

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: P920047

Luminaire Tested: DFN2DIP-SQ3F0-050D110US935-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920047
REPORT IS A COMBINATION OF REPORTS P901510 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-050D110US935-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

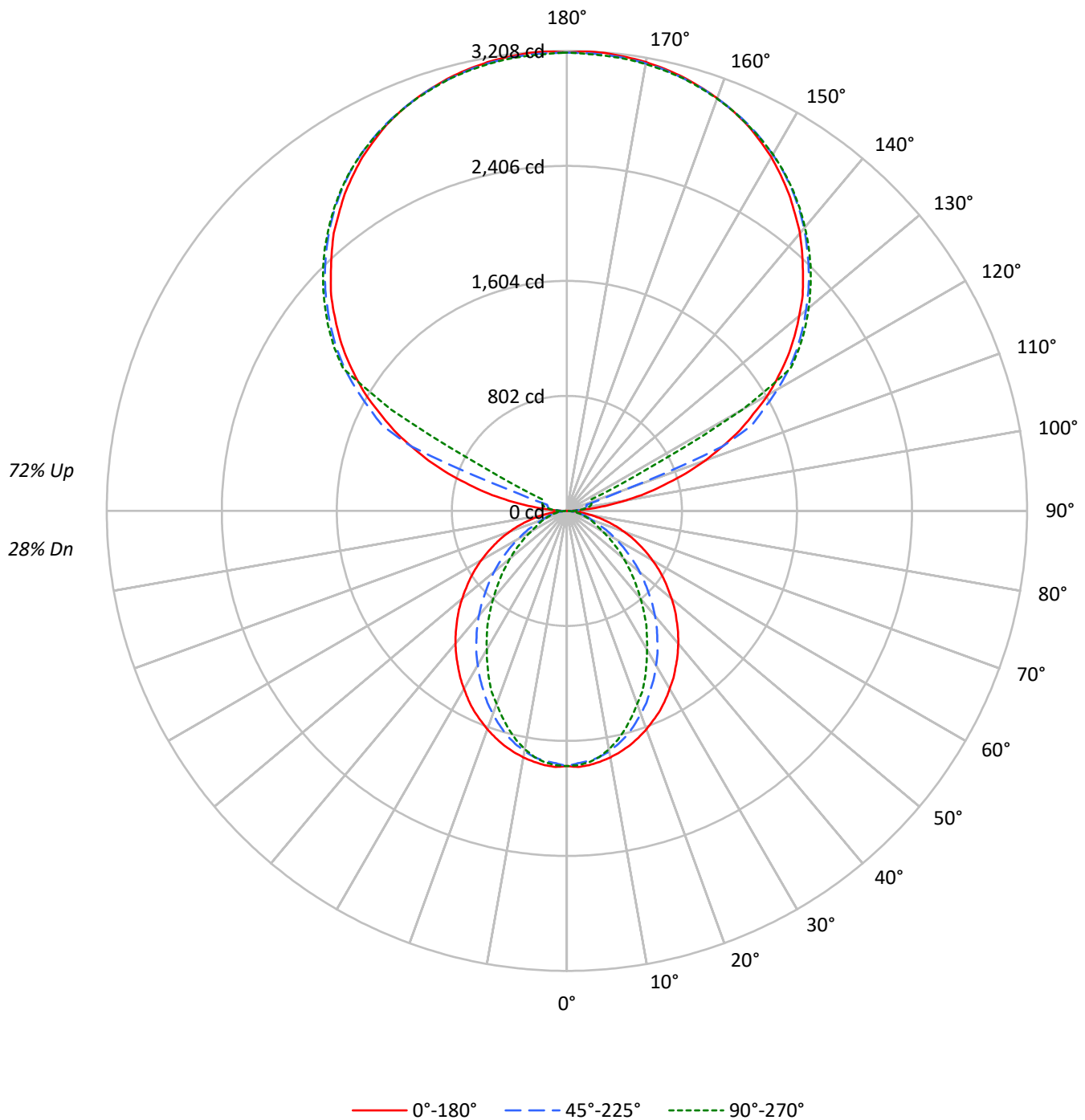
Lumens per Lamp: N/A
Luminaire Lumens: 13035.5 lumens
Efficiency: N/A
Efficacy: 101.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 128.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36
1	93	89	85	82	83	80	77	74	63	61	59	47	46	44	32	32	31
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	29	27	26
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	26	24	23
4	71	61	53	48	63	55	49	44	43	39	35	33	30	28	23	21	20
5	65	54	47	41	58	49	42	37	39	34	31	30	26	24	21	19	17
6	60	49	41	35	54	44	37	33	35	30	27	27	24	21	19	17	15
7	55	44	36	31	50	40	33	28	32	27	24	24	21	19	17	15	14
8	51	40	32	27	46	36	30	25	29	24	21	22	19	17	16	14	12
9	48	36	29	24	43	33	27	22	26	22	19	20	17	15	15	13	11
10	45	33	26	22	40	30	24	20	24	20	17	19	16	13	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2039	2039	2039
5°	2041	2005	2019
10°	2019	1964	1952
15°	1990	1898	1850
20°	1952	1807	1725
25°	1913	1706	1604
30°	1861	1602	1451
35°	1810	1490	1317
40°	1758	1375	1163
45°	1698	1247	1023
50°	1636	1118	887
55°	1570	981	756
60°	1495	837	622
65°	1408	691	559
70°	1302	555	505
75°	1169	486	458
80°	977	404	395
85°	663	263	293

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2188 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	166.8	1.3
10°-20°	457.8	3.5
20°-30°	642.7	4.9
30°-40°	700.6	5.4
40°-50°	643.9	4.9
50°-60°	505.7	3.9
60°-70°	329.2	2.5
70°-80°	169.5	1.3
80°-90°	48.9	0.4
90°-100°	105.4	0.8
100°-110°	392.9	3.0
110°-120°	1042.0	8.0
120°-130°	1728.3	13.3
130°-140°	1835.9	14.1
140°-150°	1706.2	13.1
150°-160°	1371.8	10.5
160°-170°	883.9	6.8
170°-180°	304.2	2.3
0°-30°	1267.2	9.7
0°-40°	1967.8	15.1
0°-60°	3117.4	23.9
0°-90°	3664.9	28.1
90°-120°	1540.3	11.8
90°-150°	6810.7	52.2
90°-180°	9371.0	71.9
0°-180°	13035.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1779	1779	1779	1779	1779	
5°	1779	1771	1750	1765	1760	169
15°	1692	1675	1620	1589	1573	477
25°	1536	1484	1378	1312	1288	706
35°	1324	1242	1100	998	963	828
45°	1082	974	805	691	652	836
55°	823	697	523	427	396	735
65°	556	425	280	226	221	551
75°	296	184	129	118	116	313
85°	69	35	31	31	31	79
90°	2	28	46	58	62	12
95°	150	74	90	102	99	178
105°	703	773	141	166	176	751
115°	1330	1369	1427	356	190	1309
125°	1880	1910	1954	1971	1978	1677
135°	2327	2364	2384	2408	2403	1797
145°	2699	2697	2736	2752	2741	1688
155°	2972	2951	2979	2993	2974	1370
165°	3132	3118	3125	3141	3125	885
175°	3203	3187	3192	3208	3185	305
180°	3196	3196	3196	3196	3196	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1779.3	1779.3	1779.3	1779.3	1779.3
2.5°	1787.3	1779.3	1761.5	1777.7	1774.4
5°	1779.3	1771.2	1750.2	1764.7	1760.0
7.5°	1764.7	1755.1	1732.6	1739.0	1730.9
10°	1745.4	1734.1	1702.0	1697.1	1687.5
12.5°	1721.3	1706.8	1663.3	1653.7	1635.9
15°	1692.3	1674.6	1619.9	1589.3	1573.2
17.5°	1658.5	1632.7	1565.0	1529.6	1503.8
20°	1619.9	1587.6	1507.1	1467.0	1431.4
22.5°	1578.0	1540.9	1447.5	1392.8	1368.7
25°	1536.1	1484.5	1378.3	1312.3	1288.1
27.5°	1486.3	1431.4	1313.9	1238.2	1201.2
30°	1433.1	1371.8	1243.0	1161.0	1117.4
32.5°	1381.6	1307.4	1175.5	1078.8	1038.5
35°	1323.6	1241.5	1099.8	998.3	962.9
37.5°	1267.2	1178.6	1029.0	917.7	877.6
40°	1207.6	1111.1	954.8	840.5	798.7
42.5°	1146.5	1043.4	880.8	761.6	721.4
45°	1082.1	974.1	805.1	690.7	652.0
47.5°	1020.9	906.6	732.7	618.3	582.9
50°	953.3	839.0	661.8	550.6	516.9
52.5°	887.2	766.4	594.2	487.9	457.4
55°	822.8	697.1	523.2	426.7	396.1
57.5°	756.8	628.0	460.5	370.4	344.6
60°	689.1	560.3	394.4	312.5	286.6
62.5°	623.2	494.4	338.1	260.9	248.1
65°	555.5	425.1	280.2	225.5	220.6
67.5°	491.1	360.7	225.5	198.0	193.2
70°	423.5	297.9	186.8	170.6	164.2
72.5°	359.1	239.9	156.2	143.4	140.1
75°	296.3	183.5	128.8	117.5	116.0
77.5°	233.5	130.4	101.5	95.0	91.7
80°	175.5	93.4	77.2	70.9	70.9
82.5°	122.3	62.9	53.1	49.9	49.9
85°	69.2	35.4	30.6	30.6	30.6
87.5°	25.8	12.8	12.8	11.3	11.3
90°	2.2	27.7	46.1	57.9	62.3
92.5°	57.9	48.6	55.4	60.2	62.3
95°	150.2	73.9	90.1	101.9	99.4
97.5°	270.5	81.0	117.8	124.9	127.2
100°	409.5	92.6	131.8	150.2	154.9
102.5°	561.9	557.5	136.5	161.8	168.9
105°	703.1	772.6	141.2	166.4	175.8
107.5°	867.4	925.0	145.9	171.1	180.5
110°	1024.7	1073.1	404.8	173.6	182.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1172.8	1214.2	1174.9	178.0	185.1
115°	1329.8	1369.1	1427.1	356.2	189.8
117.5°	1466.4	1512.5	1552.0	1221.1	615.2
120°	1619.0	1653.6	1695.4	1723.1	1410.8
122.5°	1748.4	1785.5	1831.9	1845.6	1848.1
125°	1880.2	1910.5	1954.4	1970.6	1977.5
127.5°	2000.5	2032.9	2067.8	2090.8	2093.1
130°	2113.9	2151.0	2176.3	2201.8	2199.7
132.5°	2229.6	2259.8	2285.1	2305.9	2303.8
135°	2326.8	2363.9	2384.4	2407.9	2403.1
137.5°	2428.4	2456.2	2479.5	2502.6	2495.7
140°	2527.9	2546.5	2571.8	2592.6	2581.1
142.5°	2611.3	2627.5	2657.5	2675.9	2664.4
145°	2699.2	2696.7	2736.0	2752.3	2740.7
147.5°	2775.3	2768.5	2807.7	2819.3	2810.2
150°	2849.5	2833.3	2870.3	2884.1	2872.5
152.5°	2911.8	2893.4	2928.0	2942.0	2925.8
155°	2972.0	2951.3	2979.1	2992.8	2974.4
157.5°	3020.6	3002.1	3023.0	3039.2	3020.6
160°	3062.3	3048.3	3062.3	3076.0	3059.8
162.5°	3099.1	3085.4	3096.9	3113.1	3092.3
165°	3131.5	3117.8	3124.6	3140.8	3124.6
167.5°	3157.0	3143.1	3150.2	3166.4	3145.6
170°	3177.9	3163.9	3168.6	3184.8	3163.9
172.5°	3191.6	3177.9	3182.6	3198.8	3177.9
175°	3203.2	3187.0	3191.6	3207.9	3184.8
177.5°	3207.9	3191.6	3194.1	3210.3	3189.5
180°	3196.4	3196.4	3196.4	3196.4	3196.4

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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	7.09	7.77	8.22	8.89	10.44	3.05	3.73	4.18	4.85	6.40
	3H	8.75	9.36	9.89	10.48	12.06	4.22	4.83	5.36	5.95	7.53
	4H	9.35	9.93	10.50	11.05	12.63	4.66	5.24	5.81	6.36	7.94
	6H	9.76	10.29	10.91	11.42	13.01	4.97	5.50	6.12	6.63	8.21
	8H	9.88	10.38	11.04	11.53	13.11	5.05	5.55	6.21	6.70	8.28
	12H	9.93	10.41	11.10	11.55	13.15	5.09	5.56	6.25	6.70	8.30
4H	2H	7.09	7.66	8.24	8.79	10.37	3.63	4.20	4.78	5.33	6.90
	3H	8.90	9.38	10.06	10.53	12.12	4.95	5.43	6.11	6.59	8.17
	4H	9.58	10.02	10.74	11.16	12.77	5.49	5.93	6.65	7.07	8.68
	6H	10.08	10.46	11.25	11.62	13.22	5.89	6.27	7.06	7.44	9.03
	8H	10.25	10.60	11.42	11.76	13.37	6.02	6.37	7.18	7.52	9.14
	12H	10.34	10.66	11.52	11.82	13.44	6.07	6.39	7.25	7.56	9.18
8H	4H	9.54	9.89	10.70	11.04	12.66	5.76	6.11	6.92	7.26	8.88
	6H	10.09	10.38	11.28	11.58	13.19	6.26	6.55	7.45	7.75	9.36
	8H	10.30	10.56	11.49	11.73	13.36	6.45	6.70	7.64	7.88	9.51
	12H	10.43	10.65	11.63	11.83	13.49	6.55	6.78	7.75	7.95	9.61
12H	4H	9.48	9.80	10.66	10.97	12.58	5.75	6.07	6.94	7.24	8.86
	6H	10.06	10.32	11.26	11.49	13.12	6.31	6.56	7.50	7.74	9.37
	8H	10.27	10.50	11.47	11.67	13.33	6.51	6.73	7.70	7.90	9.57

END OF REPORT