

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: P906766

Luminaire Tested: DFN2DIP-SQ4F0-080D140US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906766
REPORT IS A COMBINATION OF REPORTS P900190 AND P896915
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-080D140US835-RLLFLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

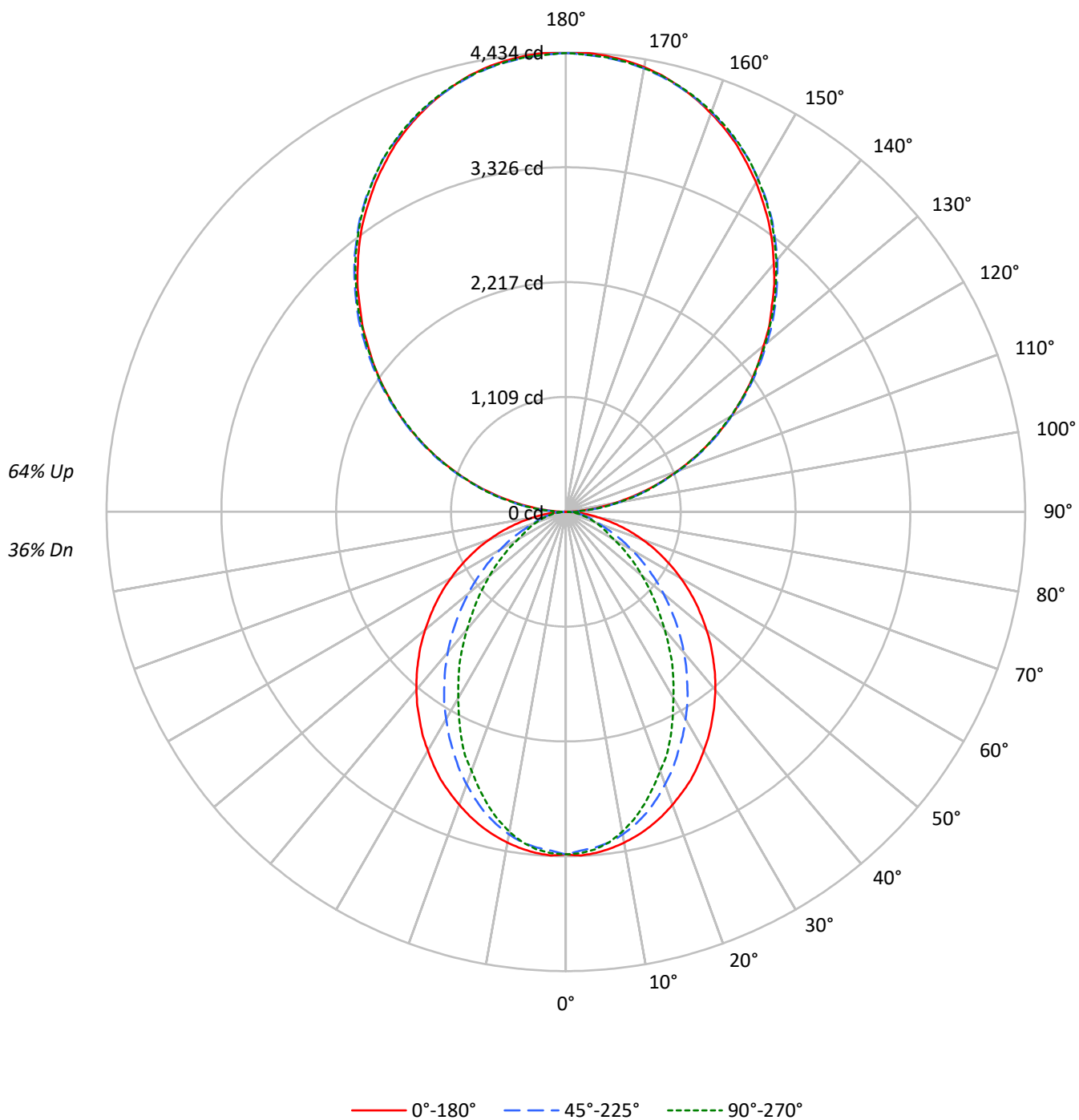
Lumens per Lamp: N/A
Luminaire Lumens: 19190.0 lumens
Efficiency: N/A
Efficacy: 108.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 177.2
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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	43	43	43
1	95	91	87	84	86	82	79	76	66	64	62	52	50	49	38	37	37
2	87	80	74	69	78	72	67	63	59	55	52	46	44	42	34	33	31
3	79	70	63	58	71	64	58	53	52	48	44	41	38	36	31	29	27
4	73	62	55	49	65	57	50	45	46	42	38	37	33	31	27	25	24
5	67	56	48	42	60	51	44	39	42	37	33	33	29	27	25	23	21
6	61	50	42	37	55	46	39	34	37	32	29	30	26	24	23	20	18
7	57	45	37	32	51	41	35	30	34	29	25	27	24	21	21	18	17
8	53	41	33	28	48	38	31	26	31	26	23	25	21	19	19	17	15
9	49	37	30	25	44	34	28	24	28	24	20	23	19	17	18	15	14
10	46	34	27	23	42	31	25	21	26	21	18	21	18	15	16	14	12

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: 3485 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	309.9	1.6
10°-20°	850.7	4.4
20°-30°	1194.3	6.2
30°-40°	1301.9	6.8
40°-50°	1196.6	6.2
50°-60°	939.7	4.9
60°-70°	611.7	3.2
70°-80°	314.9	1.6
80°-90°	93.0	0.5
90°-100°	274.0	1.4
100°-110°	870.6	4.5
110°-120°	1489.8	7.8
120°-130°	1959.3	10.2
130°-140°	2199.2	11.5
140°-150°	2156.6	11.2
150°-160°	1809.1	9.4
160°-170°	1199.7	6.3
170°-180°	419.3	2.2
0°-30°	2354.9	12.3
0°-40°	3656.8	19.1
0°-60°	5793.1	30.2
0°-90°	6812.6	35.5
90°-120°	2634.3	13.7
90°-150°	8949.3	46.6
90°-180°	12377.0	64.5
0°-180°	19190.0	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°	4	48	131	123	127	19
95°	195	232	239	239	232	217
105°	804	814	822	829	829	848
115°	1495	1516	1510	1506	1495	1479
125°	2174	2208	2197	2185	2181	1943
135°	2812	2854	2862	2858	2847	2174
145°	3414	3441	3463	3467	3452	2133
155°	3904	3915	3927	3946	3934	1797
165°	4248	4244	4244	4270	4252	1198
175°	4420	4409	4401	4428	4405	420
180°	4428	4428	4428	4428	4428	

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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°	4.0	48.1	130.8	122.8	126.8
92.5°	82.8	112.1	116.1	120.1	120.1
95°	194.9	232.3	238.9	238.9	232.3
97.5°	324.4	359.1	373.8	373.8	373.8
100°	473.9	504.6	515.2	515.2	511.2
102.5°	631.4	654.1	668.8	672.8	668.8
105°	803.6	814.3	822.3	828.9	828.9
107.5°	974.4	990.5	990.5	993.1	974.4
110°	1140.0	1161.3	1161.3	1161.3	1150.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1318.8	1341.5	1337.5	1326.8	1318.8
115°	1495.0	1516.4	1509.7	1505.7	1495.0
117.5°	1669.9	1699.3	1680.6	1669.9	1659.2
120°	1846.1	1875.5	1846.1	1846.1	1834.1
122.5°	2006.3	2043.6	2025.0	2014.3	2006.3
125°	2174.5	2207.8	2197.1	2185.1	2181.1
127.5°	2338.6	2380.0	2365.3	2349.3	2338.6
130°	2492.1	2540.2	2533.5	2525.5	2510.8
132.5°	2664.3	2701.7	2704.4	2685.7	2675.0
135°	2812.5	2853.9	2861.9	2857.9	2847.2
137.5°	2978.0	3011.4	3018.1	3015.4	2999.4
140°	3123.5	3156.9	3175.6	3175.6	3160.9
142.5°	3273.0	3306.4	3317.1	3321.1	3306.4
145°	3414.5	3441.2	3462.6	3466.6	3451.9
147.5°	3541.3	3574.7	3590.7	3597.4	3582.7
150°	3672.1	3694.8	3709.5	3721.5	3709.5
152.5°	3788.3	3811.0	3829.7	3844.3	3829.7
155°	3904.4	3915.1	3927.1	3945.8	3933.8
157.5°	4004.5	4012.5	4019.2	4045.9	4027.2
160°	4094.0	4102.0	4106.0	4128.7	4112.6
162.5°	4176.7	4176.7	4180.7	4206.1	4187.4
165°	4247.5	4243.5	4243.5	4270.2	4251.5
167.5°	4311.5	4299.5	4299.5	4326.2	4307.5
170°	4359.6	4348.9	4344.9	4371.6	4348.9
172.5°	4393.0	4382.3	4378.3	4405.0	4382.3
175°	4419.7	4409.0	4401.0	4427.7	4405.0
177.5°	4434.3	4423.7	4415.7	4438.3	4415.7
180°	4427.7	4427.7	4427.7	4427.7	4427.7

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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	8.55	9.28	9.63	10.35	11.82	4.51	5.24	5.59	6.31	7.78
	3H	10.23	10.88	11.31	11.96	13.44	5.70	6.34	6.78	7.43	8.91
	4H	10.83	11.45	11.93	12.53	14.02	6.14	6.76	7.24	7.84	9.33
	6H	11.25	11.82	12.36	12.91	14.41	6.46	7.02	7.56	8.11	9.61
	8H	11.38	11.92	12.49	13.02	14.52	6.55	7.08	7.66	8.19	9.68
	12H	11.44	11.95	12.55	13.05	14.57	6.59	7.10	7.70	8.19	9.71
4H	2H	8.56	9.17	9.66	10.26	11.75	5.10	5.71	6.20	6.80	8.29
	3H	10.38	10.89	11.49	12.01	13.51	6.44	6.95	7.55	8.06	9.57
	4H	11.07	11.54	12.19	12.65	14.17	6.99	7.45	8.10	8.56	10.08
	6H	11.59	11.99	12.71	13.11	14.63	7.40	7.80	8.52	8.93	10.44
	8H	11.76	12.14	12.89	13.26	14.79	7.53	7.90	8.65	9.02	10.55
	12H	11.86	12.20	13.00	13.32	14.86	7.59	7.93	8.73	9.06	10.59
8H	4H	11.04	11.41	12.16	12.53	14.06	7.26	7.64	8.38	8.75	10.28
	6H	11.60	11.91	12.74	13.07	14.60	7.78	8.09	8.92	9.24	10.77
	8H	11.82	12.09	12.97	13.23	14.78	7.97	8.24	9.12	9.38	10.93
	12H	11.96	12.20	13.11	13.33	14.92	8.08	8.32	9.23	9.46	11.04
12H	4H	10.98	11.32	12.12	12.45	13.99	7.26	7.60	8.40	8.73	10.27
	6H	11.58	11.85	12.73	12.99	14.54	7.83	8.10	8.98	9.24	10.78
	8H	11.80	12.03	12.95	13.17	14.75	8.03	8.27	9.19	9.41	10.99