

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: P920087

Luminaire Tested: DFN2DIP-SQ3F0-060D120US935-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920087
REPORT IS A COMBINATION OF REPORTS P901530 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-060D120US935-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

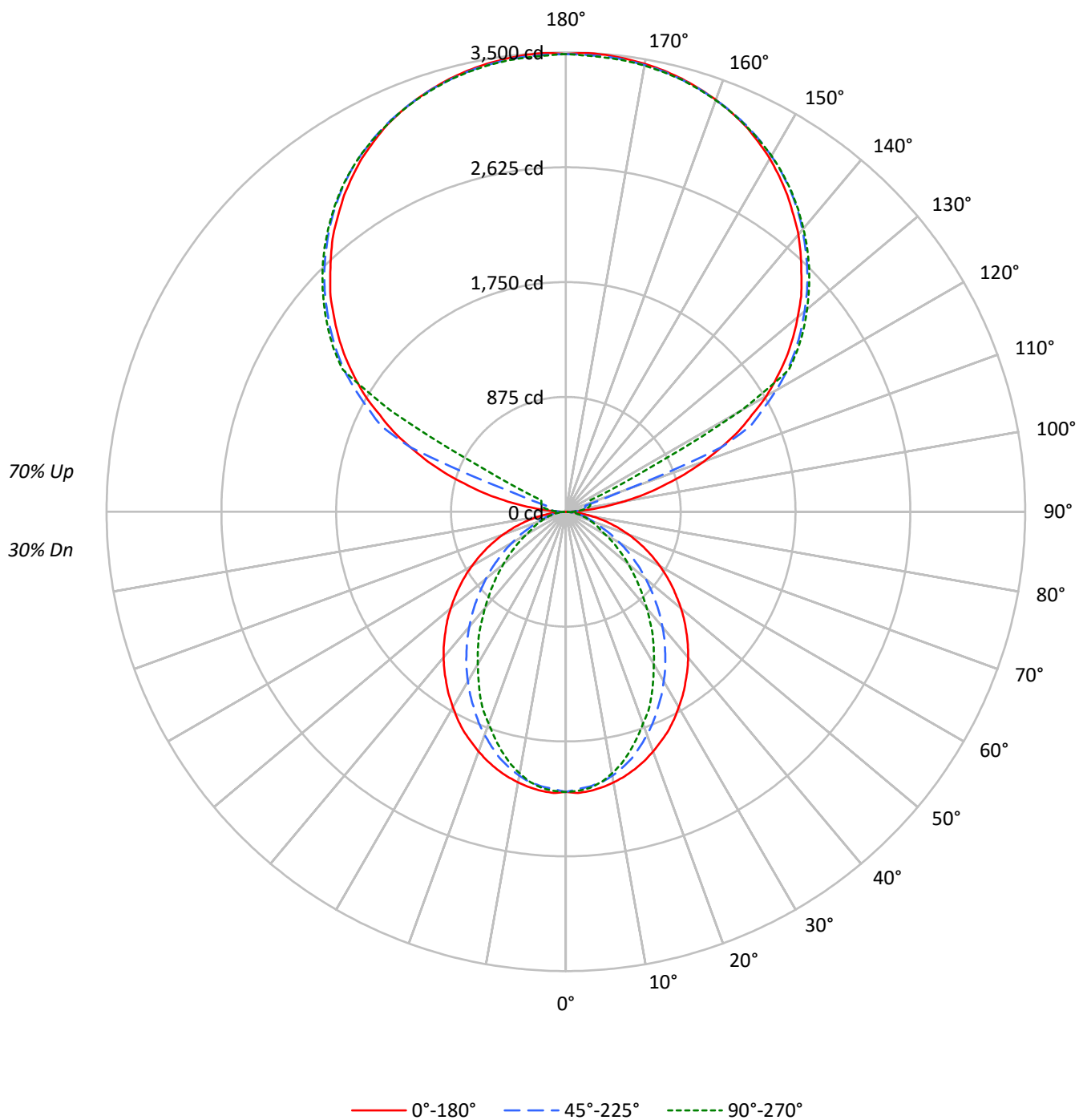
Lumens per Lamp: N/A
Luminaire Lumens: 14619.7 lumens
Efficiency: N/A
Efficacy: 99.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 147.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38
1	94	90	86	83	84	81	77	75	64	62	60	48	47	46	34	33	32
2	85	78	73	68	76	71	66	62	56	53	50	43	40	39	30	29	28
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	25	24
4	71	61	54	48	64	55	49	44	44	40	36	34	31	28	24	22	21
5	66	55	47	41	59	49	43	38	40	35	31	30	27	25	22	20	18
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15
8	52	40	33	28	46	36	30	25	29	25	21	23	20	17	17	15	13
9	48	37	29	25	43	33	27	23	27	22	19	21	18	15	16	13	12
10	45	33	27	22	40	30	24	20	25	20	17	20	16	14	14	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2446	2446	2446
5°	2449	2406	2422
10°	2423	2357	2343
15°	2388	2278	2220
20°	2342	2169	2070
25°	2296	2047	1925
30°	2233	1922	1741
35°	2172	1788	1580
40°	2110	1650	1395
45°	2038	1497	1228
50°	1963	1342	1064
55°	1884	1177	907
60°	1794	1005	746
65°	1689	829	671
70°	1562	666	606
75°	1403	583	549
80°	1172	484	474
85°	795	316	351

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2388 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	200.1	1.4
10°-20°	549.3	3.8
20°-30°	771.2	5.3
30°-40°	840.7	5.8
40°-50°	772.7	5.3
50°-60°	606.8	4.2
60°-70°	395.0	2.7
70°-80°	203.3	1.4
80°-90°	58.0	0.4
90°-100°	115.0	0.8
100°-110°	428.6	2.9
110°-120°	1136.8	7.8
120°-130°	1885.4	12.9
130°-140°	2002.8	13.7
140°-150°	1861.3	12.7
150°-160°	1496.5	10.2
160°-170°	964.3	6.6
170°-180°	331.9	2.3
0°-30°	1520.7	10.4
0°-40°	2361.4	16.2
0°-60°	3740.9	25.6
0°-90°	4397.2	30.1
90°-120°	1680.4	11.5
90°-150°	7429.9	50.8
90°-180°	10223.0	69.9
0°-180°	14619.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2135	2135	2135	2135	2135	
5°	2135	2126	2100	2118	2112	202
15°	2031	2009	1944	1907	1888	572
25°	1843	1782	1654	1575	1546	848
35°	1588	1490	1320	1198	1155	994
45°	1298	1169	966	829	782	1003
55°	987	837	628	512	475	882
65°	667	510	336	271	265	661
75°	356	220	154	141	139	376
85°	83	42	37	37	37	95
90°	2	30	50	63	68	14
95°	164	81	98	111	108	194
105°	767	843	154	182	192	820
115°	1451	1494	1557	389	207	1428
125°	2051	2084	2132	2150	2157	1829
135°	2538	2579	2601	2627	2622	1961
145°	2945	2942	2985	3002	2990	1842
155°	3242	3220	3250	3265	3245	1494
165°	3416	3401	3409	3426	3409	965
175°	3494	3477	3482	3500	3474	333
180°	3487	3487	3487	3487	3487	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2135.1	2135.1	2135.1	2135.1	2135.1
2.5°	2144.7	2135.1	2113.7	2133.2	2129.3
5°	2135.1	2125.5	2100.2	2117.7	2111.9
7.5°	2117.7	2106.2	2079.1	2086.7	2077.1
10°	2094.5	2080.9	2042.5	2036.5	2025.0
12.5°	2065.6	2048.1	1995.9	1984.4	1963.1
15°	2030.7	2009.4	1943.8	1907.1	1887.8
17.5°	1990.2	1959.2	1878.0	1835.6	1804.7
20°	1943.8	1905.0	1808.5	1760.3	1717.7
22.5°	1893.6	1849.1	1737.0	1671.4	1642.4
25°	1843.4	1781.5	1654.0	1574.9	1545.7
27.5°	1783.6	1717.7	1576.7	1485.8	1441.4
30°	1719.8	1646.1	1491.6	1393.2	1340.9
32.5°	1657.9	1568.9	1410.7	1294.6	1246.2
35°	1588.4	1489.8	1319.8	1198.0	1155.4
37.5°	1520.7	1414.3	1234.8	1101.3	1053.1
40°	1449.1	1333.3	1145.7	1008.6	958.4
42.5°	1375.8	1252.1	1057.0	913.9	865.7
45°	1298.5	1168.9	966.2	828.8	782.5
47.5°	1225.1	1088.0	879.3	741.9	699.5
50°	1143.9	1006.8	794.2	660.7	620.3
52.5°	1064.5	919.6	713.0	585.5	548.8
55°	987.3	836.6	627.9	512.1	475.4
57.5°	908.2	753.5	552.7	444.4	413.5
60°	827.0	672.4	473.4	375.0	344.0
62.5°	747.9	593.3	405.7	313.1	297.6
65°	666.7	510.1	336.2	270.6	264.7
67.5°	589.4	432.7	270.6	237.6	231.9
70°	508.2	357.5	224.0	204.8	197.0
72.5°	430.9	287.8	187.4	172.0	168.1
75°	355.5	220.2	154.5	141.0	139.2
77.5°	280.3	156.4	121.7	114.0	110.1
80°	210.5	112.1	92.6	85.1	85.1
82.5°	146.8	75.4	63.7	59.8	59.8
85°	83.0	42.4	36.7	36.7	36.7
87.5°	31.0	15.4	15.4	13.5	13.5
90°	2.4	30.2	50.4	63.2	68.0
92.5°	63.2	53.0	60.5	65.6	68.0
95°	163.8	80.6	98.2	111.2	108.5
97.5°	295.2	88.4	128.5	136.3	138.7
100°	446.7	101.0	143.8	163.8	169.0
102.5°	613.0	608.2	148.9	176.5	184.3
105°	767.0	842.8	154.0	181.6	191.7
107.5°	946.2	1009.1	159.1	186.7	196.8
110°	1117.8	1170.6	441.6	189.3	199.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1279.4	1324.6	1281.8	194.2	201.9
115°	1450.7	1493.6	1556.8	388.6	207.1
117.5°	1599.6	1650.0	1693.2	1332.0	671.1
120°	1766.3	1804.0	1849.5	1879.8	1539.1
122.5°	1907.4	1947.8	1998.5	2013.4	2016.1
125°	2051.2	2084.1	2132.1	2149.7	2157.2
127.5°	2182.4	2217.8	2255.8	2281.0	2283.4
130°	2306.1	2346.6	2374.1	2402.0	2399.6
132.5°	2432.2	2465.2	2492.8	2515.6	2513.2
135°	2538.3	2578.8	2601.2	2626.7	2621.7
137.5°	2649.2	2679.4	2704.9	2730.1	2722.6
140°	2757.7	2778.0	2805.6	2828.4	2815.8
142.5°	2848.7	2866.4	2899.1	2919.1	2906.6
145°	2944.6	2941.9	2984.7	3002.5	2989.8
147.5°	3027.6	3020.1	3063.0	3075.6	3065.7
150°	3108.5	3090.8	3131.3	3146.3	3133.7
152.5°	3176.5	3156.4	3194.2	3209.5	3191.8
155°	3242.1	3219.6	3249.9	3264.9	3244.8
157.5°	3295.1	3275.1	3297.9	3315.5	3295.1
160°	3340.7	3325.4	3340.7	3355.7	3338.0
162.5°	3380.9	3365.9	3378.5	3396.1	3373.4
165°	3416.2	3401.2	3408.7	3426.4	3408.7
167.5°	3444.1	3428.8	3436.6	3454.2	3431.5
170°	3466.8	3451.6	3456.6	3474.3	3451.6
172.5°	3481.8	3466.8	3472.0	3489.6	3466.8
175°	3494.4	3476.7	3481.8	3499.5	3474.3
177.5°	3499.5	3481.8	3484.5	3502.2	3479.5
180°	3487.0	3487.0	3487.0	3487.0	3487.0

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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	8.00	8.69	9.12	9.80	11.33	3.96	4.65	5.08	5.76	7.29
	3H	9.66	10.28	10.79	11.39	12.94	5.13	5.75	6.26	6.86	8.41
	4H	10.26	10.85	11.39	11.96	13.52	5.57	6.16	6.71	7.27	8.83
	6H	10.67	11.21	11.81	12.33	13.89	5.88	6.42	7.02	7.54	9.10
	8H	10.79	11.30	11.94	12.44	14.00	5.96	6.47	7.11	7.61	9.17
	12H	10.85	11.33	12.00	12.46	14.04	6.00	6.48	7.15	7.61	9.19
4H	2H	8.00	8.58	9.14	9.70	11.25	4.54	5.12	5.68	6.24	7.79
	3H	9.81	10.30	10.96	11.44	13.01	5.87	6.35	7.01	7.50	9.06
	4H	10.49	10.94	11.64	12.07	13.66	6.40	6.85	7.55	7.98	9.57
	6H	11.00	11.38	12.15	12.53	14.11	6.81	7.19	7.96	8.35	9.92
	8H	11.17	11.52	12.32	12.67	14.26	6.93	7.29	8.08	8.43	10.03
	12H	11.25	11.58	12.42	12.73	14.33	6.98	7.31	8.16	8.47	10.06
8H	4H	10.45	10.81	11.60	11.95	13.54	6.67	7.03	7.82	8.17	9.77
	6H	11.00	11.30	12.18	12.49	14.08	7.17	7.47	8.35	8.66	10.25
	8H	11.22	11.47	12.40	12.64	14.25	7.36	7.62	8.54	8.78	10.39
	12H	11.35	11.57	12.53	12.74	14.38	7.47	7.69	8.65	8.86	10.50
12H	4H	10.39	10.72	11.56	11.88	13.47	6.67	6.99	7.84	8.15	9.75
	6H	10.98	11.24	12.16	12.40	14.01	7.22	7.48	8.40	8.65	10.26
	8H	11.19	11.41	12.37	12.58	14.22	7.42	7.65	8.60	8.81	10.45

END OF REPORT