

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: P919836

Luminaire Tested: DFN2DIP-SQ2F0-030D030US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919836
REPORT IS A COMBINATION OF REPORTS P899771 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-030D030US935-FLLFLL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

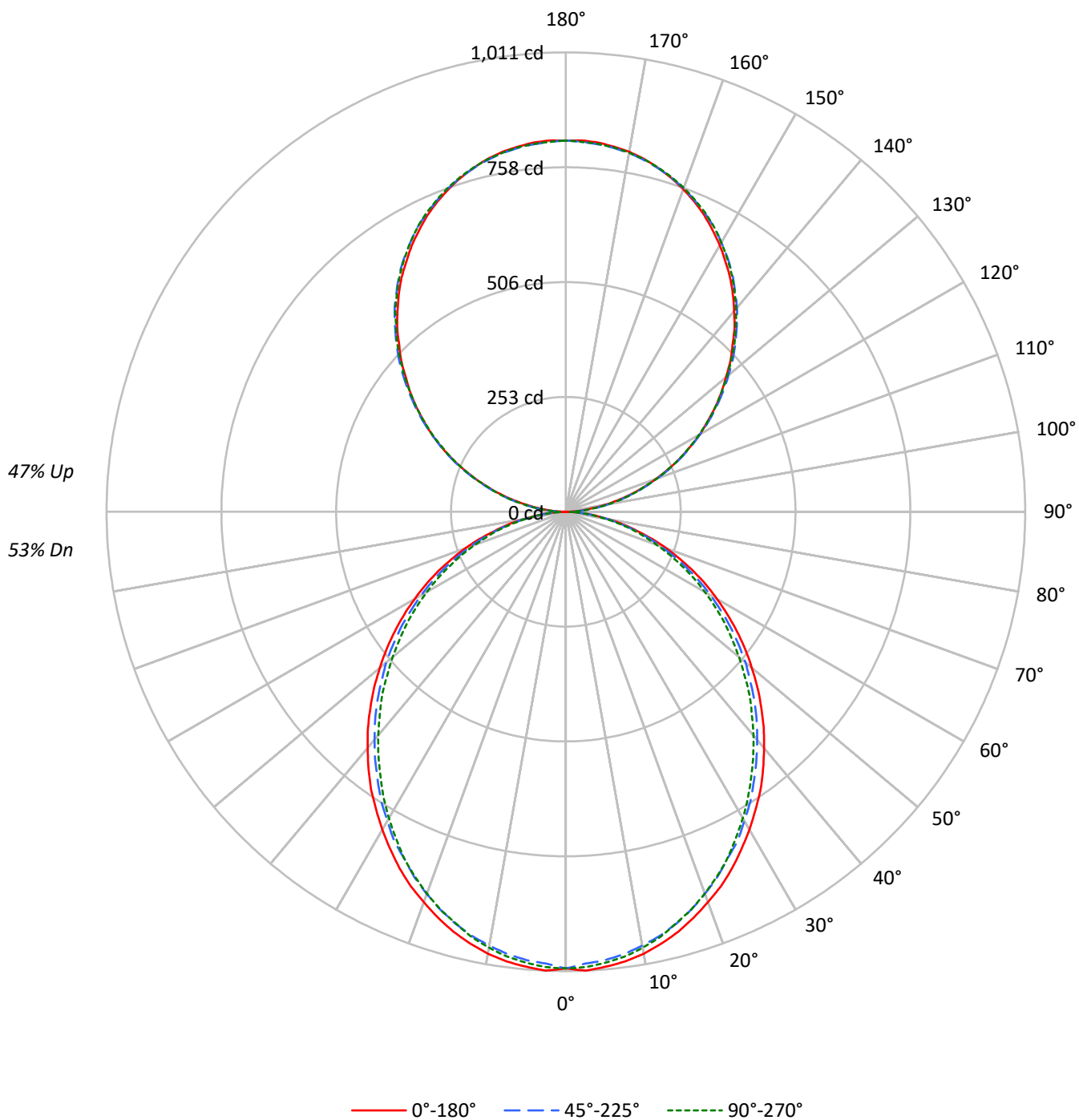
Lumens per Lamp: N/A
Luminaire Lumens: 4843.1 lumens
Efficiency: N/A
Efficacy: 105.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 45.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P919836

CATALOG NUMBER: DFN2DIP-SQ2F0-030D030US935-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P919836

CATALOG NUMBER: DFN2DIP-SQ2F0-030D030US935-FLLFLL

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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2210	2210	2210
5°	2210	2174	2191
10°	2188	2140	2158
15°	2152	2100	2109
20°	2105	2046	2058
25°	2057	1983	2000
30°	1999	1924	1927
35°	1944	1855	1851
40°	1876	1785	1777
45°	1809	1715	1702
50°	1735	1641	1616
55°	1657	1555	1535
60°	1569	1454	1443
65°	1472	1349	1334
70°	1349	1221	1216
75°	1180	1067	1104
80°	975	871	896
85°	659	550	562

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1809 cd/sqm

TEST NUMBER: P919836

CATALOG NUMBER: DFN2DIP-SQ2F0-030D030US935-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.6	2.0
10°-20°	266.2	5.5
20°-30°	391.1	8.1
30°-40°	454.3	9.4
40°-50°	453.7	9.4
50°-60°	395.6	8.2
60°-70°	292.5	6.0
70°-80°	165.5	3.4
80°-90°	46.0	0.9
90°-100°	50.6	1.0
100°-110°	160.6	3.3
110°-120°	274.9	5.7
120°-130°	361.5	7.5
130°-140°	405.7	8.4
140°-150°	397.9	8.2
150°-160°	333.8	6.9
160°-170°	221.3	4.6
170°-180°	77.4	1.6
0°-30°	751.9	15.5
0°-40°	1206.2	24.9
0°-60°	2055.6	42.4
0°-90°	2559.5	52.8
90°-120°	486.0	10.0
90°-150°	1651.1	34.1
90°-180°	2284.0	47.2
0°-180°	4843.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1005	1005	1005	1005	1005	
5°	1005	1001	991	998	996	95
15°	957	951	938	942	938	269
25°	866	858	842	844	842	398
35°	747	737	722	716	711	467
45°	608	601	587	576	572	469
55°	460	454	443	431	426	411
65°	310	304	295	286	281	307
75°	162	160	156	150	152	173
85°	40	39	38	35	34	44
90°	1	9	24	23	23	5
95°	36	43	44	44	43	40
105°	148	150	152	153	153	156
115°	276	280	278	278	276	273
125°	401	407	405	403	402	358
135°	519	526	528	527	525	401
145°	630	635	639	640	637	394
155°	720	722	724	728	726	332
165°	784	783	783	788	784	221
175°	816	814	812	817	813	77
180°	817	817	817	817	817	

TEST NUMBER: P919836

CATALOG NUMBER: DFN2DIP-SQ2F0-030D030US935-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1005.0	1005.0	1005.0	1005.0	1005.0
2.5°	1010.9	1006.1	995.4	1005.0	1003.2
5°	1005.0	1001.3	990.6	998.3	996.4
7.5°	998.3	992.6	981.9	989.7	987.7
10°	987.7	980.9	969.4	977.1	974.2
12.5°	973.2	967.4	955.9	960.6	958.7
15°	956.7	951.1	938.4	942.3	937.5
17.5°	936.4	930.7	918.1	922.9	918.1
20°	914.2	908.4	894.9	897.8	894.0
22.5°	892.1	883.4	870.7	870.7	868.7
25°	865.9	858.2	841.8	843.7	841.8
27.5°	836.9	830.1	817.6	814.8	809.9
30°	808.0	800.2	785.7	782.8	778.9
32.5°	777.1	771.3	755.8	749.9	746.1
35°	747.1	737.4	721.9	716.1	711.3
37.5°	713.3	704.6	689.1	682.3	677.4
40°	678.5	670.7	655.2	646.6	642.7
42.5°	644.6	636.9	621.5	611.7	606.0
45°	608.0	601.1	586.6	576.0	572.1
47.5°	572.1	565.4	549.9	539.2	533.5
50°	534.4	529.6	516.1	502.6	497.7
52.5°	497.7	490.9	478.5	467.8	461.0
55°	460.1	454.3	442.6	431.1	426.3
57.5°	422.3	417.5	404.9	393.3	389.4
60°	384.6	380.8	367.3	356.6	353.8
62.5°	347.9	341.1	331.5	321.8	318.0
65°	310.3	304.4	294.8	286.1	281.3
67.5°	271.6	266.7	258.0	251.3	247.5
70°	235.8	232.0	223.3	216.5	212.7
72.5°	199.1	195.2	190.4	183.7	180.8
75°	162.3	160.5	155.6	149.8	151.8
77.5°	129.5	125.6	123.6	120.8	118.0
80°	96.7	95.7	93.7	90.8	88.9
82.5°	65.7	65.7	64.8	60.9	60.9
85°	39.6	38.7	37.7	34.8	33.8
87.5°	17.4	15.5	13.5	10.7	9.6
90°	0.8	8.9	24.1	22.6	23.4
92.5°	15.2	20.7	21.4	22.1	22.1
95°	36.0	42.9	44.1	44.1	42.9
97.5°	59.8	66.2	69.0	69.0	69.0
100°	87.4	93.1	95.1	95.1	94.4
102.5°	116.5	120.7	123.4	124.2	123.4
105°	148.3	150.2	151.7	152.9	152.9
107.5°	179.8	182.7	182.7	183.2	179.8
110°	210.3	214.3	214.3	214.3	212.3

TEST NUMBER: P919836

CATALOG NUMBER: DFN2DIP-SQ2F0-030D030US935-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	243.3	247.5	246.8	244.8	243.3
115°	275.9	279.7	278.5	277.8	275.9
117.5°	308.1	313.5	310.0	308.1	306.1
120°	340.6	346.0	340.6	340.6	338.4
122.5°	370.1	377.0	373.6	371.6	370.1
125°	401.2	407.3	405.4	403.1	402.4
127.5°	431.4	439.1	436.4	433.4	431.4
130°	459.8	468.6	467.4	466.0	463.2
132.5°	491.5	498.4	498.9	495.5	493.5
135°	518.9	526.5	528.0	527.3	525.3
137.5°	549.4	555.6	556.8	556.4	553.4
140°	576.3	582.5	585.9	585.9	583.2
142.5°	603.9	610.0	612.0	612.8	610.0
145°	630.0	634.9	638.9	639.5	636.9
147.5°	653.4	659.5	662.5	663.7	661.0
150°	677.5	681.7	684.4	686.6	684.4
152.5°	699.0	703.1	706.5	709.3	706.5
155°	720.4	722.3	724.5	728.0	725.8
157.5°	738.8	740.3	741.6	746.5	743.0
160°	755.4	756.8	757.6	761.7	758.8
162.5°	770.6	770.6	771.4	776.0	772.6
165°	783.7	782.9	782.9	787.8	784.4
167.5°	795.5	793.2	793.2	798.1	794.7
170°	804.3	802.4	801.7	806.6	802.4
172.5°	810.5	808.6	807.8	812.7	808.6
175°	815.5	813.5	812.0	816.9	812.7
177.5°	818.1	816.1	814.7	818.9	814.7
180°	816.9	816.9	816.9	816.9	816.9



TEST NUMBER: P919836

CATALOG NUMBER: DFN2DIP-SQ2F0-030D030US935-FLLFLL

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	10.17	11.06	11.10	12.01	13.24	9.73	10.61	10.66	11.56	12.79
	3H	11.81	12.61	12.76	13.57	14.82	11.32	12.12	12.27	13.08	14.33
	4H	12.39	13.14	13.35	14.11	15.37	11.90	12.65	12.85	13.61	14.87
	6H	12.78	13.47	13.74	14.44	15.71	12.28	12.97	13.25	13.94	15.21
	8H	12.87	13.53	13.85	14.52	15.79	12.37	13.03	13.35	14.02	15.29
	12H	12.92	13.54	13.90	14.52	15.82	12.41	13.04	13.39	14.02	15.31
4H	2H	10.62	11.38	11.59	12.34	13.60	10.27	11.02	11.23	11.98	13.25
	3H	12.47	13.10	13.44	14.09	15.37	12.06	12.69	13.03	13.68	14.96
	4H	13.17	13.74	14.15	14.73	16.03	12.75	13.32	13.73	14.31	15.61
	6H	13.67	14.16	14.66	15.17	16.47	13.24	13.73	14.23	14.74	16.04
	8H	13.81	14.27	14.80	15.27	16.59	13.37	13.83	14.37	14.84	16.15
	12H	13.87	14.29	14.89	15.31	16.63	13.43	13.84	14.44	14.86	16.18
8H	4H	13.36	13.82	14.35	14.82	16.14	12.98	13.44	13.97	14.44	15.76
	6H	13.96	14.35	14.99	15.39	16.70	13.58	13.96	14.60	15.01	16.32
	8H	14.17	14.51	15.20	15.54	16.87	13.78	14.12	14.81	15.15	16.48
	12H	14.29	14.59	15.32	15.62	16.99	13.88	14.18	14.92	15.21	16.58
12H	4H	13.34	13.76	14.36	14.78	16.10	12.97	13.39	13.99	14.41	15.73
	6H	13.99	14.33	15.02	15.36	16.69	13.62	13.95	14.65	14.99	16.32
	8H	14.22	14.51	15.25	15.54	16.91	13.84	14.13	14.87	15.16	16.53