

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: P914453

Luminaire Tested: DFN2DIP-SQ2F0-060D030US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914453
REPORT IS A COMBINATION OF REPORTS P901297 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-060D030US927-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

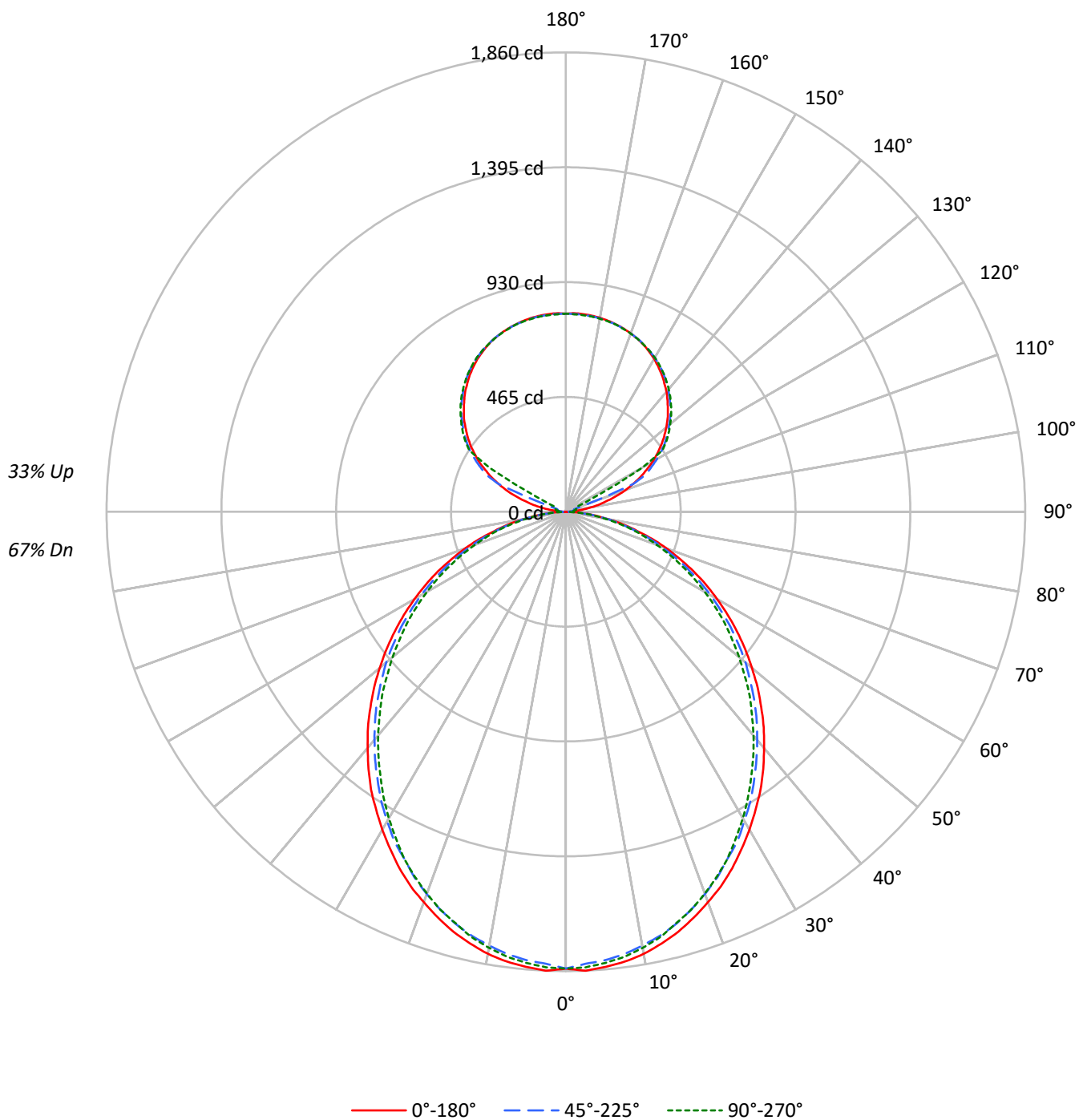
Lumens per Lamp: N/A
Luminaire Lumens: 7058.3 lumens
Efficiency: N/A
Efficacy: 90.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 77.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P914453

CATALOG NUMBER: DFN2DIP-SQ2F0-060D030US927-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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71
1	102	97	93	90	95	92	88	85	81	79	76	72	70	68	63	62	60
2	92	85	79	73	87	80	75	70	71	67	63	63	60	57	56	53	51
3	84	75	67	61	79	71	64	58	63	58	53	56	52	48	49	46	43
4	77	66	58	52	72	63	55	50	56	50	45	50	45	41	44	40	37
5	71	59	51	44	67	56	48	43	50	44	39	45	40	36	40	36	33
6	66	53	45	39	62	50	43	37	45	39	34	41	35	32	36	32	29
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	26
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23
9	53	40	32	27	50	38	31	26	35	29	24	31	26	23	28	24	21
10	49	37	29	24	46	35	28	24	32	26	22	29	24	20	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4067	4067	4067
5°	4066	4001	4031
10°	4026	3939	3971
15°	3960	3865	3880
20°	3873	3766	3787
25°	3786	3649	3681
30°	3679	3541	3547
35°	3577	3413	3406
40°	3453	3285	3271
45°	3328	3155	3132
50°	3192	3019	2973
55°	3049	2861	2824
60°	2886	2676	2655
65°	2708	2482	2455
70°	2482	2246	2238
75°	2171	1963	2030
80°	1793	1603	1649
85°	1211	1012	1036

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3328 cd/sqm

TEST NUMBER: P914453

CATALOG NUMBER: DFN2DIP-SQ2F0-060D030US927-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.1	2.5
10°-20°	489.8	6.9
20°-30°	719.8	10.2
30°-40°	836.0	11.8
40°-50°	834.9	11.8
50°-60°	728.0	10.3
60°-70°	538.2	7.6
70°-80°	304.5	4.3
80°-90°	81.8	1.2
90°-100°	26.5	0.4
100°-110°	98.6	1.4
110°-120°	261.5	3.7
120°-130°	433.7	6.1
130°-140°	460.7	6.5
140°-150°	428.1	6.1
150°-160°	344.2	4.9
160°-170°	221.8	3.1
170°-180°	76.3	1.1
0°-30°	1383.6	19.6
0°-40°	2219.6	31.4
0°-60°	3782.5	53.6
0°-90°	4707.0	66.7
90°-120°	386.5	5.5
90°-150°	1709.0	24.2
90°-180°	2351.0	33.3
0°-180°	7058.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1849	1849	1849	1849	1849	
5°	1849	1842	1823	1837	1834	176
15°	1760	1750	1727	1734	1725	496
25°	1593	1579	1549	1552	1549	733
35°	1375	1357	1328	1318	1309	858
45°	1119	1106	1079	1060	1053	863
55°	847	836	814	793	784	757
65°	571	560	542	526	518	564
75°	299	295	286	276	279	319
85°	73	71	69	64	62	81
90°	1	7	12	15	16	7
95°	38	18	23	26	25	45
105°	176	194	35	42	44	188
115°	334	344	358	89	48	329
125°	472	479	490	494	496	421
135°	584	593	598	604	603	451
145°	677	677	687	691	688	424
155°	746	741	748	751	746	344
165°	786	782	784	788	784	222
175°	804	800	801	805	799	76
180°	802	802	802	802	802	

TEST NUMBER: P914453

CATALOG NUMBER: DFN2DIP-SQ2F0-060D030US927-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1849.4	1849.4	1849.4	1849.4	1849.4
2.5°	1860.2	1851.3	1831.7	1849.4	1846.0
5°	1849.4	1842.5	1822.8	1837.0	1833.6
7.5°	1837.0	1826.5	1806.8	1821.1	1817.6
10°	1817.6	1805.1	1783.8	1797.9	1792.6
12.5°	1790.8	1780.2	1758.9	1767.8	1764.2
15°	1760.5	1750.0	1726.8	1734.0	1725.1
17.5°	1723.2	1712.7	1689.5	1698.3	1689.5
20°	1682.3	1671.7	1646.8	1652.1	1645.1
22.5°	1641.6	1625.5	1602.3	1602.3	1598.7
25°	1593.4	1579.3	1549.0	1552.4	1549.0
27.5°	1540.0	1527.6	1504.5	1499.3	1490.4
30°	1486.8	1472.4	1445.9	1440.6	1433.4
32.5°	1429.8	1419.3	1390.8	1380.0	1372.8
35°	1374.8	1357.0	1328.5	1317.7	1308.8
37.5°	1312.5	1296.4	1268.0	1255.4	1246.6
40°	1248.5	1234.1	1205.7	1189.9	1182.6
42.5°	1186.2	1171.9	1143.6	1125.7	1115.1
45°	1118.7	1106.2	1079.4	1060.0	1052.8
47.5°	1052.8	1040.4	1011.9	992.3	981.7
50°	983.4	974.5	949.7	924.7	915.8
52.5°	915.8	903.4	880.4	860.8	848.3
55°	846.6	835.8	814.5	793.2	784.3
57.5°	777.2	768.3	745.1	723.8	716.6
60°	707.7	700.8	675.9	656.2	650.9
62.5°	640.2	627.7	610.0	592.2	585.1
65°	570.9	560.2	542.5	526.4	517.5
67.5°	499.8	490.8	474.9	462.5	455.3
70°	434.0	426.8	410.7	398.3	391.3
72.5°	366.4	359.3	350.4	337.9	332.6
75°	298.7	295.3	286.2	275.7	279.2
77.5°	238.3	231.2	227.5	222.3	217.0
80°	177.9	176.0	172.5	167.2	163.6
82.5°	121.0	121.0	119.2	112.1	112.1
85°	72.8	71.1	69.4	63.9	62.3
87.5°	32.1	28.5	24.9	19.6	17.7
90°	0.6	7.0	11.6	14.6	15.6
92.5°	14.6	12.2	13.9	15.1	15.6
95°	37.7	18.5	22.6	25.6	25.0
97.5°	67.9	20.4	29.5	31.4	31.9
100°	102.7	23.2	33.1	37.7	38.9
102.5°	141.0	139.9	34.2	40.6	42.4
105°	176.4	193.8	35.4	41.7	44.1
107.5°	217.6	232.1	36.6	42.9	45.3
110°	257.1	269.3	101.6	43.6	45.9



TEST NUMBER: P914453

CATALOG NUMBER: DFN2DIP-SQ2F0-060D030US927-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	294.3	304.7	294.8	44.7	46.4
115°	333.7	343.6	358.1	89.4	47.6
117.5°	368.0	379.5	389.4	306.4	154.4
120°	406.2	414.9	425.4	432.4	354.0
122.5°	438.7	448.1	459.7	463.1	463.7
125°	471.8	479.3	490.4	494.5	496.2
127.5°	502.0	510.1	518.9	524.7	525.2
130°	530.4	539.8	546.1	552.5	552.0
132.5°	559.4	567.0	573.4	578.6	578.1
135°	583.8	593.2	598.3	604.2	603.0
137.5°	609.3	616.3	622.2	628.0	626.2
140°	634.3	639.0	645.3	650.5	647.7
142.5°	655.3	659.3	666.9	671.5	668.6
145°	677.3	676.7	686.6	690.6	687.7
147.5°	696.4	694.7	704.6	707.4	705.1
150°	715.0	711.0	720.3	723.7	720.8
152.5°	730.6	726.0	734.7	738.2	734.2
155°	745.8	740.6	747.5	751.0	746.4
157.5°	758.0	753.4	758.6	762.6	758.0
160°	768.4	764.9	768.4	771.9	767.8
162.5°	777.7	774.2	777.1	781.2	775.9
165°	785.8	782.4	784.1	788.1	784.1
167.5°	792.2	788.7	790.4	794.6	789.3
170°	797.4	793.9	795.1	799.2	793.9
172.5°	800.9	797.4	798.6	802.6	797.4
175°	803.7	799.7	800.9	804.9	799.2
177.5°	804.9	800.9	801.5	805.6	800.3
180°	802.1	802.1	802.1	802.1	802.1

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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	13.44	14.48	14.24	15.30	16.31	13.00	14.03	13.80	14.86	15.87
	3H	15.10	16.03	15.91	16.86	17.90	14.61	15.54	15.42	16.37	17.41
	4H	15.68	16.56	16.51	17.40	18.45	15.19	16.06	16.02	16.90	17.95
	6H	16.07	16.88	16.92	17.73	18.79	15.57	16.38	16.42	17.23	18.30
	8H	16.18	16.95	17.03	17.81	18.88	15.67	16.45	16.53	17.31	18.38
	12H	16.22	16.96	17.08	17.82	18.91	15.71	16.45	16.57	17.31	18.40
4H	2H	13.91	14.79	14.75	15.63	16.68	13.56	14.44	14.39	15.28	16.33
	3H	15.77	16.51	16.62	17.38	18.45	15.37	16.10	16.21	16.97	18.04
	4H	16.48	17.15	17.34	18.02	19.11	16.05	16.72	16.91	17.59	18.69
	6H	16.99	17.56	17.86	18.46	19.55	16.55	17.13	17.43	18.02	19.12
	8H	17.13	17.67	18.01	18.56	19.67	16.69	17.23	17.57	18.12	19.23
	12H	17.20	17.69	18.10	18.60	19.71	16.75	17.24	17.65	18.15	19.26
8H	4H	16.68	17.22	17.56	18.11	19.22	16.30	16.84	17.18	17.73	18.84
	6H	17.29	17.74	18.20	18.67	19.78	16.91	17.35	17.81	18.29	19.40
	8H	17.50	17.90	18.42	18.82	19.95	17.11	17.50	18.02	18.43	19.56
	12H	17.63	17.98	18.55	18.89	20.07	17.22	17.57	18.14	18.48	19.66
12H	4H	16.67	17.16	17.57	18.06	19.18	16.30	16.79	17.20	17.69	18.81
	6H	17.32	17.72	18.23	18.64	19.77	16.95	17.34	17.86	18.27	19.39
	8H	17.55	17.90	18.47	18.82	20.00	17.17	17.52	18.09	18.44	19.62