

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: P925501

Luminaire Tested: DFN2DIP-SQ3F0-050D110US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925501
REPORT IS A COMBINATION OF REPORTS P901509 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-050D110US950-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

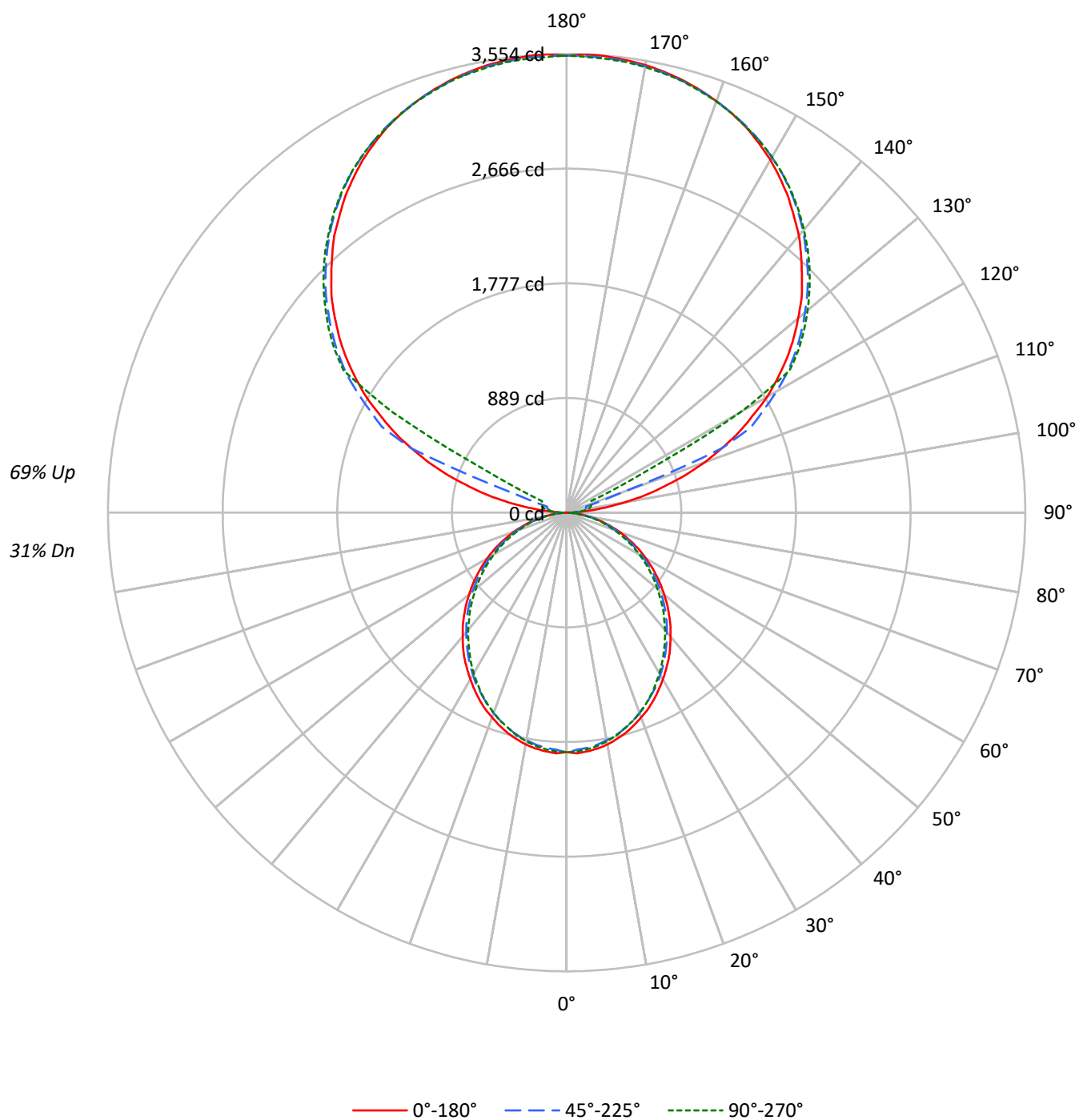
Lumens per Lamp: N/A
Luminaire Lumens: 15111.3 lumens
Efficiency: N/A
Efficacy: 118.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

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	103	103	103	103	92	92	92	92	73	73	73	55	55	55	39	39	39
1	94	89	86	82	84	80	77	74	64	62	60	48	47	46	34	34	33
2	85	78	72	67	76	70	65	61	56	52	49	43	40	38	30	29	28
3	78	69	61	56	70	62	56	51	49	45	41	38	35	32	27	25	24
4	71	61	53	47	64	55	48	43	44	39	35	33	30	28	24	22	20
5	65	54	46	40	58	49	42	37	39	34	30	30	27	24	22	19	18
6	60	48	40	35	54	44	37	32	35	30	26	27	24	21	20	17	15
7	55	43	36	30	50	39	33	28	32	27	23	25	21	18	18	15	14
8	51	39	32	27	46	36	29	24	29	24	20	22	19	16	16	14	12
9	48	36	28	24	43	32	26	22	26	22	18	21	17	15	15	13	11
10	44	33	26	21	40	30	24	19	24	19	16	19	16	13	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2127	2127	2127
5°	2129	2096	2111
10°	2110	2066	2081
15°	2078	2030	2036
20°	2034	1982	1989
25°	1991	1924	1936
30°	1938	1870	1868
35°	1887	1806	1796
40°	1824	1742	1728
45°	1762	1678	1658
50°	1693	1610	1577
55°	1622	1532	1502
60°	1541	1439	1417
65°	1452	1343	1316
70°	1339	1226	1208
75°	1183	1085	1106
80°	994	905	914
85°	700	599	598

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2427 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.7	1.2
10°-20°	491.5	3.3
20°-30°	722.3	4.8
30°-40°	838.9	5.6
40°-50°	837.9	5.5
50°-60°	730.6	4.8
60°-70°	540.1	3.6
70°-80°	305.6	2.0
80°-90°	86.9	0.6
90°-100°	116.8	0.8
100°-110°	435.4	2.9
110°-120°	1154.6	7.6
120°-130°	1915.0	12.7
130°-140°	2034.2	13.5
140°-150°	1890.5	12.5
150°-160°	1519.9	10.1
160°-170°	979.4	6.5
170°-180°	337.1	2.2
0°-30°	1388.5	9.2
0°-40°	2227.5	14.7
0°-60°	3796.0	25.1
0°-90°	4728.5	31.3
90°-120°	1706.7	11.3
90°-150°	7546.4	49.9
90°-180°	10383.0	68.7
0°-180°	15111.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1856	1856	1856	1856	1856	
5°	1856	1849	1829	1844	1840	176
15°	1767	1756	1733	1740	1731	498
25°	1599	1585	1554	1558	1554	736
35°	1380	1362	1333	1322	1314	862
45°	1123	1110	1083	1064	1057	866
55°	850	839	817	796	787	760
65°	573	562	544	528	519	567
75°	300	296	287	277	280	320
85°	73	71	70	64	62	82
90°	2	31	51	64	69	14
95°	166	82	100	113	110	197
105°	779	856	156	184	195	832
115°	1474	1517	1581	395	210	1451
125°	2083	2117	2166	2183	2191	1858
135°	2578	2619	2642	2668	2663	1992
145°	2991	2988	3032	3050	3037	1871
155°	3293	3270	3301	3316	3296	1517
165°	3470	3454	3462	3480	3462	980
175°	3549	3531	3536	3554	3529	338
180°	3542	3542	3542	3542	3542	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1856.0	1856.0	1856.0	1856.0	1856.0
2.5°	1866.8	1857.9	1838.3	1856.0	1852.7
5°	1856.0	1849.0	1829.3	1843.5	1840.2
7.5°	1843.5	1832.9	1813.3	1827.7	1824.0
10°	1824.0	1811.6	1790.2	1804.3	1799.1
12.5°	1797.1	1786.6	1765.2	1774.1	1770.4
15°	1766.8	1756.2	1732.9	1740.2	1731.2
17.5°	1729.3	1718.7	1695.4	1704.3	1695.4
20°	1688.3	1677.7	1652.7	1658.0	1651.0
22.5°	1647.4	1631.2	1608.0	1608.0	1604.3
25°	1599.1	1584.9	1554.5	1558.0	1554.5
27.5°	1545.5	1533.0	1509.9	1504.6	1495.7
30°	1492.1	1477.7	1451.0	1445.7	1438.5
32.5°	1434.9	1424.3	1395.7	1384.9	1377.8
35°	1379.6	1361.8	1333.2	1322.4	1313.6
37.5°	1317.1	1301.1	1272.4	1259.9	1251.1
40°	1253.0	1238.6	1210.0	1194.0	1186.9
42.5°	1190.5	1176.1	1147.7	1129.6	1119.0
45°	1122.7	1110.2	1083.3	1063.8	1056.6
47.5°	1056.6	1044.1	1015.5	995.8	985.2
50°	986.9	978.0	953.0	928.1	919.1
52.5°	919.1	906.6	883.5	863.8	851.3
55°	849.6	838.9	817.4	796.0	787.1
57.5°	779.9	771.0	747.7	726.4	719.1
60°	710.3	703.3	678.3	658.5	653.3
62.5°	642.5	630.0	612.2	594.3	587.2
65°	573.0	562.2	544.4	528.3	519.4
67.5°	501.6	492.6	476.6	464.1	456.9
70°	435.5	428.3	412.2	399.7	392.8
72.5°	367.8	360.5	351.6	339.1	333.8
75°	299.7	296.3	287.2	276.7	280.3
77.5°	239.2	231.9	228.4	223.0	217.8
80°	178.6	176.7	173.1	167.8	164.2
82.5°	121.3	121.3	119.6	112.5	112.5
85°	73.1	71.4	69.6	64.2	62.5
87.5°	32.1	28.6	25.0	19.7	17.8
90°	2.5	30.7	51.1	64.2	69.1
92.5°	64.2	53.9	61.4	66.7	69.1
95°	166.5	81.9	99.8	112.9	110.2
97.5°	299.7	89.8	130.5	138.4	140.9
100°	453.7	102.6	146.1	166.5	171.6
102.5°	622.6	617.7	151.2	179.3	187.2
105°	779.0	856.0	156.5	184.4	194.8
107.5°	961.1	1024.9	161.6	189.6	200.0
110°	1135.4	1189.0	448.6	192.3	202.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1299.4	1345.3	1301.8	197.2	205.1
115°	1473.5	1517.0	1581.3	394.7	210.3
117.5°	1624.8	1675.9	1719.7	1353.0	681.6
120°	1793.9	1832.3	1878.5	1909.2	1563.2
122.5°	1937.3	1978.3	2029.7	2045.0	2047.8
125°	2083.3	2116.8	2165.5	2183.4	2191.1
127.5°	2216.6	2252.5	2291.1	2316.7	2319.2
130°	2342.3	2383.4	2411.3	2439.7	2437.3
132.5°	2470.4	2503.9	2531.9	2555.0	2552.6
135°	2578.2	2619.2	2642.0	2668.0	2662.7
137.5°	2690.8	2721.5	2747.3	2772.9	2765.3
140°	2800.9	2821.6	2849.6	2872.7	2859.9
142.5°	2893.4	2911.3	2944.5	2964.9	2952.2
145°	2990.8	2988.0	3031.5	3049.6	3036.8
147.5°	3075.1	3067.5	3111.0	3123.8	3113.8
150°	3157.3	3139.3	3180.3	3195.6	3182.8
152.5°	3226.3	3205.9	3244.3	3259.8	3241.9
155°	3293.0	3270.1	3300.8	3316.1	3295.7
157.5°	3346.8	3326.4	3349.6	3367.5	3346.8
160°	3393.1	3377.5	3393.1	3408.3	3390.3
162.5°	3433.8	3418.7	3431.4	3449.4	3426.3
165°	3469.8	3454.5	3462.2	3480.1	3462.2
167.5°	3498.0	3482.6	3490.5	3508.4	3485.3
170°	3521.2	3505.7	3510.8	3528.8	3505.7
172.5°	3536.4	3521.2	3526.4	3544.3	3521.2
175°	3549.2	3531.2	3536.4	3554.4	3528.8
177.5°	3554.4	3536.4	3539.1	3557.1	3534.0
180°	3541.6	3541.6	3541.6	3541.6	3541.6

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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	7.82	8.53	8.92	9.63	11.15	7.37	8.09	8.48	9.19	10.70
	3H	9.46	10.10	10.58	11.21	12.74	8.97	9.61	10.09	10.72	12.25
	4H	10.04	10.65	11.16	11.76	13.30	9.55	10.16	10.67	11.26	12.80
	6H	10.43	10.99	11.56	12.10	13.65	9.93	10.49	11.06	11.60	13.15
	8H	10.53	11.06	11.66	12.19	13.73	10.03	10.56	11.16	11.69	13.23
	12H	10.57	11.08	11.71	12.20	13.76	10.06	10.57	11.20	11.69	13.25
4H	2H	8.26	8.87	9.39	9.97	11.51	7.90	8.51	9.03	9.62	11.16
	3H	10.11	10.61	11.24	11.75	13.30	9.70	10.20	10.83	11.34	12.89
	4H	10.81	11.28	11.95	12.40	13.97	10.39	10.85	11.52	11.98	13.55
	6H	11.31	11.71	12.46	12.86	14.42	10.88	11.28	12.02	12.43	13.99
	8H	11.46	11.83	12.60	12.97	14.55	11.02	11.39	12.16	12.53	14.11
	12H	11.52	11.86	12.68	13.01	14.59	11.07	11.41	12.23	12.56	14.14
8H	4H	10.99	11.36	12.13	12.50	14.08	10.61	10.99	11.76	12.13	13.70
	6H	11.61	11.92	12.77	13.10	14.67	11.23	11.53	12.39	12.71	14.29
	8H	11.82	12.09	13.00	13.25	14.85	11.43	11.70	12.60	12.86	14.46
	12H	11.95	12.18	13.12	13.34	14.97	11.54	11.77	12.71	12.93	14.56
12H	4H	10.97	11.31	12.13	12.46	14.04	10.60	10.94	11.76	12.09	13.67
	6H	11.64	11.91	12.81	13.06	14.66	11.26	11.53	12.43	12.69	14.29
	8H	11.87	12.10	13.04	13.26	14.89	11.49	11.72	12.66	12.88	14.51

END OF REPORT