

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: P925975

Luminaire Tested: DFN2DIP-SQ4F0-110D160US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925975
REPORT IS A COMBINATION OF REPORTS P901734 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-110D160US950-RLLONL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

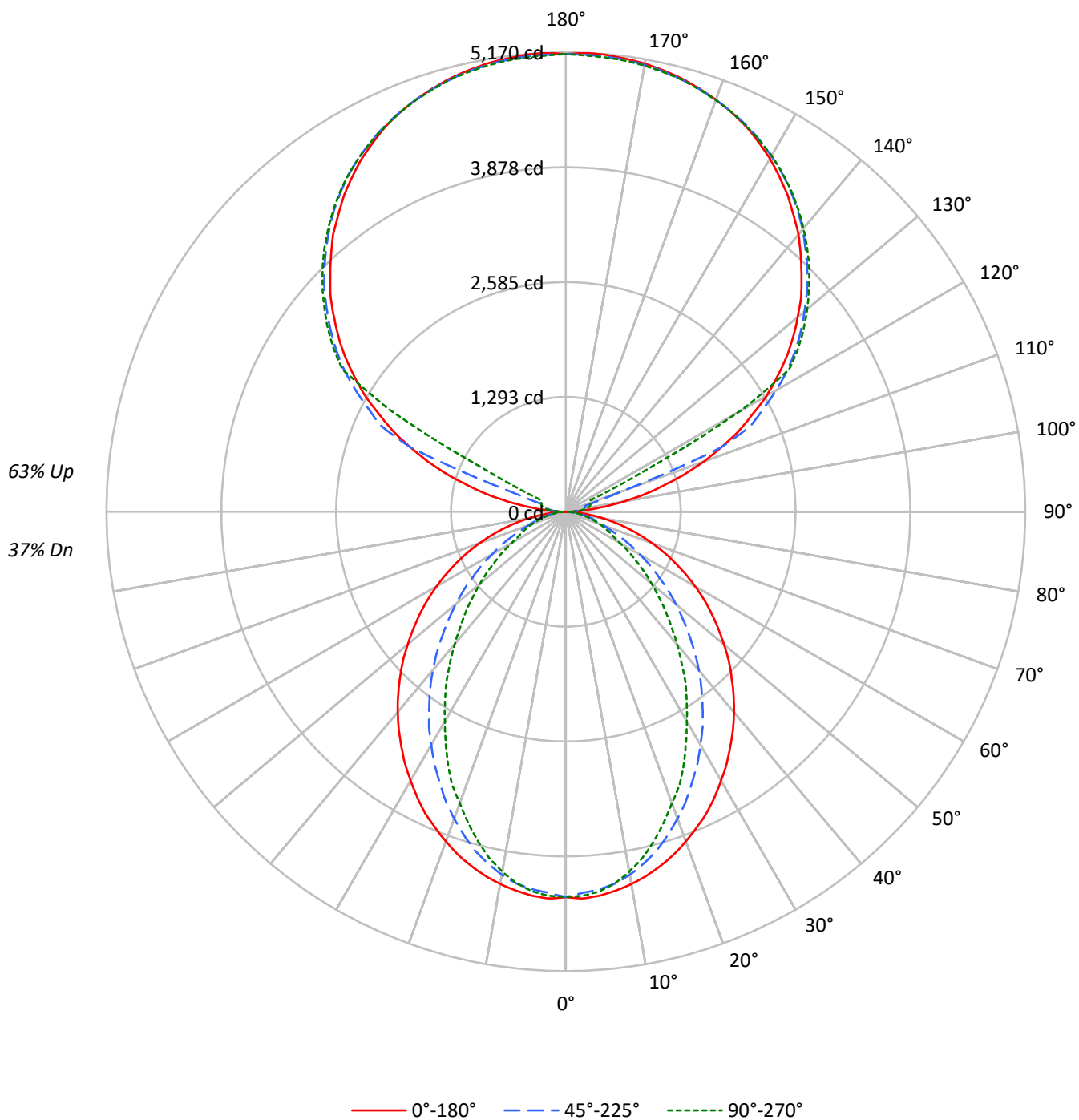
Lumens per Lamp: N/A
Luminaire Lumens: 24031.3 lumens
Efficiency: N/A
Efficacy: 105.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 227.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P925975

CATALOG NUMBER: DFN2DIP-SQ4F0-110D160US950-RLLONL

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	76	76	76	60	60	60	44	44	44
1	95	91	87	84	86	83	80	77	67	65	63	53	52	50	40	39	38
2	87	80	74	69	79	73	68	64	59	56	53	47	45	42	35	34	33
3	80	71	64	58	72	64	58	54	53	48	45	42	39	36	32	30	28
4	73	63	55	49	66	57	51	46	47	42	38	37	34	31	29	26	25
5	67	56	48	42	61	51	44	39	42	37	33	34	30	27	26	23	22
6	62	50	42	37	56	46	39	34	38	33	29	31	27	24	24	21	19
7	57	45	38	32	52	42	35	30	35	29	26	28	24	21	22	19	17
8	53	41	34	29	48	38	31	27	31	26	23	26	22	19	20	17	15
9	49	38	30	26	45	35	28	24	29	24	21	23	20	17	18	16	14
10	46	34	28	23	42	32	26	21	27	22	19	22	18	16	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3043	3043	3043
5°	3048	2996	3015
10°	3018	2937	2918
15°	2976	2841	2767
20°	2921	2708	2582
25°	2865	2558	2402
30°	2789	2405	2175
35°	2715	2240	1975
40°	2640	2069	1746
45°	2552	1880	1538
50°	2462	1688	1335
55°	2367	1484	1140
60°	2258	1270	939
65°	2132	1052	846
70°	1979	850	767
75°	1787	750	700
80°	1510	631	610
85°	1051	425	464

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2762 cd/sqm

TEST NUMBER: P925975

CATALOG NUMBER: DFN2DIP-SQ4F0-110D160US950-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	406.5	1.7
10°-20°	1115.9	4.6
20°-30°	1566.7	6.5
30°-40°	1707.7	7.1
40°-50°	1569.6	6.5
50°-60°	1232.7	5.1
60°-70°	802.4	3.3
70°-80°	413.0	1.7
80°-90°	114.5	0.5
90°-100°	169.9	0.7
100°-110°	633.2	2.6
110°-120°	1679.4	7.0
120°-130°	2785.4	11.6
130°-140°	2958.8	12.3
140°-150°	2749.9	11.4
150°-160°	2210.8	9.2
160°-170°	1424.6	5.9
170°-180°	490.3	2.0
0°-30°	3089.0	12.9
0°-40°	4796.8	20.0
0°-60°	7599.1	31.6
0°-90°	8929.0	37.2
90°-120°	2482.5	10.3
90°-150°	10976.6	45.7
90°-180°	15102.0	62.8
0°-180°	24031.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4337	4337	4337	4337	4337	
5°	4337	4318	4266	4302	4290	411
15°	4125	4082	3949	3874	3835	1162
25°	3744	3619	3360	3199	3140	1722
35°	3226	3026	2681	2434	2347	2019
45°	2638	2374	1963	1684	1590	2037
55°	2006	1700	1276	1040	966	1792
65°	1354	1036	683	550	538	1343
75°	722	447	314	286	283	764
85°	169	86	74	74	74	194
90°	4	45	74	93	100	22
95°	242	119	145	164	160	287
105°	1133	1245	228	268	283	1211
115°	2143	2206	2300	574	306	2110
125°	3030	3079	3150	3176	3187	2703
135°	3750	3810	3843	3881	3873	2897
145°	4350	4346	4410	4436	4417	2721
155°	4790	4756	4801	4823	4794	2207
165°	5047	5025	5036	5062	5036	1426
175°	5162	5136	5144	5170	5133	491
180°	5151	5151	5151	5151	5151	

TEST NUMBER: P925975

CATALOG NUMBER: DFN2DIP-SQ4F0-110D160US950-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4337.2	4337.2	4337.2	4337.2	4337.2
2.5°	4356.7	4337.2	4293.9	4333.4	4325.5
5°	4337.2	4317.6	4266.4	4301.8	4290.1
7.5°	4301.8	4278.4	4223.5	4238.9	4219.3
10°	4254.7	4227.2	4148.9	4136.8	4113.6
12.5°	4196.0	4160.6	4054.4	4031.0	3987.7
15°	4125.2	4081.9	3948.6	3874.1	3834.9
17.5°	4042.8	3979.9	3815.0	3728.7	3665.8
20°	3948.6	3869.9	3673.8	3575.9	3489.3
22.5°	3846.6	3756.2	3528.5	3395.2	3336.4
25°	3744.5	3618.8	3359.8	3199.0	3139.9
27.5°	3623.0	3489.3	3202.8	3018.3	2927.9
30°	3493.5	3344.0	3030.0	2830.0	2723.9
32.5°	3367.7	3186.9	2865.4	2629.8	2531.5
35°	3226.5	3026.2	2681.0	2433.7	2347.0
37.5°	3089.1	2873.0	2508.2	2237.0	2139.2
40°	2943.8	2708.5	2327.5	2048.8	1946.8
42.5°	2794.6	2543.6	2147.2	1856.5	1758.6
45°	2637.7	2374.5	1962.7	1683.6	1589.6
47.5°	2488.6	2210.0	1786.1	1507.0	1420.9
50°	2323.7	2045.1	1613.3	1342.2	1260.1
52.5°	2162.5	1868.1	1448.4	1189.4	1114.7
55°	2005.5	1699.5	1275.5	1040.2	965.7
57.5°	1844.8	1530.8	1122.7	902.9	839.9
60°	1679.9	1365.9	961.5	761.7	698.8
62.5°	1519.1	1205.2	824.2	635.9	604.6
65°	1354.2	1036.0	683.0	549.7	537.6
67.5°	1197.3	879.1	549.7	482.6	471.0
70°	1032.3	726.3	455.2	416.0	400.2
72.5°	875.3	584.7	380.6	349.4	341.4
75°	722.1	447.2	314.0	286.5	282.8
77.5°	569.3	317.8	247.4	231.5	223.6
80°	427.7	227.8	188.2	172.9	172.9
82.5°	298.1	153.2	129.6	121.6	121.6
85°	168.7	86.2	74.5	74.5	74.5
87.5°	62.9	31.2	31.2	27.5	27.5
90°	3.5	44.7	74.3	93.4	100.5
92.5°	93.4	78.3	89.4	96.9	100.5
95°	242.1	119.1	145.2	164.2	160.3
97.5°	436.0	130.6	189.8	201.4	204.9
100°	660.0	149.2	212.5	242.1	249.7
102.5°	905.6	898.6	220.0	260.7	272.2
105°	1133.2	1245.2	227.5	268.3	283.2
107.5°	1397.8	1490.8	235.1	275.8	290.8
110°	1651.5	1729.4	652.4	279.7	294.3

TEST NUMBER: P925975

CATALOG NUMBER: DFN2DIP-SQ4F0-110D160US950-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1890.1	1956.9	1893.6	286.9	298.3
115°	2143.3	2206.5	2299.9	574.1	305.9
117.5°	2363.2	2437.6	2501.4	1968.0	991.5
120°	2609.4	2665.1	2732.4	2777.1	2273.9
122.5°	2817.8	2877.6	2952.3	2974.5	2978.5
125°	3030.3	3078.9	3149.8	3176.0	3187.0
127.5°	3224.1	3276.4	3332.6	3369.8	3373.3
130°	3407.0	3466.7	3507.5	3548.6	3545.1
132.5°	3593.3	3642.0	3682.7	3716.4	3712.9
135°	3750.0	3809.8	3843.0	3880.6	3873.0
137.5°	3913.8	3958.5	3996.1	4033.3	4022.3
140°	4074.1	4104.1	4144.8	4178.5	4159.9
142.5°	4208.6	4234.7	4283.0	4312.7	4294.0
145°	4350.2	4346.2	4409.6	4435.6	4417.1
147.5°	4472.8	4461.8	4525.1	4543.7	4529.0
150°	4592.4	4566.2	4626.0	4648.2	4629.6
152.5°	4692.8	4663.2	4719.0	4741.6	4715.4
155°	4789.7	4756.5	4801.3	4823.4	4793.8
157.5°	4868.2	4838.5	4872.1	4898.2	4868.2
160°	4935.4	4912.8	4935.4	4957.6	4931.4
162.5°	4994.8	4972.6	4991.1	5017.3	4983.7
165°	5046.9	5024.8	5035.9	5062.0	5035.9
167.5°	5088.2	5065.5	5077.1	5103.1	5069.6
170°	5121.7	5099.2	5106.7	5132.8	5099.2
172.5°	5143.9	5121.7	5129.3	5155.4	5121.7
175°	5162.5	5136.3	5143.9	5170.0	5132.8
177.5°	5170.0	5143.9	5147.9	5174.0	5140.3
180°	5151.4	5151.4	5151.4	5151.4	5151.4

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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	9.69	10.43	10.76	11.49	12.94	5.66	6.39	6.72	7.46	8.90
	3H	11.37	12.03	12.44	13.10	14.56	6.84	7.49	7.91	8.57	10.03
	4H	11.98	12.60	13.06	13.67	15.14	7.28	7.91	8.37	8.98	10.45
	6H	12.40	12.97	13.49	14.05	15.53	7.60	8.17	8.70	9.25	10.73
	8H	12.52	13.07	13.62	14.16	15.64	7.69	8.23	8.79	9.33	10.80
	12H	12.58	13.10	13.69	14.19	15.69	7.73	8.25	8.83	9.33	10.83
4H	2H	9.70	10.32	10.79	11.40	12.87	6.24	6.87	7.34	7.94	9.41
	3H	11.53	12.04	12.63	13.15	14.63	7.58	8.10	8.68	9.20	10.69
	4H	12.22	12.69	13.32	13.79	15.29	8.13	8.60	9.23	9.70	11.20
	6H	12.73	13.14	13.84	14.25	15.75	8.54	8.95	9.66	10.07	11.56
	8H	12.91	13.29	14.02	14.40	15.91	8.67	9.05	9.78	10.16	11.67
	12H	13.00	13.35	14.13	14.47	15.98	8.73	9.08	9.86	10.20	11.71
8H	4H	12.18	12.56	13.29	13.67	15.18	8.40	8.78	9.52	9.89	11.40
	6H	12.75	13.06	13.88	14.21	15.72	8.92	9.23	10.05	10.38	11.89
	8H	12.97	13.24	14.11	14.37	15.90	9.11	9.39	10.25	10.52	12.05
	12H	13.10	13.34	14.25	14.47	16.04	9.23	9.47	10.37	10.60	12.16
12H	4H	12.13	12.47	13.26	13.59	15.11	8.41	8.75	9.53	9.87	11.39
	6H	12.72	13.00	13.86	14.13	15.66	8.97	9.25	10.11	10.38	11.91
	8H	12.94	13.18	14.08	14.31	15.88	9.18	9.42	10.32	10.55	12.11

END OF REPORT