

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: P906909

Luminaire Tested: DFN2DIP-SQ4F0-120D140US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906909
REPORT IS A COMBINATION OF REPORTS P901717 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-120D140US835-FLLONL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

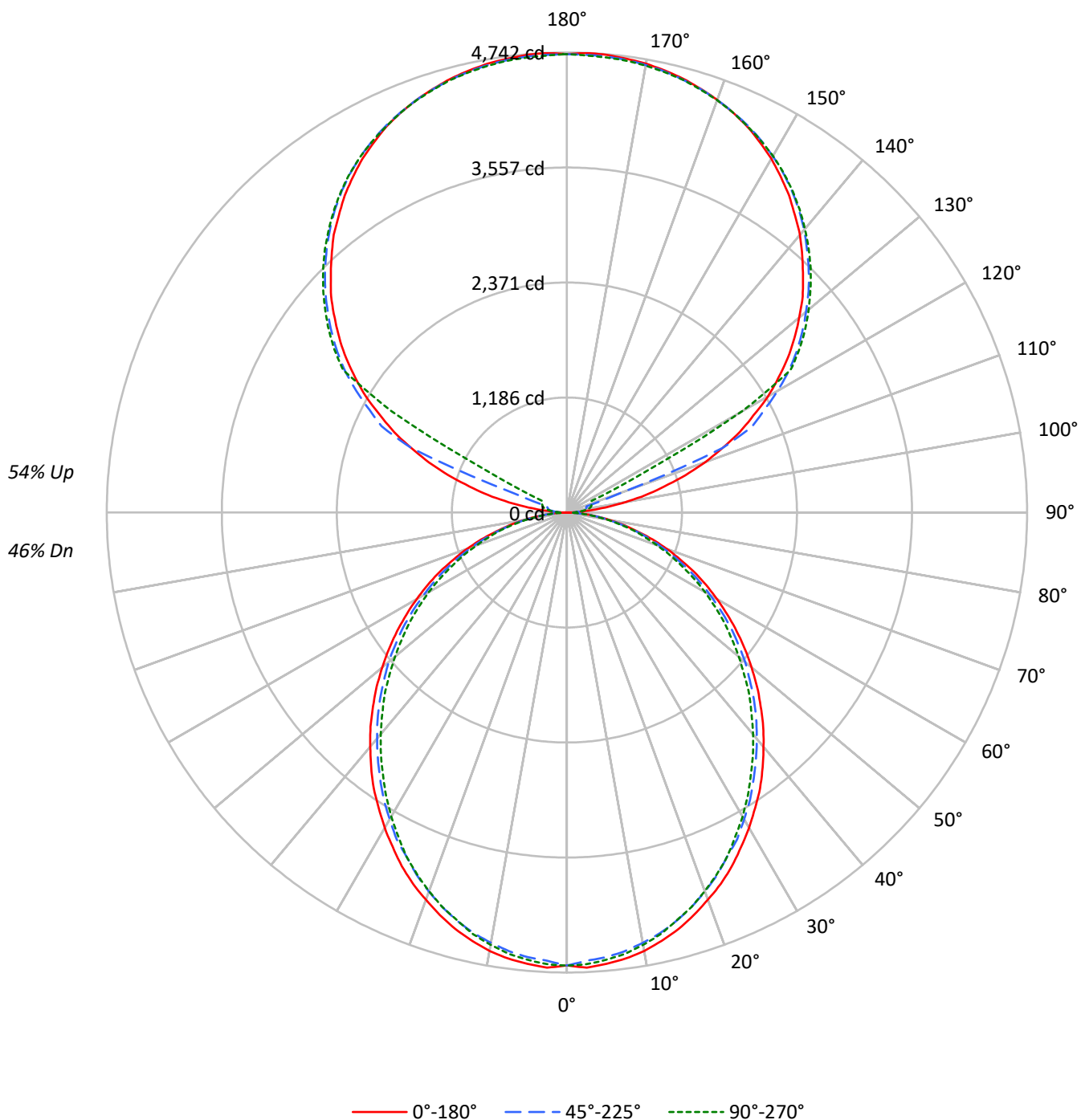
Lumens per Lamp: N/A
Luminaire Lumens: 25740.0 lumens
Efficiency: N/A
Efficacy: 115.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 223.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P906909

CATALOG NUMBER: DFN2DIP-SQ4F0-120D140US835-FLLONL

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	98	98	98	98	81	81	81	66	66	66	53	53	53
1	97	93	89	85	89	85	82	79	71	69	67	58	57	55	46	45	44
2	88	81	75	70	81	74	69	65	62	59	55	51	48	46	41	39	37
3	81	71	64	58	74	66	59	54	55	50	46	45	42	39	36	34	32
4	74	63	55	49	67	58	51	46	49	44	40	40	37	33	32	30	27
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	29	26	24
6	62	50	42	36	57	46	39	34	39	34	30	33	29	25	26	23	21
7	58	45	37	32	53	42	35	30	36	30	26	30	26	22	24	21	19
8	53	41	33	28	49	38	31	26	33	27	23	27	23	20	22	19	17
9	50	38	30	25	46	35	28	24	30	24	21	25	21	18	21	17	15
10	46	34	27	22	43	32	26	21	27	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3276	3276	3276
5°	3282	3231	3253
10°	3255	3188	3210
15°	3207	3137	3142
20°	3142	3064	3073
25°	3078	2978	2992
30°	2997	2897	2890
35°	2921	2802	2781
40°	2827	2706	2678
45°	2733	2610	2572
50°	2630	2509	2449
55°	2523	2392	2337
60°	2401	2254	2209
65°	2269	2110	2057
70°	2100	1935	1894
75°	1867	1726	1745
80°	1586	1460	1458
85°	1146	999	980

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2733 cd/sqm

TEST NUMBER: P906909

CATALOG NUMBER: DFN2DIP-SQ4F0-120D140US835-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	439.5	1.7
10°-20°	1236.5	4.8
20°-30°	1817.2	7.1
30°-40°	2110.5	8.2
40°-50°	2107.9	8.2
50°-60°	1838.0	7.1
60°-70°	1358.7	5.3
70°-80°	768.7	3.0
80°-90°	211.2	0.8
90°-100°	155.8	0.6
100°-110°	580.8	2.3
110°-120°	1540.3	6.0
120°-130°	2554.8	9.9
130°-140°	2713.8	10.5
140°-150°	2522.1	9.8
150°-160°	2027.7	7.9
160°-170°	1306.6	5.1
170°-180°	449.7	1.7
0°-30°	3493.1	13.6
0°-40°	5603.7	21.8
0°-60°	9549.6	37.1
0°-90°	11888.3	46.2
90°-120°	2276.9	8.8
90°-150°	10067.6	39.1
90°-180°	13852.0	53.8
0°-180°	25740.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4669	4669	4669	4669	4669	
5°	4669	4652	4602	4638	4629	443
15°	4445	4418	4360	4378	4355	1252
25°	4023	3987	3911	3920	3911	1851
35°	3471	3426	3354	3327	3304	2167
45°	2824	2793	2725	2676	2658	2180
55°	2137	2110	2056	2003	1980	1911
65°	1442	1414	1370	1329	1307	1425
75°	754	746	723	696	705	805
85°	184	180	175	162	157	205
90°	3	41	68	86	92	24
95°	222	109	133	151	147	263
105°	1039	1142	209	246	260	1110
115°	1966	2024	2110	527	280	1935
125°	2779	2824	2889	2913	2923	2479
135°	3440	3494	3525	3559	3552	2657
145°	3990	3986	4044	4068	4051	2495
155°	4393	4363	4404	4424	4397	2024
165°	4629	4609	4619	4643	4619	1308
175°	4735	4711	4718	4742	4708	451
180°	4725	4725	4725	4725	4725	

TEST NUMBER: P906909

CATALOG NUMBER: DFN2DIP-SQ4F0-120D140US835-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4669.3	4669.3	4669.3	4669.3	4669.3
2.5°	4696.4	4674.0	4624.5	4669.3	4660.7
5°	4669.3	4651.6	4602.1	4637.8	4629.2
7.5°	4637.8	4611.1	4561.6	4597.8	4588.8
10°	4588.8	4557.3	4503.5	4539.2	4525.9
12.5°	4521.1	4494.4	4440.6	4463.0	4453.9
15°	4444.9	4418.2	4359.6	4377.7	4355.3
17.5°	4350.6	4323.9	4265.3	4287.7	4265.3
20°	4247.2	4220.5	4157.7	4171.0	4153.4
22.5°	4144.3	4103.8	4045.2	4045.2	4036.2
25°	4022.8	3987.1	3910.9	3919.5	3910.9
27.5°	3888.0	3856.6	3798.5	3785.1	3762.8
30°	3753.7	3717.5	3650.3	3637.0	3618.9
32.5°	3609.8	3583.2	3511.2	3484.1	3466.0
35°	3470.7	3426.0	3354.0	3326.9	3304.5
37.5°	3313.5	3273.1	3201.1	3169.7	3147.3
40°	3152.1	3115.9	3043.9	3003.9	2985.8
42.5°	2994.9	2958.7	2887.2	2842.0	2815.3
45°	2824.3	2792.9	2725.2	2676.2	2658.1
47.5°	2658.1	2626.6	2554.7	2505.2	2478.5
50°	2482.8	2460.4	2397.5	2334.6	2312.2
52.5°	2312.2	2280.8	2222.7	2173.1	2141.7
55°	2137.4	2110.3	2056.4	2002.6	1980.2
57.5°	1962.1	1939.7	1881.1	1827.3	1809.2
60°	1786.8	1769.2	1706.3	1656.8	1643.4
62.5°	1616.3	1584.8	1540.1	1495.3	1477.2
65°	1441.5	1414.3	1369.5	1329.0	1306.7
67.5°	1261.9	1239.0	1199.0	1167.6	1149.5
70°	1095.6	1077.5	1037.0	1005.6	988.0
72.5°	925.1	907.0	884.6	853.2	839.8
75°	754.1	745.5	722.6	696.0	705.0
77.5°	601.6	583.5	574.5	561.1	547.8
80°	449.2	444.4	435.4	422.1	413.0
82.5°	305.3	305.3	301.1	283.0	283.0
85°	183.9	179.6	175.3	161.5	157.2
87.5°	81.0	71.9	62.9	49.5	44.8
90°	3.2	41.0	68.2	85.7	92.2
92.5°	85.7	71.9	82.0	88.9	92.2
95°	222.1	109.2	133.2	150.6	147.0
97.5°	399.9	119.8	174.2	184.7	188.0
100°	605.3	136.8	194.9	222.1	229.0
102.5°	830.6	824.1	201.8	239.1	249.7
105°	1039.3	1142.0	208.7	246.0	259.8
107.5°	1282.1	1367.3	215.6	252.9	266.7
110°	1514.7	1586.2	598.4	256.6	270.0

TEST NUMBER: P906909

CATALOG NUMBER: DFN2DIP-SQ4F0-120D140US835-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1733.5	1794.8	1736.8	263.1	273.6
115°	1965.8	2023.8	2109.5	526.6	280.5
117.5°	2167.5	2235.7	2294.2	1805.0	909.4
120°	2393.3	2444.4	2506.1	2547.1	2085.5
122.5°	2584.5	2639.3	2707.9	2728.2	2731.9
125°	2779.4	2824.0	2889.0	2912.9	2923.1
127.5°	2957.2	3005.1	3056.6	3090.7	3094.0
130°	3124.8	3179.7	3217.0	3254.8	3251.5
132.5°	3295.8	3340.4	3377.8	3408.6	3405.4
135°	3439.5	3494.3	3524.7	3559.2	3552.3
137.5°	3589.7	3630.7	3665.2	3699.3	3689.2
140°	3736.7	3764.3	3801.6	3832.5	3815.4
142.5°	3860.1	3884.0	3928.3	3955.5	3938.4
145°	3990.0	3986.3	4044.4	4068.4	4051.3
147.5°	4102.5	4092.3	4150.4	4167.4	4154.0
150°	4212.1	4188.1	4242.9	4263.2	4246.2
152.5°	4304.2	4277.0	4328.2	4348.9	4324.9
155°	4393.1	4362.7	4403.7	4424.0	4396.8
157.5°	4465.0	4437.8	4468.7	4492.6	4465.0
160°	4526.7	4506.0	4526.7	4547.0	4523.1
162.5°	4581.1	4560.8	4577.9	4601.8	4571.0
165°	4629.0	4608.7	4618.9	4642.8	4618.9
167.5°	4666.8	4646.1	4656.6	4680.6	4649.7
170°	4697.6	4676.9	4683.8	4707.8	4676.9
172.5°	4717.9	4697.6	4704.5	4728.5	4697.6
175°	4735.0	4711.0	4717.9	4741.9	4707.8
177.5°	4741.9	4717.9	4721.6	4745.5	4714.7
180°	4724.8	4724.8	4724.8	4724.8	4724.8

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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	11.04	11.87	12.03	12.87	14.20	10.60	11.43	11.59	12.43	13.75
	3H	12.71	13.45	13.71	14.46	15.80	12.22	12.96	13.22	13.97	15.31
	4H	13.30	14.00	14.31	15.01	16.37	12.80	13.50	13.81	14.52	15.87
	6H	13.70	14.34	14.72	15.36	16.73	13.20	13.84	14.22	14.86	16.23
	8H	13.80	14.42	14.83	15.45	16.82	13.30	13.92	14.33	14.95	16.31
	12H	13.85	14.44	14.89	15.47	16.85	13.34	13.93	14.38	14.96	16.34
4H	2H	11.50	12.20	12.52	13.22	14.57	11.15	11.85	12.17	12.86	14.22
	3H	13.37	13.96	14.40	15.00	16.37	12.96	13.55	13.99	14.59	15.96
	4H	14.09	14.62	15.12	15.66	17.05	13.66	14.20	14.70	15.23	16.62
	6H	14.60	15.07	15.65	16.12	17.51	14.17	14.63	15.22	15.69	17.08
	8H	14.75	15.19	15.80	16.24	17.64	14.32	14.75	15.36	15.80	17.20
	12H	14.83	15.22	15.89	16.28	17.69	14.38	14.77	15.44	15.83	17.24
8H	4H	14.28	14.71	15.33	15.76	17.16	13.90	14.34	14.95	15.39	16.79
	6H	14.91	15.27	15.98	16.36	17.76	14.53	14.89	15.60	15.98	17.38
	8H	15.14	15.45	16.22	16.53	17.95	14.75	15.06	15.82	16.14	17.55
	12H	15.27	15.55	16.35	16.62	18.08	14.86	15.14	15.94	16.21	17.67
12H	4H	14.26	14.65	15.33	15.72	17.12	13.90	14.29	14.96	15.35	16.76
	6H	14.94	15.26	16.02	16.33	17.75	14.57	14.89	15.65	15.96	17.38
	8H	15.19	15.46	16.27	16.54	17.99	14.81	15.08	15.89	16.16	17.61

END OF REPORT