

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: P914811

Luminaire Tested: DFN2DIP-SQ3F0-110D120US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914811
REPORT IS A COMBINATION OF REPORTS P901540 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-110D120US927-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

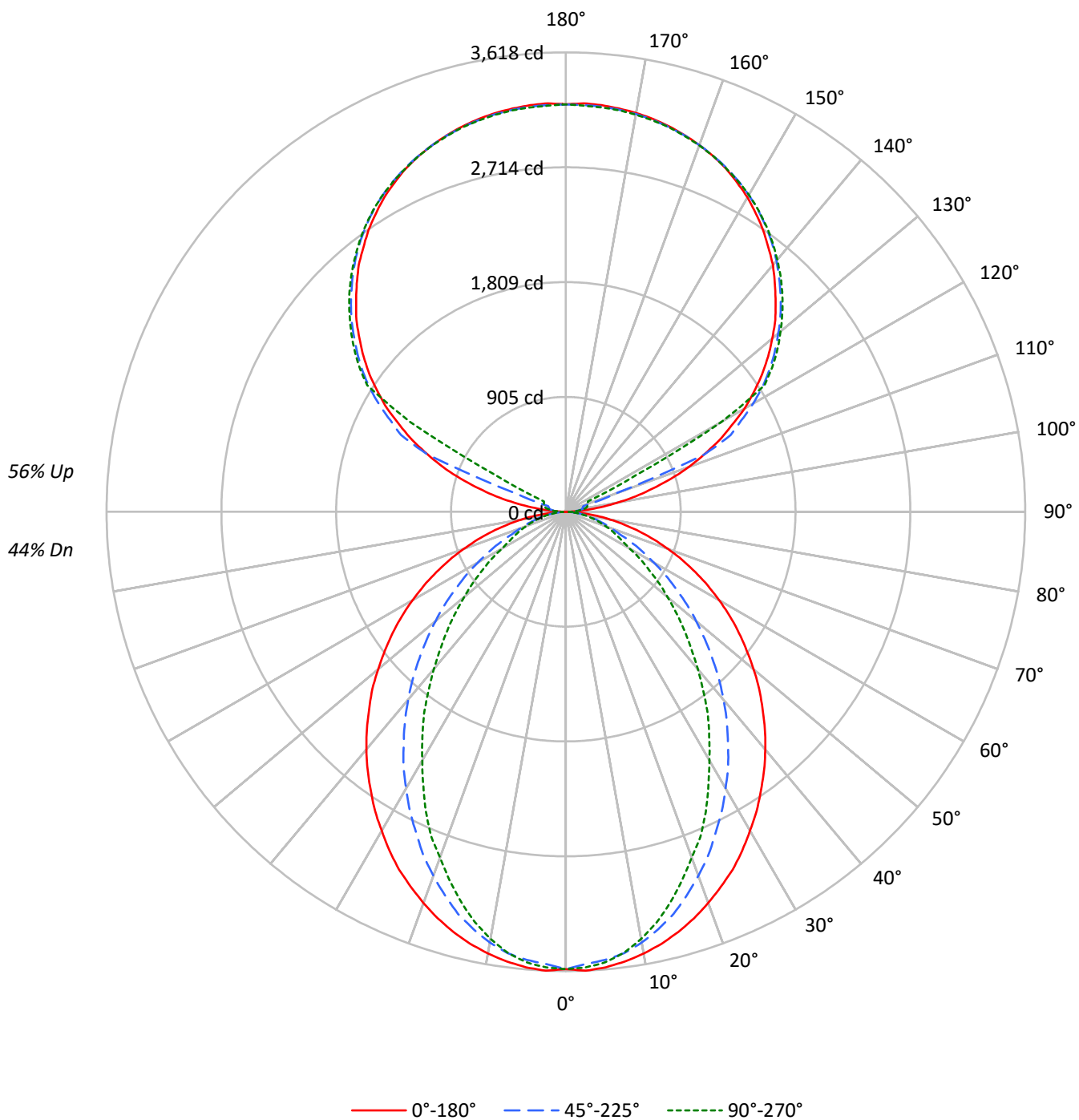
Lumens per Lamp: N/A
Luminaire Lumens: 16818.0 lumens
Efficiency: N/A
Efficacy: 81.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 206
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51
1	97	93	89	86	89	85	82	79	71	69	67	58	56	55	45	44	44
2	89	81	76	71	81	75	70	66	62	59	56	51	49	46	40	39	37
3	81	72	65	59	74	66	60	55	55	51	47	46	42	40	36	34	32
4	74	64	56	51	68	59	52	47	50	45	41	41	37	34	33	30	28
5	68	57	49	44	62	53	46	41	45	39	35	37	33	30	30	27	25
6	63	51	44	38	58	48	41	36	40	35	31	33	29	26	27	24	22
7	58	46	39	33	53	43	36	31	37	31	27	31	27	24	25	22	20
8	54	42	35	30	50	39	33	28	33	28	24	28	24	21	23	20	18
9	51	39	31	26	46	36	29	25	31	26	22	26	22	19	21	18	16
10	47	35	28	24	43	33	27	22	28	23	20	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4127	4127	4127
5°	4131	4058	4086
10°	4087	3976	3951
15°	4028	3842	3745
20°	3951	3658	3491
25°	3872	3453	3247
30°	3767	3242	2937
35°	3664	3017	2665
40°	3559	2783	2354
45°	3437	2524	2071
50°	3311	2264	1795
55°	3179	1985	1531
60°	3026	1694	1259
65°	2849	1399	1131
70°	2635	1124	1022
75°	2366	985	927
80°	1977	817	799
85°	1342	533	593

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3437 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	337.5	2.0
10°-20°	926.6	5.5
20°-30°	1300.9	7.7
30°-40°	1418.1	8.4
40°-50°	1303.4	7.7
50°-60°	1023.6	6.1
60°-70°	666.3	4.0
70°-80°	343.0	2.0
80°-90°	93.2	0.6
90°-100°	105.8	0.6
100°-110°	394.4	2.3
110°-120°	1045.9	6.2
120°-130°	1734.7	10.3
130°-140°	1842.7	11.0
140°-150°	1712.6	10.2
150°-160°	1376.9	8.2
160°-170°	887.2	5.3
170°-180°	305.4	1.8
0°-30°	2565.1	15.3
0°-40°	3983.1	23.7
0°-60°	6310.1	37.5
0°-90°	7412.5	44.1
90°-120°	1546.1	9.2
90°-150°	6836.0	40.6
90°-180°	9405.0	55.9
0°-180°	16818.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3602	3602	3602	3602	3602	
5°	3602	3585	3543	3572	3562	341
15°	3426	3390	3279	3217	3184	965
25°	3109	3005	2790	2656	2607	1430
35°	2679	2513	2226	2021	1949	1677
45°	2190	1972	1630	1398	1320	1691
55°	1665	1411	1059	864	802	1488
65°	1124	860	567	456	446	1115
75°	600	371	261	238	235	634
85°	140	72	62	62	62	161
90°	2	28	46	58	63	16
95°	151	74	90	102	100	179
105°	706	776	142	167	176	754
115°	1335	1374	1432	358	190	1314
125°	1887	1918	1962	1978	1985	1683
135°	2335	2373	2393	2417	2412	1804
145°	2709	2707	2746	2762	2751	1694
155°	2983	2962	2990	3004	2986	1375
165°	3143	3129	3136	3153	3136	888
175°	3215	3199	3204	3220	3197	306
180°	3208	3208	3208	3208	3208	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3601.5	3601.5	3601.5	3601.5	3601.5
2.5°	3617.7	3601.5	3565.5	3598.4	3591.8
5°	3601.5	3585.3	3542.7	3572.1	3562.4
7.5°	3572.1	3552.7	3507.1	3519.9	3503.6
10°	3533.0	3510.2	3445.2	3435.1	3415.8
12.5°	3484.3	3454.9	3366.7	3347.3	3311.3
15°	3425.5	3389.5	3278.8	3217.0	3184.4
17.5°	3357.0	3304.8	3167.9	3096.2	3044.0
20°	3278.8	3213.5	3050.6	2969.3	2897.4
22.5°	3194.2	3119.1	2930.0	2819.3	2770.5
25°	3109.4	3005.0	2789.9	2656.4	2607.3
27.5°	3008.5	2897.4	2659.5	2506.3	2431.3
30°	2900.9	2776.8	2516.0	2350.0	2261.8
32.5°	2796.5	2646.4	2379.4	2183.7	2102.1
35°	2679.2	2512.9	2226.3	2020.9	1948.9
37.5°	2565.2	2385.7	2082.7	1857.6	1776.4
40°	2444.4	2249.1	1932.7	1701.3	1616.6
42.5°	2320.6	2112.1	1783.0	1541.6	1460.3
45°	2190.3	1971.7	1629.8	1398.0	1319.9
47.5°	2066.5	1835.2	1483.1	1251.4	1179.9
50°	1929.5	1698.2	1339.7	1114.5	1046.4
52.5°	1795.7	1551.2	1202.7	987.6	925.7
55°	1665.3	1411.2	1059.1	863.8	801.9
57.5°	1531.9	1271.1	932.2	749.7	697.4
60°	1395.0	1134.2	798.4	632.5	580.3
62.5°	1261.5	1000.8	684.4	528.1	502.1
65°	1124.5	860.3	567.1	456.5	446.4
67.5°	994.2	730.0	456.5	400.8	391.1
70°	857.2	603.1	377.9	345.5	332.3
72.5°	726.8	485.5	316.1	290.1	283.5
75°	599.6	371.4	260.7	237.9	234.8
77.5°	472.7	263.9	205.4	192.3	185.7
80°	355.1	189.2	156.3	143.5	143.5
82.5°	247.6	127.2	107.6	101.0	101.0
85°	140.1	71.6	61.9	61.9	61.9
87.5°	52.2	25.9	25.9	22.8	22.8
90°	2.2	27.8	46.3	58.1	62.6
92.5°	58.1	48.8	55.7	60.4	62.6
95°	150.8	74.1	90.4	102.3	99.8
97.5°	271.6	81.4	118.3	125.4	127.6
100°	411.0	92.9	132.3	150.8	155.5
102.5°	564.0	559.6	137.0	162.4	169.5
105°	705.7	775.5	141.7	167.1	176.4
107.5°	870.5	928.4	146.4	171.7	181.1
110°	1028.5	1077.0	406.3	174.2	183.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1177.1	1218.7	1179.3	178.6	185.8
115°	1334.7	1374.2	1432.3	357.5	190.5
117.5°	1471.8	1518.1	1557.8	1225.6	617.5
120°	1625.1	1659.8	1701.7	1729.6	1416.1
122.5°	1754.9	1792.2	1838.7	1852.5	1855.0
125°	1887.2	1917.6	1961.7	1977.9	1984.8
127.5°	2007.9	2040.5	2075.5	2098.6	2100.9
130°	2121.8	2159.0	2184.4	2210.0	2207.8
132.5°	2237.8	2268.2	2293.5	2314.5	2312.3
135°	2335.4	2372.7	2393.3	2416.8	2412.1
137.5°	2437.5	2465.3	2488.7	2511.8	2505.0
140°	2537.3	2556.0	2581.3	2602.3	2590.7
142.5°	2621.0	2637.3	2667.4	2685.8	2674.2
145°	2709.3	2706.8	2746.2	2762.5	2750.8
147.5°	2785.6	2778.7	2818.2	2829.8	2820.6
150°	2860.0	2843.8	2881.0	2894.8	2883.2
152.5°	2922.6	2904.1	2938.9	2952.9	2936.7
155°	2983.0	2962.3	2990.2	3004.0	2985.5
157.5°	3031.8	3013.3	3034.3	3050.5	3031.8
160°	3073.7	3059.6	3073.7	3087.4	3071.2
162.5°	3110.7	3096.9	3108.4	3124.7	3103.8
165°	3143.1	3129.4	3136.2	3152.6	3136.2
167.5°	3168.8	3154.7	3161.9	3178.2	3157.2
170°	3189.7	3175.7	3180.4	3196.6	3175.7
172.5°	3203.5	3189.7	3194.5	3210.7	3189.7
175°	3215.1	3198.8	3203.5	3219.8	3196.6
177.5°	3219.8	3203.5	3206.0	3222.3	3201.4
180°	3208.3	3208.3	3208.3	3208.3	3208.3

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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	11.46	12.24	12.47	13.26	14.62	7.42	8.20	8.43	9.22	10.58
	3H	13.13	13.83	14.15	14.86	16.23	8.60	9.30	9.62	10.33	11.70
	4H	13.73	14.39	14.77	15.42	16.81	9.04	9.70	10.08	10.73	12.12
	6H	14.15	14.76	15.19	15.79	17.19	9.35	9.96	10.40	11.00	12.39
	8H	14.27	14.85	15.32	15.90	17.29	9.44	10.02	10.49	11.07	12.46
	12H	14.33	14.88	15.38	15.92	17.34	9.48	10.03	10.53	11.07	12.49
4H	2H	11.47	12.13	12.51	13.16	14.55	8.01	8.67	9.05	9.70	11.08
	3H	13.29	13.84	14.34	14.90	16.29	9.34	9.90	10.39	10.95	12.35
	4H	13.98	14.48	15.03	15.53	16.95	9.89	10.39	10.94	11.44	12.86
	6H	14.48	14.92	15.55	15.99	17.40	10.30	10.73	11.36	11.80	13.22
	8H	14.66	15.06	15.72	16.12	17.55	10.42	10.82	11.49	11.89	13.32
	12H	14.75	15.11	15.83	16.19	17.62	10.48	10.84	11.56	11.92	13.36
8H	4H	13.94	14.34	15.00	15.41	16.84	10.16	10.56	11.23	11.63	13.06
	6H	14.50	14.83	15.59	15.94	17.36	10.67	11.00	11.76	12.11	13.53
	8H	14.71	15.00	15.81	16.09	17.54	10.85	11.15	11.95	12.24	13.68
	12H	14.84	15.10	15.94	16.19	17.67	10.97	11.22	12.06	12.31	13.79
12H	4H	13.89	14.25	14.97	15.33	16.77	10.16	10.53	11.24	11.61	13.04
	6H	14.47	14.76	15.57	15.85	17.30	10.72	11.01	11.81	12.10	13.54
	8H	14.69	14.94	15.79	16.03	17.52	10.92	11.18	12.02	12.26	13.75

END OF REPORT