

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: P911974

Luminaire Tested: DFN2DIP-SQ3F0-080D120US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911974
REPORT IS A COMBINATION OF REPORTS P900014 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-080D120US850-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

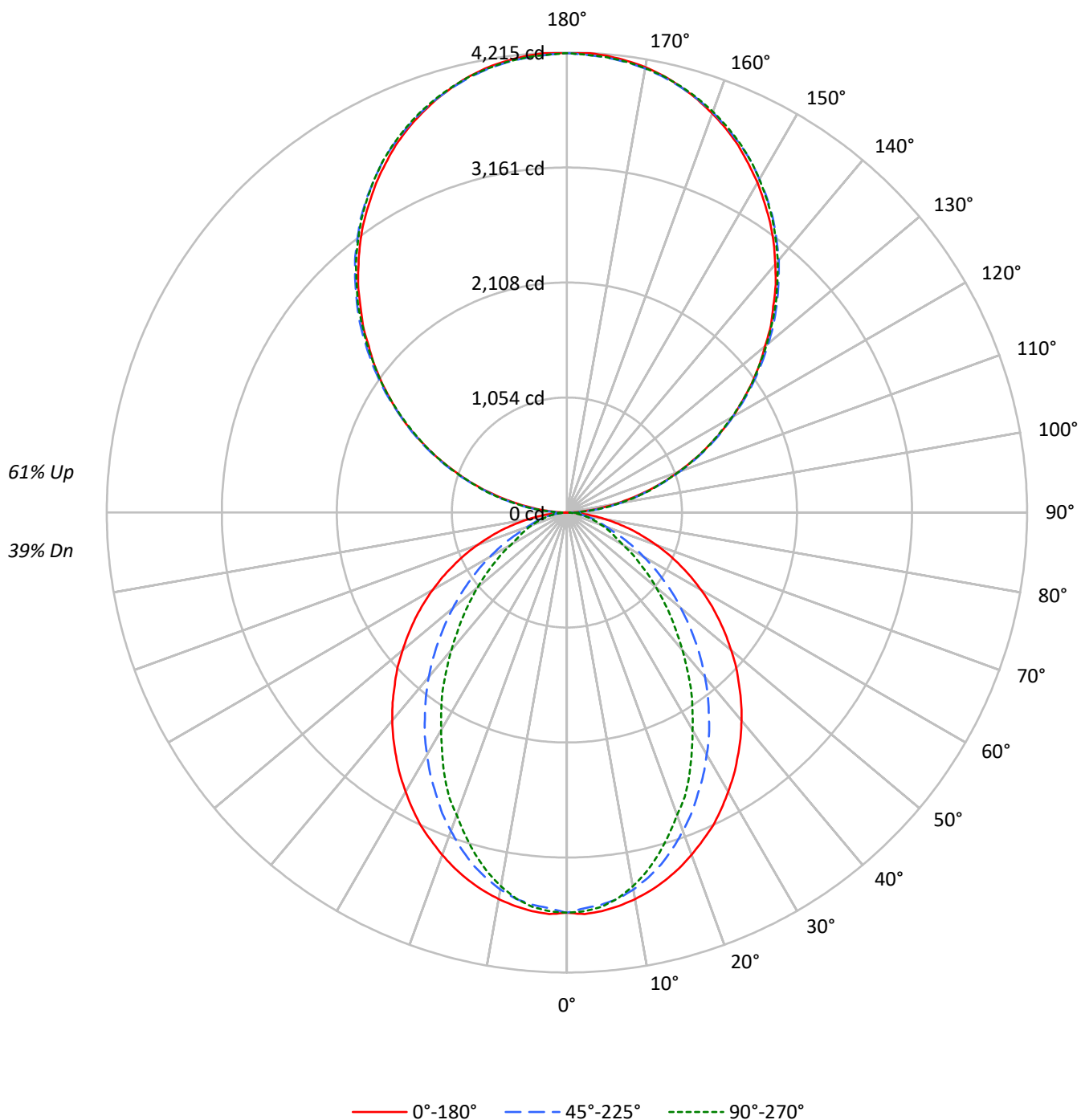
Lumens per Lamp: N/A
Luminaire Lumens: 19318.8 lumens
Efficiency: N/A
Efficacy: 113.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 170.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
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	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46
1	96	92	88	85	87	83	80	78	68	66	64	54	53	51	41	40	40
2	87	80	75	70	79	73	68	64	60	57	54	48	46	44	37	35	34
3	80	71	64	58	73	65	59	54	53	49	46	43	40	37	33	31	29
4	73	63	55	50	66	58	51	46	48	43	39	38	35	32	30	27	26
5	67	56	48	43	61	52	45	40	43	38	34	35	31	28	27	24	22
6	62	51	43	37	56	46	40	35	39	33	30	31	28	25	25	22	20
7	57	46	38	33	52	42	35	30	35	30	26	29	25	22	22	20	18
8	53	41	34	29	49	38	32	27	32	27	23	26	22	20	21	18	16
9	50	38	31	26	45	35	29	24	29	24	21	24	20	18	19	17	15
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4201	4201	4201
5°	4205	4132	4160
10°	4161	4048	4023
15°	4101	3912	3813
20°	4023	3725	3555
25°	3942	3515	3306
30°	3835	3301	2990
35°	3730	3071	2713
40°	3623	2833	2396
45°	3499	2570	2109
50°	3371	2305	1828
55°	3236	2021	1558
60°	3080	1725	1281
65°	2901	1424	1152
70°	2683	1144	1040
75°	2409	1003	944
80°	2013	832	814
85°	1365	542	603

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 4232 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	343.7	1.8
10°-20°	943.4	4.9
20°-30°	1324.5	6.9
30°-40°	1443.8	7.5
40°-50°	1327.0	6.9
50°-60°	1042.1	5.4
60°-70°	678.3	3.5
70°-80°	349.2	1.8
80°-90°	101.1	0.5
90°-100°	260.4	1.3
100°-110°	827.5	4.3
110°-120°	1416.1	7.3
120°-130°	1862.4	9.6
130°-140°	2090.5	10.8
140°-150°	2050.0	10.6
150°-160°	1719.6	8.9
160°-170°	1140.4	5.9
170°-180°	398.6	2.1
0°-30°	2611.6	13.5
0°-40°	4055.4	21.0
0°-60°	6424.5	33.3
0°-90°	7553.2	39.1
90°-120°	2504.0	13.0
90°-150°	8506.9	44.0
90°-180°	11766.0	60.9
0°-180°	19318.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3667	3667	3667	3667	3667	
5°	3667	3650	3607	3637	3627	348
15°	3488	3451	3338	3275	3242	983
25°	3166	3060	2840	2705	2655	1456
35°	2728	2558	2267	2058	1984	1707
45°	2230	2008	1659	1423	1344	1722
55°	1696	1437	1078	879	816	1515
65°	1145	876	577	465	454	1135
75°	610	378	266	242	239	646
85°	143	73	63	63	63	164
90°	4	46	124	117	120	19
95°	185	221	227	227	221	206
105°	764	774	782	788	788	806
115°	1421	1442	1435	1431	1421	1406
125°	2067	2099	2089	2077	2073	1847
135°	2674	2713	2720	2717	2706	2066
145°	3246	3271	3291	3295	3281	2028
155°	3711	3722	3733	3751	3739	1708
165°	4038	4034	4034	4059	4041	1139
175°	4201	4191	4184	4209	4187	399
180°	4209	4209	4209	4209	4209	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3666.8	3666.8	3666.8	3666.8	3666.8
2.5°	3683.3	3666.8	3630.2	3663.6	3656.9
5°	3666.8	3650.3	3606.9	3636.9	3627.0
7.5°	3636.9	3617.1	3570.6	3583.7	3567.1
10°	3597.0	3573.9	3507.7	3497.5	3477.7
12.5°	3547.5	3517.5	3427.7	3408.0	3371.4
15°	3487.6	3451.0	3338.3	3275.3	3242.2
17.5°	3417.8	3364.7	3225.3	3152.4	3099.2
20°	3338.3	3271.8	3106.0	3023.2	2949.9
22.5°	3252.0	3175.6	2983.1	2870.4	2820.7
25°	3165.8	3059.5	2840.5	2704.6	2654.6
27.5°	3062.9	2949.9	2707.7	2551.8	2475.4
30°	2953.5	2827.1	2561.7	2392.7	2302.8
32.5°	2847.1	2694.4	2422.6	2223.3	2140.3
35°	2727.8	2558.5	2266.6	2057.5	1984.2
37.5°	2611.6	2428.9	2120.5	1891.3	1808.6
40°	2488.8	2289.9	1967.7	1732.1	1645.9
42.5°	2362.7	2150.5	1815.2	1569.6	1486.7
45°	2230.0	2007.5	1659.3	1423.4	1343.9
47.5°	2104.0	1868.4	1510.0	1274.1	1201.3
50°	1964.5	1729.0	1364.0	1134.7	1065.3
52.5°	1828.3	1579.3	1224.4	1005.5	942.5
55°	1695.6	1436.8	1078.4	879.4	816.4
57.5°	1559.7	1294.2	949.2	763.3	710.1
60°	1420.2	1154.8	812.9	643.9	590.8
62.5°	1284.3	1018.8	696.8	537.6	511.2
65°	1144.9	875.9	577.3	464.8	454.5
67.5°	1012.2	743.3	464.8	408.0	398.2
70°	872.8	614.1	384.8	351.7	338.4
72.5°	740.0	494.3	321.8	295.4	288.7
75°	610.5	378.2	265.5	242.2	239.1
77.5°	481.3	268.6	209.2	195.7	189.1
80°	361.5	192.6	159.1	146.1	146.1
82.5°	252.1	129.5	109.5	102.8	102.8
85°	142.6	72.9	63.0	63.0	63.0
87.5°	53.1	26.4	26.4	23.3	23.3
90°	3.8	45.7	124.3	116.8	120.5
92.5°	78.6	106.6	110.3	114.2	114.2
95°	185.2	220.8	227.1	227.1	220.8
97.5°	308.3	341.4	355.3	355.3	355.3
100°	450.5	479.6	489.7	489.7	486.0
102.5°	600.2	621.7	635.7	639.6	635.7
105°	763.9	774.0	781.6	787.9	787.9
107.5°	926.2	941.5	941.5	944.0	926.2
110°	1083.6	1103.9	1103.9	1103.9	1093.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1253.6	1275.2	1271.4	1261.3	1253.6
115°	1421.1	1441.5	1435.0	1431.3	1421.1
117.5°	1587.3	1615.3	1597.5	1587.3	1577.2
120°	1754.9	1782.7	1754.9	1754.9	1743.5
122.5°	1907.1	1942.6	1924.9	1914.7	1907.1
125°	2067.0	2098.7	2088.6	2077.2	2073.3
127.5°	2223.1	2262.4	2248.4	2233.2	2223.1
130°	2368.9	2414.6	2408.3	2400.7	2386.7
132.5°	2532.6	2568.2	2570.7	2552.9	2542.8
135°	2673.5	2712.8	2720.5	2716.6	2706.5
137.5°	2830.8	2862.6	2868.9	2866.3	2851.1
140°	2969.1	3000.8	3018.6	3018.6	3004.6
142.5°	3111.3	3143.0	3153.1	3156.9	3143.0
145°	3245.7	3271.1	3291.4	3295.3	3281.3
147.5°	3366.3	3398.0	3413.3	3419.6	3405.6
150°	3490.7	3512.2	3526.2	3537.6	3526.2
152.5°	3601.0	3622.5	3640.4	3654.4	3640.4
155°	3711.4	3721.6	3733.0	3750.7	3739.3
157.5°	3806.6	3814.2	3820.5	3845.9	3828.2
160°	3891.6	3899.2	3903.0	3924.6	3909.3
162.5°	3970.2	3970.2	3974.1	3998.2	3980.4
165°	4037.5	4033.8	4033.8	4059.1	4041.3
167.5°	4098.4	4087.0	4087.0	4112.4	4094.6
170°	4144.1	4133.9	4130.1	4155.5	4133.9
172.5°	4175.8	4165.6	4161.9	4187.3	4165.6
175°	4201.2	4191.0	4183.5	4208.8	4187.3
177.5°	4215.2	4205.0	4197.3	4219.0	4197.3
180°	4208.8	4208.8	4208.8	4208.8	4208.8

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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	10.99	11.74	12.04	12.79	14.21	6.95	7.70	8.00	8.75	10.17
	3H	12.65	13.32	13.71	14.38	15.82	8.12	8.79	9.18	9.85	11.29
	4H	13.26	13.89	14.33	14.95	16.40	8.57	9.20	9.64	10.26	11.71
	6H	13.67	14.25	14.75	15.32	16.78	8.88	9.46	9.96	10.53	11.98
	8H	13.79	14.35	14.88	15.43	16.88	8.96	9.52	10.05	10.60	12.05
	12H	13.85	14.38	14.94	15.45	16.93	9.00	9.53	10.09	10.60	12.08
4H	2H	10.99	11.63	12.07	12.69	14.14	7.53	8.16	8.61	9.23	10.67
	3H	12.81	13.34	13.90	14.43	15.89	8.87	9.39	9.95	10.48	11.94
	4H	13.50	13.98	14.59	15.06	16.54	9.41	9.89	10.50	10.97	12.45
	6H	14.00	14.42	15.10	15.52	16.99	9.81	10.23	10.91	11.33	12.81
	8H	14.17	14.56	15.27	15.65	17.14	9.94	10.32	11.04	11.42	12.91
	12H	14.26	14.61	15.38	15.72	17.21	9.99	10.34	11.11	11.45	12.95
8H	4H	13.46	13.84	14.55	14.94	16.43	9.68	10.06	10.78	11.16	12.65
	6H	14.01	14.33	15.13	15.47	16.96	10.18	10.50	11.30	11.64	13.13
	8H	14.23	14.51	15.35	15.62	17.13	10.37	10.65	11.50	11.77	13.27
	12H	14.36	14.60	15.49	15.72	17.26	10.48	10.72	11.61	11.84	13.38
12H	4H	13.40	13.75	14.52	14.86	16.36	9.68	10.03	10.79	11.14	12.63
	6H	13.99	14.27	15.11	15.39	16.89	10.23	10.51	11.36	11.63	13.14
	8H	14.20	14.45	15.33	15.56	17.11	10.43	10.68	11.56	11.79	13.34