

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: P920050

Luminaire Tested: DFN2DIP-SQ3F0-050D120US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920050
REPORT IS A COMBINATION OF REPORTS P900008 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-050D120US935-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

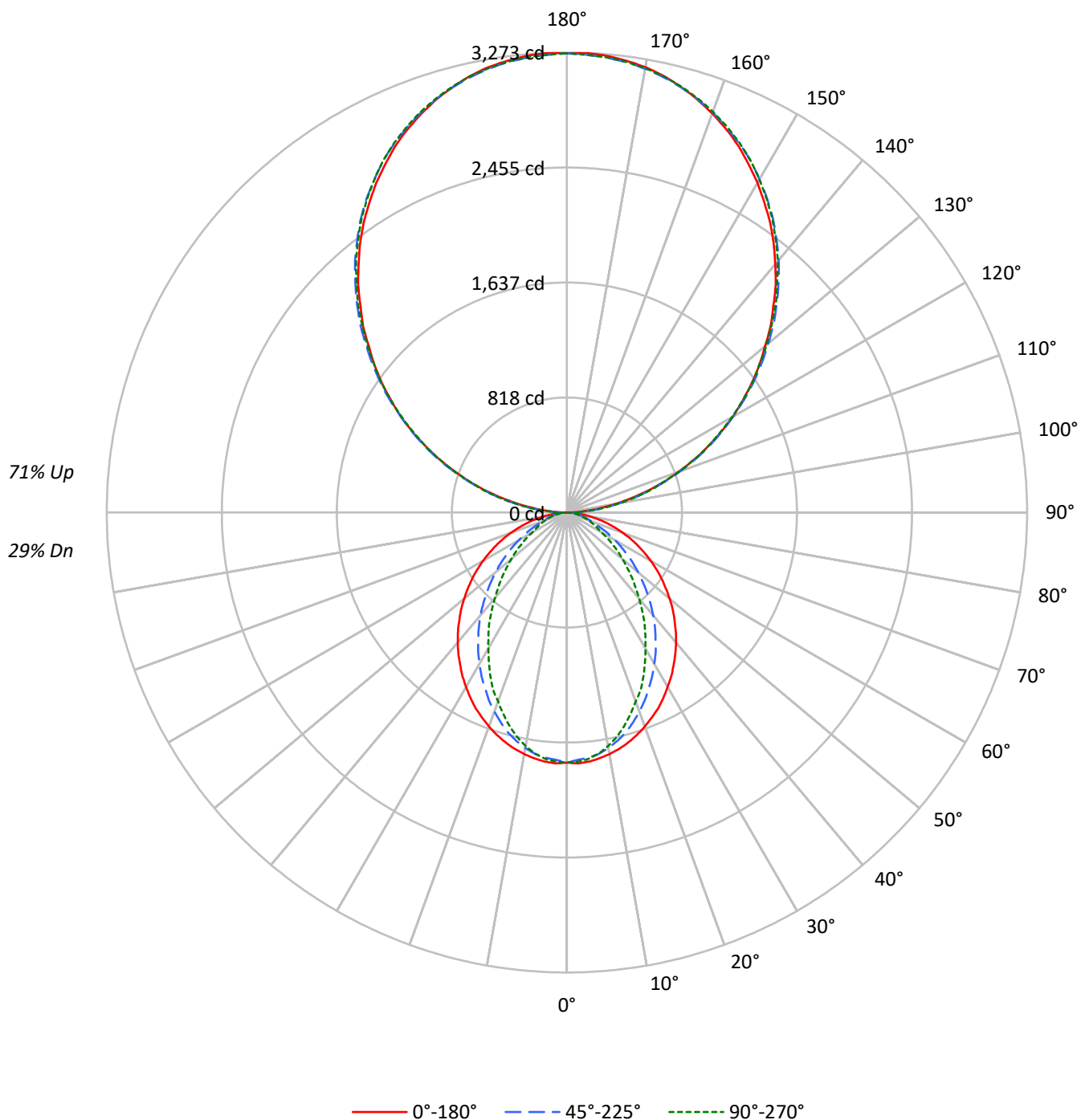
Lumens per Lamp: N/A
Luminaire Lumens: 12803.0 lumens
Efficiency: N/A
Efficacy: 93.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 136.3
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	37	37	37
1	93	89	86	82	83	80	77	74	63	61	59	47	46	45	33	32	31
2	85	78	72	68	76	70	65	61	55	52	49	42	40	38	29	28	27
3	78	69	62	56	69	62	56	51	49	45	42	37	34	32	26	24	23
4	71	61	54	48	64	55	49	44	44	39	36	33	30	28	23	22	20
5	65	54	47	41	58	49	42	38	39	34	31	30	27	24	21	19	18
6	60	49	41	36	54	44	37	33	35	30	27	27	24	21	19	17	16
7	56	44	36	31	50	40	33	29	32	27	24	25	21	19	18	16	14
8	52	40	32	27	46	36	30	25	29	24	21	22	19	17	16	14	13
9	48	36	29	24	43	33	27	22	27	22	19	21	17	15	15	13	11
10	45	33	26	22	40	30	24	20	24	20	17	19	16	14	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: 3287 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	166.8	1.3
10°-20°	457.8	3.6
20°-30°	642.7	5.0
30°-40°	700.6	5.5
40°-50°	643.9	5.0
50°-60°	505.7	3.9
60°-70°	329.2	2.6
70°-80°	169.5	1.3
80°-90°	52.5	0.4
90°-100°	202.2	1.6
100°-110°	642.4	5.0
110°-120°	1099.4	8.6
120°-130°	1445.9	11.3
130°-140°	1623.0	12.7
140°-150°	1591.6	12.4
150°-160°	1335.1	10.4
160°-170°	885.4	6.9
170°-180°	309.5	2.4
0°-30°	1267.2	9.9
0°-40°	1967.8	15.4
0°-60°	3117.4	24.3
0°-90°	3668.5	28.7
90°-120°	1944.1	15.2
90°-150°	6604.6	51.6
90°-180°	9134.0	71.3
0°-180°	12803.0	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°	3	36	96	91	94	13
95°	144	171	176	176	171	160
105°	593	601	607	612	612	626
115°	1103	1119	1114	1111	1103	1091
125°	1605	1629	1622	1613	1610	1434
135°	2076	2106	2112	2109	2101	1604
145°	2520	2540	2555	2558	2548	1574
155°	2881	2889	2898	2912	2903	1326
165°	3135	3132	3132	3151	3138	884
175°	3262	3254	3248	3268	3251	310
180°	3268	3268	3268	3268	3268	

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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°	2.9	35.5	96.5	90.7	93.6
92.5°	61.0	82.7	85.7	88.7	88.7
95°	143.8	171.4	176.3	176.3	171.4
97.5°	239.4	265.0	275.9	275.9	275.9
100°	349.7	372.4	380.2	380.2	377.3
102.5°	466.0	482.7	493.5	496.5	493.5
105°	593.1	600.9	606.8	611.7	611.7
107.5°	719.1	731.0	731.0	732.9	719.1
110°	841.3	857.0	857.0	857.0	849.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	973.3	990.1	987.0	979.2	973.3
115°	1103.3	1119.1	1114.1	1111.2	1103.3
117.5°	1232.3	1254.0	1240.3	1232.3	1224.5
120°	1362.4	1384.1	1362.4	1362.4	1353.6
122.5°	1480.7	1508.2	1494.4	1486.5	1480.7
125°	1604.7	1629.4	1621.5	1612.6	1609.6
127.5°	1726.0	1756.4	1745.6	1733.8	1726.0
130°	1839.2	1874.7	1869.7	1863.8	1853.0
132.5°	1966.3	1993.9	1995.8	1982.0	1974.2
135°	2075.6	2106.2	2112.1	2109.1	2101.3
137.5°	2197.8	2222.4	2227.3	2225.3	2213.5
140°	2305.1	2329.8	2343.6	2343.6	2332.7
142.5°	2415.5	2440.2	2448.0	2450.9	2440.2
145°	2519.9	2539.6	2555.4	2558.4	2547.5
147.5°	2613.5	2638.1	2650.0	2654.9	2644.0
150°	2710.1	2726.8	2737.6	2746.5	2737.6
152.5°	2795.7	2812.4	2826.3	2837.2	2826.3
155°	2881.4	2889.3	2898.2	2912.0	2903.1
157.5°	2955.4	2961.2	2966.1	2985.9	2972.1
160°	3021.3	3027.3	3030.2	3047.0	3035.1
162.5°	3082.4	3082.4	3085.4	3104.1	3090.3
165°	3134.6	3131.7	3131.7	3151.3	3137.6
167.5°	3181.9	3173.0	3173.0	3192.8	3179.0
170°	3217.4	3209.5	3206.5	3226.2	3209.5
172.5°	3242.0	3234.1	3231.2	3250.9	3234.1
175°	3261.7	3253.8	3247.9	3267.6	3250.9
177.5°	3272.6	3264.6	3258.7	3275.5	3258.7
180°	3267.6	3267.6	3267.6	3267.6	3267.6

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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	7.16	7.85	8.29	8.96	10.51	3.12	3.81	4.25	4.92	6.47
	3H	8.83	9.43	9.96	10.56	12.12	4.30	4.90	5.43	6.03	7.59
	4H	9.42	10.00	10.57	11.13	12.70	4.73	5.31	5.88	6.44	8.01
	6H	9.83	10.37	10.99	11.49	13.07	5.04	5.57	6.19	6.70	8.28
	8H	9.95	10.46	11.11	11.60	13.18	5.12	5.63	6.28	6.77	8.35
	12H	10.01	10.49	11.17	11.62	13.22	5.16	5.64	6.32	6.78	8.37
4H	2H	7.16	7.74	8.31	8.86	10.43	3.70	4.28	4.85	5.40	6.97
	3H	8.97	9.45	10.13	10.60	12.19	5.03	5.51	6.18	6.66	8.24
	4H	9.65	10.10	10.81	11.24	12.84	5.56	6.01	6.72	7.15	8.75
	6H	10.16	10.54	11.32	11.70	13.29	5.97	6.35	7.13	7.51	9.10
	8H	10.33	10.68	11.49	11.83	13.44	6.09	6.45	7.25	7.60	9.21
	12H	10.41	10.73	11.59	11.90	13.51	6.15	6.47	7.32	7.63	9.24
8H	4H	9.61	9.96	10.77	11.12	12.72	5.83	6.18	6.99	7.34	8.95
	6H	10.17	10.46	11.35	11.65	13.26	6.34	6.63	7.52	7.82	9.43
	8H	10.38	10.63	11.57	11.81	13.43	6.52	6.78	7.71	7.95	9.57
	12H	10.51	10.73	11.70	11.90	13.56	6.63	6.85	7.82	8.02	9.68
12H	4H	9.55	9.88	10.73	11.04	12.65	5.83	6.15	7.01	7.31	8.93
	6H	10.14	10.39	11.33	11.57	13.19	6.38	6.64	7.57	7.81	9.44
	8H	10.35	10.57	11.54	11.74	13.40	6.58	6.80	7.77	7.98	9.63