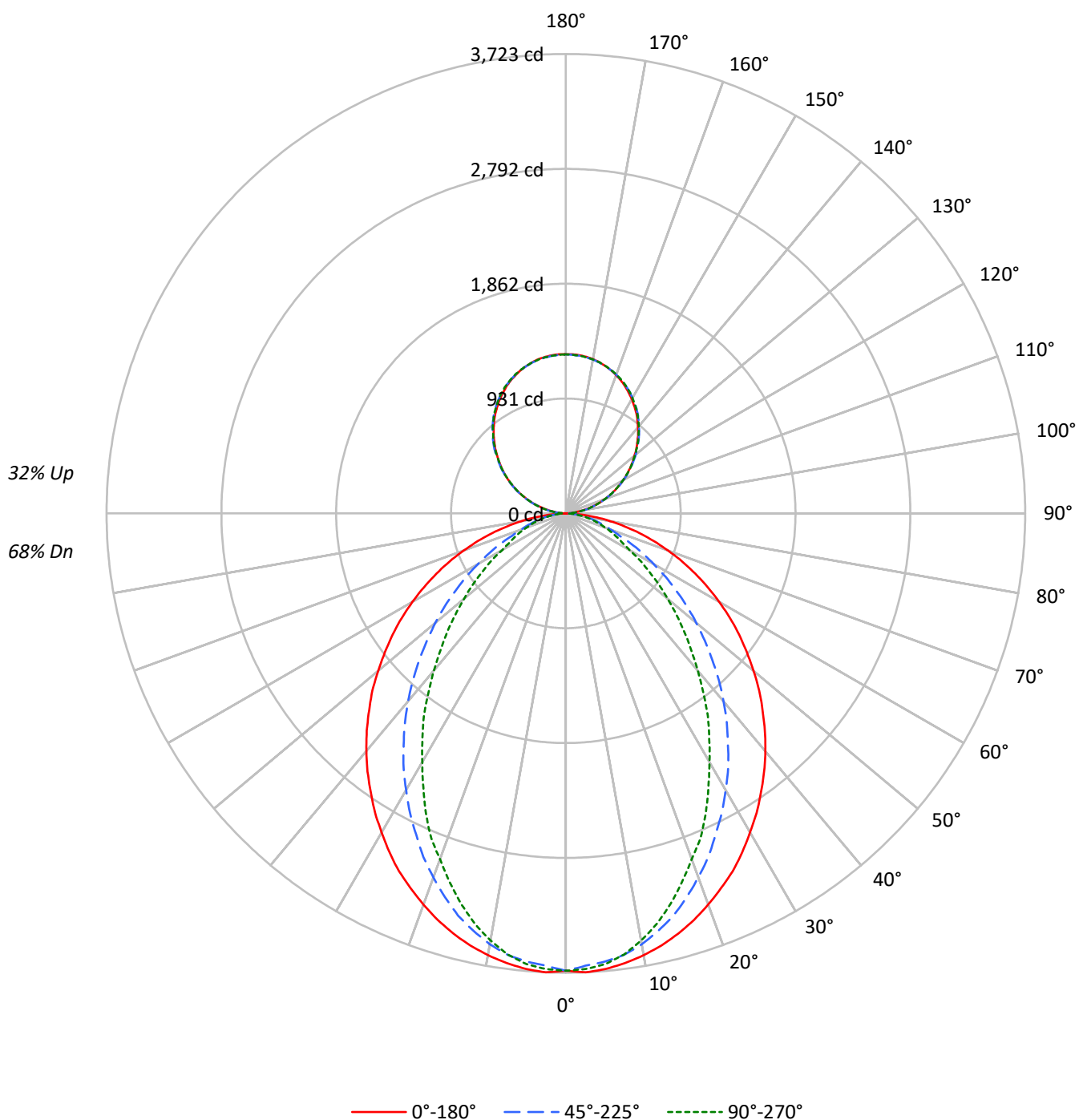
Lumens per Lamp: N/A
Luminaire Lumens: 11230.7 lumens
Efficiency: N/A
Efficacy: 75.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 148.8
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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	73	73	73
1	102	98	94	91	97	93	90	87	83	80	78	74	72	70	65	64	63
2	94	87	81	76	88	82	77	72	73	69	66	66	62	60	58	56	54
3	86	77	70	64	81	73	66	61	65	60	56	59	55	51	52	49	47
4	79	68	61	55	74	65	58	53	59	53	49	53	48	45	47	44	41
5	73	61	53	47	69	58	51	46	53	47	42	48	43	39	43	39	36
6	68	56	47	42	64	53	46	40	48	42	37	43	38	35	39	35	32
7	63	50	42	37	59	48	41	36	44	38	33	40	35	31	36	32	29
8	58	46	38	33	55	44	37	32	40	34	30	37	32	28	33	29	26
9	55	42	35	30	52	40	34	29	37	31	27	34	29	25	31	27	24
10	51	39	32	27	48	37	31	26	34	29	25	31	27	23	29	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4247	4247	4247
5°	4251	4177	4205
10°	4206	4092	4067
15°	4146	3954	3854
20°	4066	3765	3593
25°	3985	3554	3342
30°	3877	3337	3023
35°	3771	3105	2743
40°	3663	2864	2422
45°	3537	2598	2132
50°	3407	2330	1848
55°	3271	2043	1575
60°	3114	1744	1295
65°	2932	1440	1164
70°	2712	1157	1051
75°	2435	1013	954
80°	2035	841	822
85°	1380	548	610

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3537 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	347.4	3.1
10°-20°	953.6	8.5
20°-30°	1338.9	11.9
30°-40°	1459.5	13.0
40°-50°	1341.4	11.9
50°-60°	1053.5	9.4
60°-70°	685.7	6.1
70°-80°	353.0	3.1
80°-90°	93.8	0.8
90°-100°	79.8	0.7
100°-110°	253.5	2.3
110°-120°	433.8	3.9
120°-130°	570.5	5.1
130°-140°	640.4	5.7
140°-150°	627.9	5.6
150°-160°	526.8	4.7
160°-170°	349.3	3.1
170°-180°	122.1	1.1
0°-30°	2639.9	23.5
0°-40°	4099.4	36.5
0°-60°	6494.2	57.8
0°-90°	7626.7	67.9
90°-120°	767.0	6.8
90°-150°	2605.8	23.2
90°-180°	3604.0	32.1
0°-180°	11230.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3707	3707	3707	3707	3707	
5°	3707	3690	3646	3676	3666	351
15°	3525	3488	3374	3311	3277	993
25°	3200	3093	2871	2734	2683	1472
35°	2757	2586	2291	2080	2006	1726
45°	2254	2029	1677	1439	1358	1741
55°	1714	1452	1090	889	825	1532
65°	1157	885	584	470	459	1147
75°	617	382	268	245	242	653
85°	144	74	64	64	64	165
90°	1	14	38	36	37	11
95°	57	68	70	70	68	63
105°	234	237	240	241	241	247
115°	435	442	440	438	435	431
125°	633	643	640	636	635	566
135°	819	831	833	832	829	633
145°	994	1002	1008	1009	1005	621
155°	1137	1140	1144	1149	1145	523
165°	1237	1236	1236	1243	1238	349
175°	1287	1284	1282	1289	1283	122
180°	1289	1289	1289	1289	1289	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3706.6	3706.6	3706.6	3706.6	3706.6
2.5°	3723.3	3706.6	3669.6	3703.4	3696.6
5°	3706.6	3689.9	3646.1	3676.3	3666.4
7.5°	3676.3	3656.4	3609.4	3622.6	3605.8
10°	3636.1	3612.6	3545.7	3535.4	3515.5
12.5°	3585.9	3555.7	3464.9	3445.0	3407.9
15°	3525.4	3488.4	3374.5	3310.8	3277.3
17.5°	3455.0	3401.3	3260.3	3186.6	3132.9
20°	3374.5	3307.3	3139.6	3056.0	2982.0
22.5°	3287.4	3210.1	3015.5	2901.6	2851.3
25°	3200.1	3092.7	2871.3	2733.9	2683.4
27.5°	3096.3	2982.0	2737.1	2579.4	2502.2
30°	2985.5	2857.8	2589.5	2418.6	2327.8
32.5°	2878.1	2723.6	2448.8	2247.5	2163.5
35°	2757.4	2586.2	2291.2	2079.8	2005.8
37.5°	2640.0	2455.3	2143.5	1911.8	1828.2
40°	2515.8	2314.7	1989.1	1750.9	1663.8
42.5°	2388.3	2173.7	1835.0	1586.6	1502.9
45°	2254.2	2029.3	1677.3	1438.8	1358.4
47.5°	2126.8	1888.7	1526.4	1287.9	1214.3
50°	1985.8	1747.8	1378.8	1147.0	1076.9
52.5°	1848.1	1596.5	1237.8	1016.4	952.7
55°	1713.9	1452.4	1090.1	889.0	825.3
57.5°	1576.6	1308.2	959.4	771.6	717.8
60°	1435.7	1167.3	821.7	650.9	597.2
62.5°	1298.3	1030.0	704.3	543.5	516.7
65°	1157.3	885.4	583.7	469.8	459.4
67.5°	1023.2	751.3	469.8	412.5	402.5
70°	882.2	620.7	389.0	355.6	342.0
72.5°	748.0	499.7	325.3	298.6	291.8
75°	617.1	382.2	268.3	244.8	241.7
77.5°	486.5	271.6	211.4	197.9	191.1
80°	365.5	194.7	160.9	147.7	147.7
82.5°	254.8	130.9	110.7	104.0	104.0
85°	144.1	73.7	63.7	63.7	63.7
87.5°	53.7	26.7	26.7	23.5	23.5
90°	1.1	14.0	38.1	35.8	36.9
92.5°	24.1	32.6	33.8	35.0	35.0
95°	56.7	67.7	69.5	69.5	67.7
97.5°	94.4	104.5	108.8	108.8	108.8
100°	137.9	146.9	150.0	150.0	148.9
102.5°	183.8	190.5	194.7	195.9	194.7
105°	234.0	237.1	239.5	241.3	241.3
107.5°	283.7	288.4	288.4	289.2	283.7
110°	331.9	338.2	338.2	338.2	335.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	384.0	390.6	389.5	386.4	384.0
115°	435.3	441.6	439.6	438.5	435.3
117.5°	486.2	494.8	489.3	486.2	483.1
120°	537.5	546.1	537.5	537.5	534.0
122.5°	584.2	595.1	589.6	586.5	584.2
125°	633.2	642.9	639.8	636.3	635.1
127.5°	680.9	693.0	688.8	684.0	680.9
130°	725.7	739.6	737.7	735.4	731.1
132.5°	775.8	786.7	787.5	782.0	778.9
135°	819.0	831.0	833.3	832.2	829.1
137.5°	867.2	876.9	878.8	878.0	873.3
140°	909.5	919.2	924.6	924.6	920.4
142.5°	953.0	962.8	965.9	967.0	962.8
145°	994.3	1002.0	1008.2	1009.4	1005.1
147.5°	1031.2	1040.9	1045.5	1047.5	1043.2
150°	1069.3	1075.9	1080.1	1083.6	1080.1
152.5°	1103.1	1109.7	1115.1	1119.4	1115.1
155°	1136.9	1140.0	1143.5	1148.9	1145.4
157.5°	1166.0	1168.3	1170.3	1178.1	1172.6
160°	1192.0	1194.4	1195.6	1202.2	1197.5
162.5°	1216.2	1216.2	1217.3	1224.7	1219.3
165°	1236.8	1235.6	1235.6	1243.4	1237.9
167.5°	1255.4	1251.9	1251.9	1259.7	1254.3
170°	1269.4	1266.3	1265.2	1272.9	1266.3
172.5°	1279.1	1276.0	1274.9	1282.6	1276.0
175°	1286.9	1283.8	1281.5	1289.2	1282.6
177.5°	1291.2	1288.1	1285.7	1292.3	1285.7
180°	1289.2	1289.2	1289.2	1289.2	1289.2

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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	13.67	14.67	14.46	15.48	16.47	9.63	10.63	10.42	11.44	12.43
	3H	15.35	16.25	16.16	17.07	18.09	10.82	11.72	11.63	12.54	13.56
	4H	15.96	16.81	16.79	17.64	18.67	11.28	12.12	12.10	12.95	13.98
	6H	16.39	17.17	17.23	18.01	19.05	11.60	12.38	12.44	13.21	14.26
	8H	16.52	17.26	17.37	18.12	19.16	11.69	12.43	12.54	13.29	14.33
	12H	16.59	17.29	17.44	18.14	19.21	11.74	12.44	12.59	13.29	14.36
4H	2H	13.70	14.55	14.53	15.38	16.41	10.24	11.09	11.07	11.91	12.95
	3H	15.54	16.24	16.38	17.11	18.16	11.60	12.30	12.44	13.16	14.21
	4H	16.24	16.87	17.09	17.73	18.81	12.15	12.79	13.00	13.65	14.72
	6H	16.76	17.31	17.63	18.19	19.27	12.57	13.12	13.44	14.00	15.08
	8H	16.93	17.45	17.80	18.33	19.42	12.70	13.21	13.57	14.09	15.18
	12H	17.03	17.49	17.92	18.39	19.49	12.77	13.23	13.66	14.13	15.23
8H	4H	16.22	16.73	17.09	17.61	18.70	12.44	12.95	13.31	13.83	14.92
	6H	16.78	17.21	17.68	18.13	19.22	12.95	13.38	13.85	14.30	15.39
	8H	17.00	17.37	17.91	18.29	19.40	13.14	13.52	14.05	14.43	15.54
	12H	17.14	17.47	18.05	18.38	19.54	13.26	13.59	14.17	14.50	15.66
12H	4H	16.18	16.64	17.07	17.54	18.63	12.45	12.91	13.34	13.81	14.91
	6H	16.76	17.13	17.67	18.05	19.16	13.00	13.38	13.91	14.29	15.40
	8H	16.98	17.31	17.89	18.22	19.38	13.21	13.55	14.13	14.45	15.62

END OF REPORT