

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: P914555

Luminaire Tested: DFN2DIP-SQ3F0-040D110US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914555
REPORT IS A COMBINATION OF REPORTS P901508 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-040D110US927-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

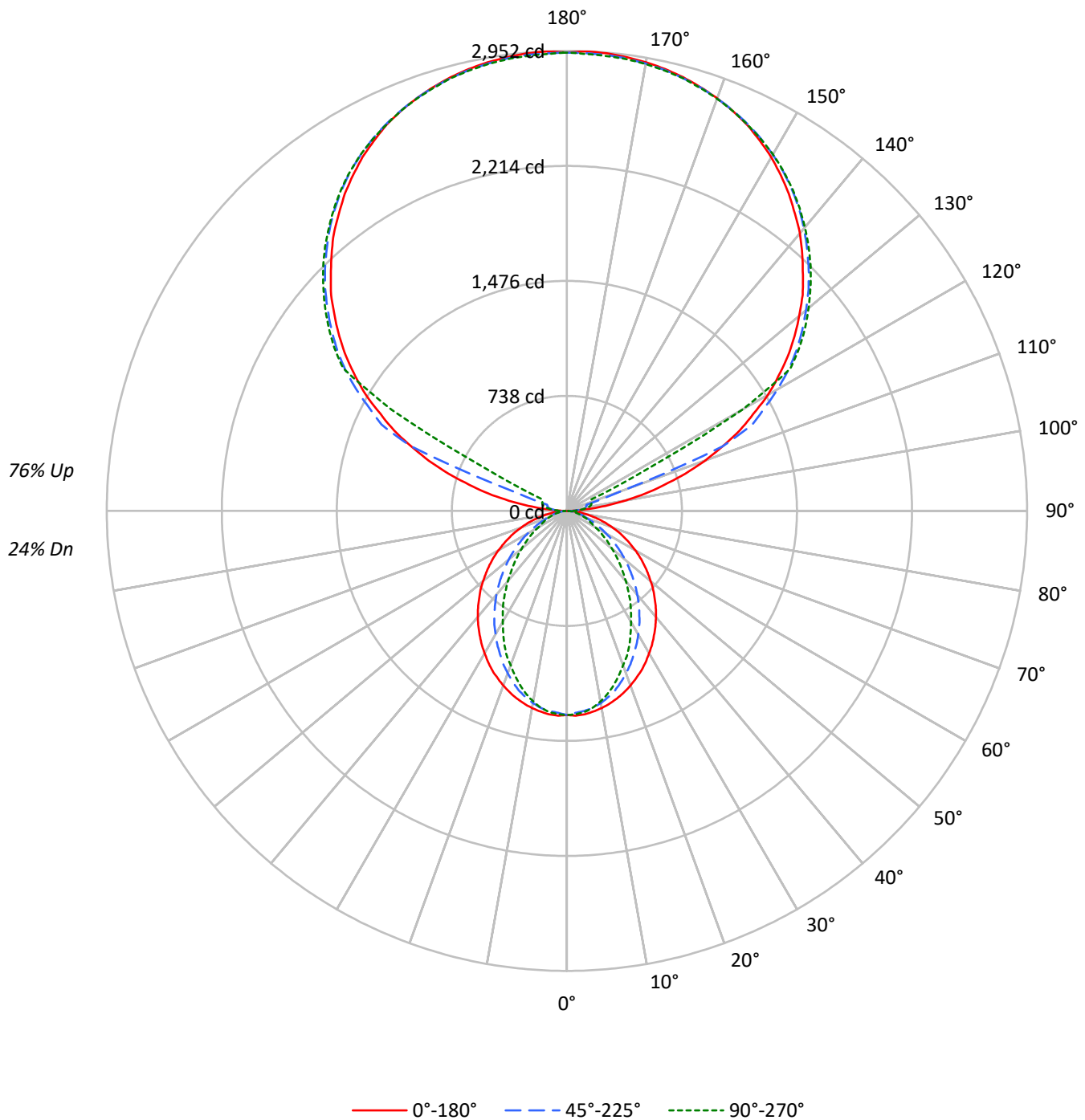
Lumens per Lamp: N/A
Luminaire Lumens: 11320.2 lumens
Efficiency: N/A
Efficacy: 95.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 118.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	32	32	32
1	92	88	84	81	82	78	75	73	60	58	57	44	43	42	29	28	27
2	84	77	71	67	75	69	64	60	53	50	47	39	37	35	25	24	23
3	77	68	61	56	68	61	55	50	47	43	40	34	32	30	23	21	20
4	70	60	53	47	62	54	48	43	42	38	34	31	28	26	20	19	18
5	64	53	46	40	57	48	41	37	37	33	29	28	25	22	19	17	15
6	59	48	40	35	53	43	36	32	34	29	26	25	22	20	17	15	14
7	55	43	36	30	49	39	32	28	30	26	22	23	20	17	15	14	12
8	51	39	32	27	45	35	29	24	28	23	20	21	18	15	14	12	11
9	47	36	28	24	42	32	26	22	25	21	18	19	16	14	13	11	10
10	44	32	26	21	39	29	23	19	23	19	16	18	15	12	12	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1501	1501	1501
5°	1502	1476	1486
10°	1486	1446	1437
15°	1465	1397	1362
20°	1437	1330	1270
25°	1408	1256	1181
30°	1370	1179	1068
35°	1332	1097	969
40°	1294	1012	856
45°	1250	918	753
50°	1204	823	653
55°	1156	722	557
60°	1100	616	458
65°	1036	509	411
70°	958	409	371
75°	860	358	337
80°	719	297	291
85°	487	194	215

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2016 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.7	1.1
10°-20°	336.9	3.0
20°-30°	473.1	4.2
30°-40°	515.7	4.6
40°-50°	473.9	4.2
50°-60°	372.2	3.3
60°-70°	242.3	2.1
70°-80°	124.7	1.1
80°-90°	37.0	0.3
90°-100°	97.0	0.9
100°-110°	361.5	3.2
110°-120°	958.7	8.5
120°-130°	1590.2	14.0
130°-140°	1689.1	14.9
140°-150°	1569.9	13.9
150°-160°	1262.1	11.1
160°-170°	813.3	7.2
170°-180°	279.9	2.5
0°-30°	932.7	8.2
0°-40°	1448.4	12.8
0°-60°	2294.6	20.3
0°-90°	2698.6	23.8
90°-120°	1417.2	12.5
90°-150°	6266.3	55.4
90°-180°	8622.0	76.2
0°-180°	11320.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1310	1310	1310	1310	1310	
5°	1310	1304	1288	1299	1296	124
15°	1246	1233	1192	1170	1158	351
25°	1131	1093	1014	966	948	520
35°	974	914	810	735	709	610
45°	796	717	593	508	480	615
55°	606	513	385	314	292	541
65°	409	313	206	166	162	405
75°	218	135	95	86	85	231
85°	51	26	22	22	22	58
90°	2	26	42	53	57	10
95°	138	68	83	94	92	164
105°	647	711	130	153	162	691
115°	1224	1260	1313	328	175	1205
125°	1730	1758	1798	1813	1819	1543
135°	2141	2175	2194	2215	2211	1654
145°	2484	2481	2517	2532	2522	1553
155°	2734	2715	2741	2754	2737	1260
165°	2881	2869	2875	2890	2875	814
175°	2947	2932	2936	2952	2930	280
180°	2941	2941	2941	2941	2941	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1309.6	1309.6	1309.6	1309.6	1309.6
2.5°	1315.6	1309.6	1296.6	1308.5	1306.1
5°	1309.6	1303.7	1288.2	1298.9	1295.5
7.5°	1298.9	1291.9	1275.3	1279.9	1274.1
10°	1284.8	1276.4	1252.8	1249.1	1242.1
12.5°	1267.0	1256.3	1224.2	1217.2	1204.1
15°	1245.6	1232.6	1192.3	1169.8	1158.0
17.5°	1220.8	1201.7	1151.9	1125.9	1106.9
20°	1192.3	1168.5	1109.3	1079.7	1053.6
22.5°	1161.5	1134.2	1065.4	1025.2	1007.5
25°	1130.7	1092.7	1014.5	966.0	948.1
27.5°	1094.0	1053.6	967.1	911.4	884.1
30°	1054.9	1009.7	914.9	854.5	822.5
32.5°	1016.9	962.3	865.2	794.1	764.4
35°	974.3	913.8	809.5	734.8	708.7
37.5°	932.8	867.5	757.3	675.5	645.9
40°	888.9	817.8	702.8	618.7	587.9
42.5°	843.8	768.0	648.3	560.5	531.0
45°	796.5	717.0	592.6	508.4	480.0
47.5°	751.5	667.3	539.3	455.1	429.0
50°	701.6	617.5	487.1	405.3	380.5
52.5°	653.0	564.1	437.4	359.1	336.6
55°	605.6	513.2	385.2	314.1	291.6
57.5°	557.1	462.2	339.0	272.6	253.7
60°	507.2	412.4	290.3	230.0	211.0
62.5°	458.8	363.9	248.8	192.0	182.6
65°	408.9	312.8	206.2	166.0	162.3
67.5°	361.6	265.5	166.0	145.8	142.2
70°	311.7	219.3	137.4	125.6	120.8
72.5°	264.4	176.6	114.9	105.5	103.1
75°	218.0	135.1	94.8	86.5	85.4
77.5°	171.9	95.9	74.7	69.9	67.5
80°	129.1	68.8	56.8	52.2	52.2
82.5°	90.1	46.3	39.1	36.7	36.7
85°	50.9	26.1	22.5	22.5	22.5
87.5°	19.0	9.4	9.4	8.3	8.3
90°	2.1	25.5	42.5	53.3	57.4
92.5°	53.3	44.8	51.0	55.4	57.4
95°	138.2	68.0	82.9	93.7	91.5
97.5°	248.9	74.5	108.4	114.9	117.0
100°	376.8	85.2	121.3	138.2	142.5
102.5°	517.0	512.9	125.6	148.9	155.4
105°	646.9	710.8	129.9	153.1	161.8
107.5°	798.0	851.0	134.2	157.4	166.0
110°	942.8	987.3	372.5	159.7	168.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1079.0	1117.1	1081.0	163.7	170.3
115°	1223.5	1259.6	1313.0	327.7	174.6
117.5°	1349.2	1391.6	1428.0	1123.5	566.0
120°	1489.6	1521.5	1559.9	1585.4	1298.1
122.5°	1608.7	1642.7	1685.4	1698.1	1700.4
125°	1730.0	1757.8	1798.2	1813.1	1819.4
127.5°	1840.6	1870.4	1902.5	1923.7	1925.8
130°	1945.0	1979.1	2002.3	2025.8	2023.9
132.5°	2051.4	2079.2	2102.4	2121.6	2119.6
135°	2140.9	2174.9	2193.9	2215.4	2211.1
137.5°	2234.3	2259.9	2281.3	2302.6	2296.2
140°	2325.8	2343.0	2366.2	2385.4	2374.8
142.5°	2402.6	2417.5	2445.1	2462.0	2451.4
145°	2483.5	2481.2	2517.3	2532.3	2521.7
147.5°	2553.5	2547.2	2583.3	2593.9	2585.6
150°	2621.7	2606.8	2640.9	2653.6	2643.0
152.5°	2679.1	2662.1	2694.0	2706.9	2692.0
155°	2734.5	2715.4	2740.9	2753.6	2736.7
157.5°	2779.1	2762.2	2781.4	2796.3	2779.1
160°	2817.6	2804.6	2817.6	2830.1	2815.3
162.5°	2851.4	2838.8	2849.4	2864.3	2845.1
165°	2881.2	2868.6	2874.9	2889.8	2874.9
167.5°	2904.7	2891.9	2898.4	2913.3	2894.2
170°	2923.9	2911.0	2915.3	2930.3	2911.0
172.5°	2936.5	2923.9	2928.2	2943.1	2923.9
175°	2947.2	2932.3	2936.5	2951.5	2930.3
177.5°	2951.5	2936.5	2938.8	2953.7	2934.6
180°	2940.9	2940.9	2940.9	2940.9	2940.9

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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	5.36	6.02	6.52	7.16	8.76	1.32	1.98	2.48	3.12	4.72
	3H	7.02	7.61	8.19	8.76	10.37	2.49	3.08	3.66	4.23	5.84
	4H	7.62	8.17	8.79	9.32	10.95	2.93	3.48	4.10	4.63	6.26
	6H	8.03	8.54	9.21	9.69	11.32	3.23	3.75	4.42	4.90	6.53
	8H	8.15	8.63	9.33	9.80	11.42	3.32	3.80	4.50	4.97	6.59
	12H	8.20	8.66	9.39	9.82	11.47	3.35	3.81	4.54	4.97	6.62
4H	2H	5.36	5.91	6.54	7.06	8.68	1.89	2.45	3.07	3.60	5.22
	3H	7.16	7.63	8.35	8.80	10.44	3.22	3.68	4.41	4.86	6.49
	4H	7.85	8.27	9.03	9.43	11.09	3.76	4.18	4.94	5.34	7.00
	6H	8.35	8.71	9.54	9.90	11.54	4.16	4.52	5.35	5.71	7.35
	8H	8.52	8.86	9.71	10.03	11.69	4.28	4.62	5.47	5.80	7.46
	12H	8.60	8.91	9.81	10.10	11.76	4.33	4.64	5.54	5.83	7.49
8H	4H	7.80	8.14	8.99	9.32	10.97	4.02	4.36	5.21	5.54	7.20
	6H	8.35	8.63	9.56	9.85	11.51	4.52	4.80	5.73	6.02	7.68
	8H	8.57	8.81	9.78	10.01	11.68	4.71	4.95	5.92	6.15	7.82
	12H	8.69	8.91	9.91	10.10	11.81	4.81	5.03	6.03	6.22	7.93
12H	4H	7.74	8.05	8.95	9.24	10.90	4.02	4.32	5.22	5.51	7.18
	6H	8.33	8.57	9.54	9.77	11.44	4.57	4.81	5.78	6.01	7.69
	8H	8.54	8.75	9.75	9.94	11.65	4.77	4.98	5.98	6.18	7.88

END OF REPORT