

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: P906770

Luminaire Tested: DFN2DIP-SQ4F0-080D160US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906770
REPORT IS A COMBINATION OF REPORTS P900208 AND P896915
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-080D160US835-RLLFLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

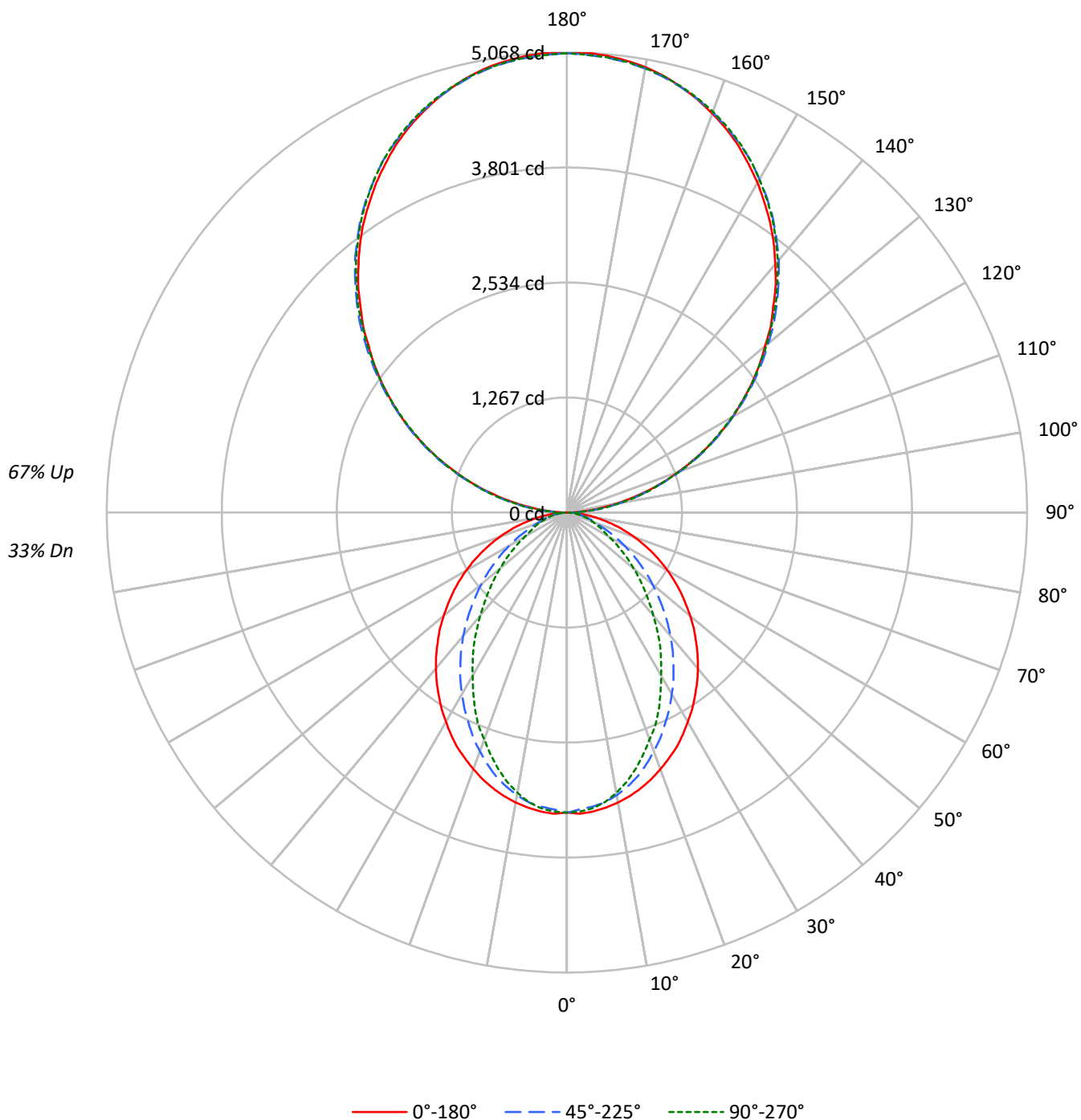
Lumens per Lamp: N/A
Luminaire Lumens: 20961.0 lumens
Efficiency: N/A
Efficacy: 108.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 193.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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	93	93	93	93	74	74	74	56	56	56	40	40	40
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	79	73	68	77	71	67	62	57	54	51	44	42	40	32	31	29
3	79	70	63	57	71	63	57	52	51	46	43	39	36	34	29	27	25
4	72	62	54	49	65	56	50	45	45	41	37	35	32	29	26	24	22
5	66	55	47	42	59	50	43	38	40	36	32	32	28	26	23	21	19
6	61	49	42	36	55	45	38	33	36	32	28	29	25	23	21	19	17
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	19	17	15
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13
10	45	34	27	22	41	31	25	21	25	21	18	20	17	15	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2320	2320	2320
5°	2324	2284	2298
10°	2301	2239	2224
15°	2269	2166	2109
20°	2227	2064	1968
25°	2184	1950	1831
30°	2126	1833	1658
35°	2070	1708	1506
40°	2013	1577	1331
45°	1946	1433	1173
50°	1877	1287	1018
55°	1805	1131	869
60°	1721	968	716
65°	1625	802	645
70°	1509	648	585
75°	1363	572	534
80°	1151	481	465
85°	801	324	354

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 3982 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	309.9	1.5
10°-20°	850.7	4.1
20°-30°	1194.3	5.7
30°-40°	1301.9	6.2
40°-50°	1196.6	5.7
50°-60°	939.7	4.5
60°-70°	611.7	2.9
70°-80°	314.9	1.5
80°-90°	94.8	0.5
90°-100°	313.1	1.5
100°-110°	995.0	4.7
110°-120°	1702.7	8.1
120°-130°	2239.3	10.7
130°-140°	2513.5	12.0
140°-150°	2464.8	11.8
150°-160°	2067.6	9.9
160°-170°	1371.2	6.5
170°-180°	479.3	2.3
0°-30°	2354.9	11.2
0°-40°	3656.8	17.4
0°-60°	5793.1	27.6
0°-90°	6814.4	32.5
90°-120°	3010.8	14.4
90°-150°	10228.5	48.8
90°-180°	14147.0	67.5
0°-180°	20961.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3306	3306	3306	3306	3306	
5°	3306	3292	3252	3279	3270	314
15°	3145	3112	3010	2953	2924	886
25°	2855	2759	2561	2439	2394	1313
35°	2460	2307	2044	1855	1789	1540
45°	2011	1810	1496	1284	1212	1553
55°	1529	1296	972	793	736	1366
65°	1032	790	521	419	410	1024
75°	550	341	239	218	216	582
85°	129	66	57	57	57	148
90°	5	55	150	140	145	21
95°	223	266	273	273	266	248
105°	918	931	940	947	947	969
115°	1709	1733	1726	1721	1709	1690
125°	2485	2523	2511	2498	2493	2221
135°	3214	3262	3271	3266	3254	2485
145°	3903	3933	3958	3962	3945	2438
155°	4462	4475	4488	4510	4496	2054
165°	4855	4850	4850	4880	4859	1369
175°	5051	5039	5030	5061	5035	480
180°	5061	5061	5061	5061	5061	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3306.4	3306.4	3306.4	3306.4	3306.4
2.5°	3321.3	3306.4	3273.4	3303.5	3297.5
5°	3306.4	3291.5	3252.4	3279.4	3270.5
7.5°	3279.4	3261.6	3219.7	3231.5	3216.5
10°	3243.5	3222.6	3162.9	3153.7	3135.9
12.5°	3198.8	3171.8	3090.8	3073.0	3040.0
15°	3144.8	3111.8	3010.2	2953.4	2923.5
17.5°	3081.9	3034.0	2908.3	2842.6	2794.6
20°	3010.2	2950.2	2800.7	2726.1	2660.0
22.5°	2932.4	2863.5	2689.9	2588.3	2543.5
25°	2854.6	2758.8	2561.3	2438.8	2393.7
27.5°	2761.9	2660.0	2441.6	2301.0	2232.1
30°	2663.2	2549.2	2309.9	2157.5	2076.5
32.5°	2567.3	2429.6	2184.5	2004.8	1929.9
35°	2459.7	2307.0	2043.8	1855.3	1789.2
37.5°	2354.9	2190.2	1912.1	1705.4	1630.8
40°	2244.2	2064.8	1774.3	1561.9	1484.1
42.5°	2130.5	1939.1	1636.8	1415.3	1340.6
45°	2010.8	1810.2	1496.2	1283.5	1211.8
47.5°	1897.2	1684.8	1361.6	1148.9	1083.2
50°	1771.4	1559.1	1229.9	1023.2	960.6
52.5°	1648.6	1424.1	1104.1	906.7	849.9
55°	1528.9	1295.6	972.4	793.0	736.2
57.5°	1406.4	1167.0	855.9	688.3	640.3
60°	1280.6	1041.3	733.0	580.6	532.7
62.5°	1158.1	918.7	628.3	484.8	461.0
65°	1032.4	789.8	520.6	419.1	409.8
67.5°	912.7	670.2	419.1	367.9	359.1
70°	787.0	553.7	347.0	317.1	305.1
72.5°	667.3	445.7	290.2	266.4	260.3
75°	550.5	341.0	239.4	218.4	215.6
77.5°	434.0	242.2	188.6	176.5	170.5
80°	326.0	173.7	143.5	131.7	131.7
82.5°	227.3	116.8	98.7	92.7	92.7
85°	128.6	65.7	56.8	56.8	56.8
87.5°	47.9	23.8	23.8	21.0	21.0
90°	4.6	54.9	149.5	140.4	144.9
92.5°	94.6	128.2	132.7	137.3	137.3
95°	222.7	265.5	273.1	273.1	265.5
97.5°	370.7	410.4	427.2	427.2	427.2
100°	541.6	576.7	588.9	588.9	584.3
102.5°	721.6	747.6	764.3	768.9	764.3
105°	918.4	930.6	939.8	947.4	947.4
107.5°	1113.7	1132.0	1132.0	1135.1	1113.7
110°	1302.9	1327.3	1327.3	1327.3	1315.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1507.3	1533.3	1528.7	1516.5	1507.3
115°	1708.7	1733.1	1725.5	1720.9	1708.7
117.5°	1908.6	1942.1	1920.8	1908.6	1896.4
120°	2110.0	2143.5	2110.0	2110.0	2096.2
122.5°	2293.0	2335.8	2314.4	2302.2	2293.0
125°	2485.3	2523.4	2511.2	2497.5	2492.9
127.5°	2672.9	2720.2	2703.4	2685.1	2672.9
130°	2848.4	2903.3	2895.7	2886.5	2869.7
132.5°	3045.2	3087.9	3090.9	3069.6	3057.4
135°	3214.5	3261.8	3271.0	3266.4	3254.2
137.5°	3403.7	3441.8	3449.5	3446.4	3428.1
140°	3570.0	3608.1	3629.5	3629.5	3612.7
142.5°	3740.9	3779.0	3791.2	3795.8	3779.0
145°	3902.6	3933.1	3957.5	3962.1	3945.3
147.5°	4047.5	4085.7	4104.0	4111.6	4094.8
150°	4197.0	4223.0	4239.8	4253.5	4239.8
152.5°	4329.8	4355.7	4377.1	4393.8	4377.1
155°	4462.5	4474.7	4488.4	4509.8	4496.1
157.5°	4576.9	4586.1	4593.7	4624.2	4602.9
160°	4679.1	4688.3	4692.9	4718.8	4700.5
162.5°	4773.7	4773.7	4778.3	4807.3	4785.9
165°	4854.6	4850.0	4850.0	4880.5	4859.2
167.5°	4927.8	4914.1	4914.1	4944.6	4923.2
170°	4982.7	4970.5	4966.0	4996.5	4970.5
172.5°	5020.9	5008.7	5004.1	5034.6	5008.7
175°	5051.4	5039.2	5030.0	5060.6	5034.6
177.5°	5068.2	5056.0	5046.8	5072.8	5046.8
180°	5060.6	5060.6	5060.6	5060.6	5060.6

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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	8.18	8.89	9.28	9.98	11.48	4.14	4.85	5.24	5.94	7.44
	3H	9.85	10.48	10.96	11.59	13.11	5.32	5.95	6.43	7.05	8.57
	4H	10.46	11.06	11.58	12.16	13.69	5.77	6.37	6.89	7.47	8.99
	6H	10.88	11.43	12.01	12.53	14.07	6.08	6.63	7.21	7.74	9.28
	8H	11.00	11.53	12.13	12.65	14.18	6.17	6.69	7.30	7.81	9.34
	12H	11.06	11.56	12.20	12.67	14.23	6.21	6.71	7.34	7.82	9.37
4H	2H	8.18	8.78	9.31	9.89	11.41	4.73	5.32	5.85	6.43	7.95
	3H	10.01	10.51	11.14	11.63	13.17	6.06	6.56	7.20	7.69	9.23
	4H	10.70	11.16	11.83	12.27	13.83	6.61	7.07	7.74	8.18	9.74
	6H	11.21	11.60	12.35	12.74	14.29	7.02	7.41	8.16	8.55	10.10
	8H	11.39	11.75	12.53	12.88	14.45	7.15	7.51	8.29	8.65	10.21
	12H	11.48	11.81	12.63	12.95	14.52	7.21	7.54	8.36	8.68	10.25
8H	4H	10.66	11.02	11.80	12.15	13.72	6.88	7.25	8.02	8.38	9.95
	6H	11.22	11.52	12.38	12.70	14.26	7.40	7.70	8.56	8.87	10.44
	8H	11.44	11.70	12.61	12.86	14.44	7.59	7.85	8.75	9.01	10.59
	12H	11.58	11.81	12.75	12.96	14.58	7.70	7.93	8.87	9.08	10.70
12H	4H	10.60	10.93	11.76	12.08	13.65	6.88	7.21	8.04	8.36	9.93
	6H	11.20	11.46	12.36	12.62	14.20	7.45	7.71	8.61	8.86	10.45
	8H	11.42	11.65	12.59	12.80	14.42	7.65	7.88	8.82	9.04	10.65

END OF REPORT