

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: P912293

Luminaire Tested: DFN2DIP-SQ4F0-100D140US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912293
REPORT IS A COMBINATION OF REPORTS P901713 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-100D140US850-FLLONL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

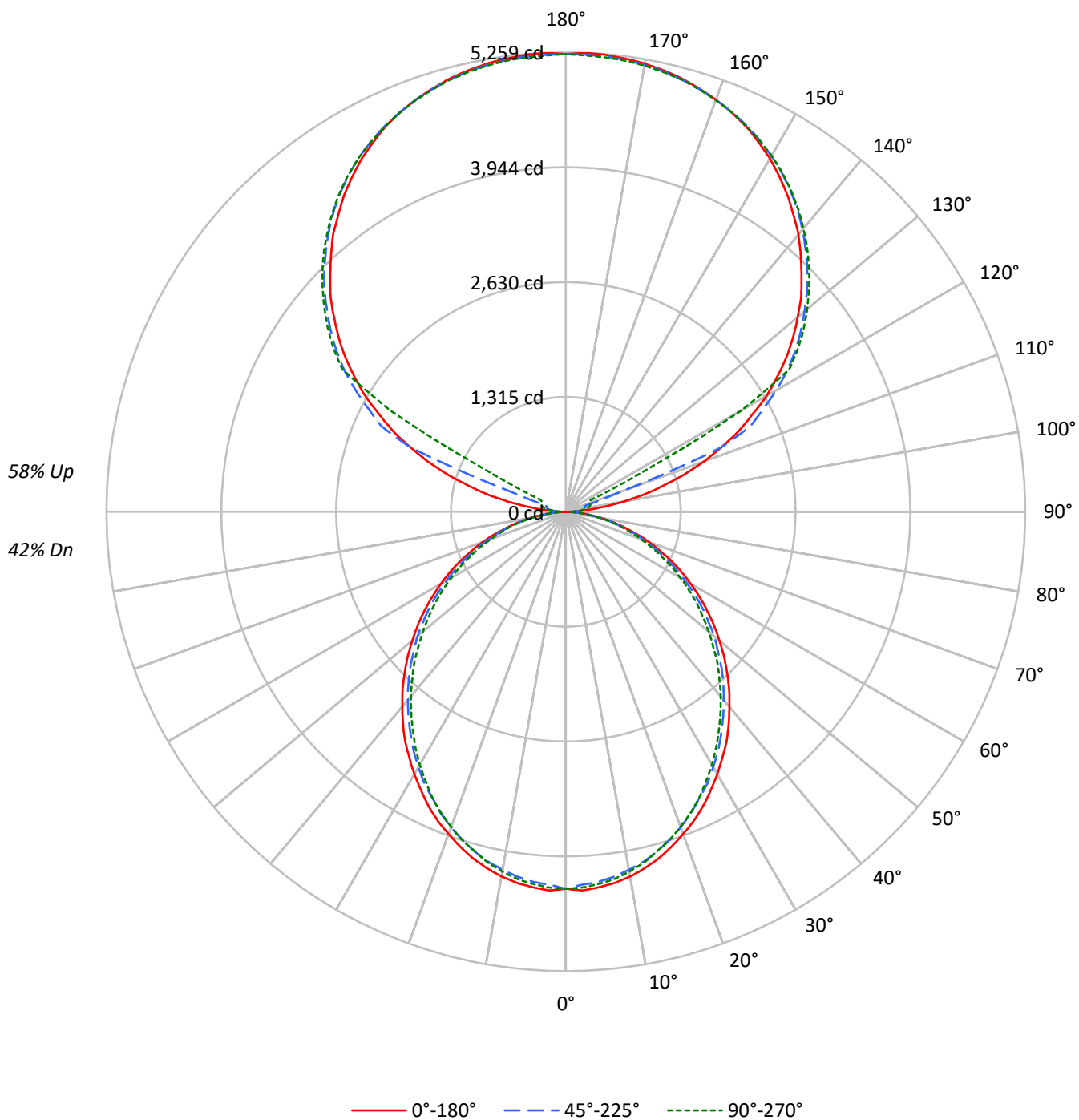
Lumens per Lamp: N/A
Luminaire Lumens: 26349.8 lumens
Efficiency: N/A
Efficacy: 132.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 198.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	96	96	96	96	79	79	79	63	63	63	49	49	49
1	96	92	88	84	87	84	80	78	69	67	65	55	54	52	43	42	41
2	87	80	74	69	79	73	68	64	60	57	53	49	46	44	38	36	34
3	80	70	63	57	72	64	58	53	53	49	45	43	40	37	33	31	29
4	73	62	54	48	66	57	50	45	47	42	38	38	35	32	30	27	25
5	67	55	47	41	61	51	44	39	42	37	33	34	30	27	27	24	22
6	62	50	42	36	56	46	39	33	38	33	29	31	27	24	24	22	19
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17
8	53	41	33	28	48	37	31	26	31	26	22	26	22	19	20	18	15
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3028	3028	3028
5°	3033	2986	3007
10°	3008	2947	2967
15°	2964	2899	2904
20°	2904	2832	2840
25°	2845	2752	2765
30°	2770	2677	2670
35°	2699	2590	2570
40°	2612	2501	2475
45°	2526	2412	2377
50°	2431	2319	2264
55°	2332	2211	2160
60°	2219	2083	2041
65°	2097	1950	1901
70°	1941	1789	1750
75°	1725	1595	1613
80°	1465	1349	1347
85°	1059	923	906

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2809 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	406.1	1.5
10°-20°	1142.7	4.3
20°-30°	1679.4	6.4
30°-40°	1950.5	7.4
40°-50°	1948.1	7.4
50°-60°	1698.7	6.4
60°-70°	1255.7	4.8
70°-80°	710.4	2.7
80°-90°	196.7	0.7
90°-100°	172.8	0.7
100°-110°	644.1	2.4
110°-120°	1708.2	6.5
120°-130°	2833.3	10.8
130°-140°	3009.6	11.4
140°-150°	2797.1	10.6
150°-160°	2248.8	8.5
160°-170°	1449.0	5.5
170°-180°	498.7	1.9
0°-30°	3228.3	12.3
0°-40°	5178.7	19.7
0°-60°	8825.5	33.5
0°-90°	10988.3	41.7
90°-120°	2525.1	9.6
90°-150°	11165.0	42.4
90°-180°	15362.0	58.3
0°-180°	26349.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4315	4315	4315	4315	4315	
5°	4315	4299	4253	4286	4278	410
15°	4108	4083	4029	4046	4025	1157
25°	3718	3685	3614	3622	3614	1711
35°	3208	3166	3100	3075	3054	2003
45°	2610	2581	2518	2473	2456	2014
55°	1975	1950	1900	1851	1830	1766
65°	1332	1307	1266	1228	1208	1317
75°	697	689	668	643	652	744
85°	170	166	162	149	145	190
90°	4	46	76	95	102	24
95°	246	121	148	167	163	292
105°	1153	1266	231	273	288	1231
115°	2180	2244	2339	584	311	2146
125°	3082	3132	3204	3230	3242	2749
135°	3814	3875	3909	3947	3940	2947
145°	4425	4421	4485	4512	4493	2767
155°	4872	4838	4884	4906	4876	2245
165°	5134	5111	5122	5149	5122	1450
175°	5251	5224	5232	5259	5221	500
180°	5240	5240	5240	5240	5240	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4315.2	4315.2	4315.2	4315.2	4315.2
2.5°	4340.3	4319.6	4273.8	4315.2	4307.2
5°	4315.2	4298.9	4253.1	4286.2	4278.2
7.5°	4286.2	4261.4	4215.6	4249.1	4240.8
10°	4240.8	4211.8	4162.0	4195.0	4182.7
12.5°	4178.3	4153.6	4103.9	4124.6	4116.2
15°	4107.8	4083.2	4029.0	4045.7	4025.1
17.5°	4020.7	3996.1	3941.8	3962.6	3941.8
20°	3925.1	3900.5	3842.4	3854.7	3838.4
22.5°	3830.0	3792.7	3738.4	3738.4	3730.1
25°	3717.8	3684.8	3614.3	3622.2	3614.3
27.5°	3593.2	3564.1	3510.4	3498.1	3477.4
30°	3469.1	3435.6	3373.5	3361.2	3344.4
32.5°	3336.1	3311.5	3244.9	3219.9	3203.1
35°	3207.6	3166.2	3099.7	3074.6	3053.9
37.5°	3062.3	3024.8	2958.4	2929.3	2908.6
40°	2913.0	2879.5	2813.1	2776.2	2759.4
42.5°	2767.7	2734.2	2668.3	2626.4	2601.8
45°	2610.1	2581.1	2518.5	2473.2	2456.5
47.5°	2456.5	2427.5	2361.0	2315.1	2290.5
50°	2294.5	2273.8	2215.7	2157.6	2136.9
52.5°	2136.9	2107.9	2054.1	2008.4	1979.3
55°	1975.4	1950.3	1900.5	1850.7	1830.1
57.5°	1813.3	1792.6	1738.5	1688.8	1672.0
60°	1651.3	1635.0	1576.9	1531.1	1518.8
62.5°	1493.7	1464.7	1423.3	1381.9	1365.2
65°	1332.1	1307.1	1265.7	1228.2	1207.6
67.5°	1166.2	1145.0	1108.1	1079.1	1062.3
70°	1012.5	995.8	958.4	929.3	913.0
72.5°	854.9	838.2	817.6	788.5	776.1
75°	696.9	689.0	667.8	643.2	651.5
77.5°	556.1	539.3	530.9	518.6	506.3
80°	415.1	410.8	402.3	390.0	381.7
82.5°	282.2	282.2	278.2	261.5	261.5
85°	169.9	166.0	162.0	149.3	145.3
87.5°	74.9	66.4	58.1	45.8	41.4
90°	3.5	45.5	75.6	95.0	102.2
92.5°	95.0	79.7	90.9	98.6	102.2
95°	246.3	121.1	147.7	167.0	163.0
97.5°	443.5	132.9	193.2	204.8	208.5
100°	671.3	151.7	216.1	246.3	254.0
102.5°	921.1	913.9	223.8	265.2	276.9
105°	1152.6	1266.5	231.4	272.8	288.1
107.5°	1421.8	1516.3	239.1	280.5	295.8
110°	1679.8	1759.1	663.6	284.6	299.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1922.5	1990.4	1926.1	291.8	303.4
115°	2180.1	2244.4	2339.4	584.0	311.1
117.5°	2403.8	2479.4	2544.3	2001.7	1008.5
120°	2654.2	2710.8	2779.3	2824.7	2312.8
122.5°	2866.2	2927.0	3003.1	3025.6	3029.7
125°	3082.4	3131.8	3203.9	3230.4	3241.7
127.5°	3279.5	3332.7	3389.8	3427.6	3431.2
130°	3465.4	3526.3	3567.7	3609.6	3605.9
132.5°	3655.0	3704.5	3746.0	3780.1	3776.6
135°	3814.4	3875.2	3908.9	3947.2	3939.5
137.5°	3981.0	4026.4	4064.7	4102.5	4091.3
140°	4144.0	4174.6	4216.0	4250.2	4231.3
142.5°	4280.9	4307.4	4356.5	4386.6	4367.7
145°	4424.9	4420.8	4485.2	4511.9	4492.9
147.5°	4549.7	4538.4	4602.8	4621.6	4606.8
150°	4671.2	4644.6	4705.4	4727.9	4709.0
152.5°	4773.4	4743.2	4800.0	4822.9	4796.3
155°	4871.9	4838.2	4883.7	4906.2	4876.1
157.5°	4951.7	4921.5	4955.8	4982.3	4951.7
160°	5020.1	4997.2	5020.1	5042.6	5016.1
162.5°	5080.4	5057.9	5076.9	5103.4	5069.2
165°	5133.6	5111.0	5122.4	5148.9	5122.4
167.5°	5175.5	5152.5	5164.2	5190.8	5156.5
170°	5209.6	5186.7	5194.3	5221.0	5186.7
172.5°	5232.2	5209.6	5217.3	5243.9	5209.6
175°	5251.1	5224.5	5232.2	5258.8	5221.0
177.5°	5258.8	5232.2	5236.3	5262.8	5228.6
180°	5239.8	5239.8	5239.8	5239.8	5239.8

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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	10.31	11.11	11.34	12.14	13.52	9.87	10.66	10.90	11.69	13.08
	3H	11.97	12.68	13.01	13.73	15.13	11.48	12.19	12.52	13.24	14.64
	4H	12.56	13.23	13.61	14.28	15.69	12.07	12.74	13.11	13.78	15.20
	6H	12.96	13.58	14.02	14.63	16.05	12.46	13.08	13.52	14.13	15.55
	8H	13.07	13.65	14.13	14.72	16.14	12.56	13.15	13.63	14.22	15.64
	12H	13.11	13.67	14.18	14.73	16.18	12.60	13.16	13.67	14.22	15.67
4H	2H	10.77	11.44	11.82	12.48	13.90	10.41	11.09	11.47	12.13	13.54
	3H	12.63	13.19	13.69	14.27	15.69	12.22	12.79	13.29	13.86	15.28
	4H	13.35	13.86	14.41	14.92	16.37	12.92	13.44	13.99	14.50	15.95
	6H	13.86	14.30	14.94	15.39	16.83	13.43	13.87	14.51	14.96	16.40
	8H	14.01	14.43	15.09	15.50	16.96	13.58	13.99	14.65	15.07	16.52
	12H	14.08	14.46	15.18	15.55	17.01	13.63	14.01	14.73	15.10	16.56
8H	4H	13.54	13.95	14.62	15.03	16.49	13.16	13.57	14.24	14.65	16.11
	6H	14.17	14.51	15.27	15.63	17.09	13.79	14.13	14.89	15.25	16.70
	8H	14.39	14.69	15.50	15.80	17.27	14.00	14.30	15.11	15.40	16.88
	12H	14.53	14.79	15.64	15.89	17.40	14.11	14.38	15.23	15.48	16.99
12H	4H	13.52	13.89	14.62	14.99	16.45	13.15	13.53	14.25	14.62	16.08
	6H	14.20	14.50	15.31	15.60	17.08	13.83	14.13	14.94	15.23	16.71
	8H	14.44	14.71	15.55	15.80	17.32	14.06	14.33	15.17	15.42	16.94

END OF REPORT