

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: P920088

Luminaire Tested: DFN2DIP-SQ3F0-070D040US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920088
REPORT IS A COMBINATION OF REPORTS P899867 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-070D040US935-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

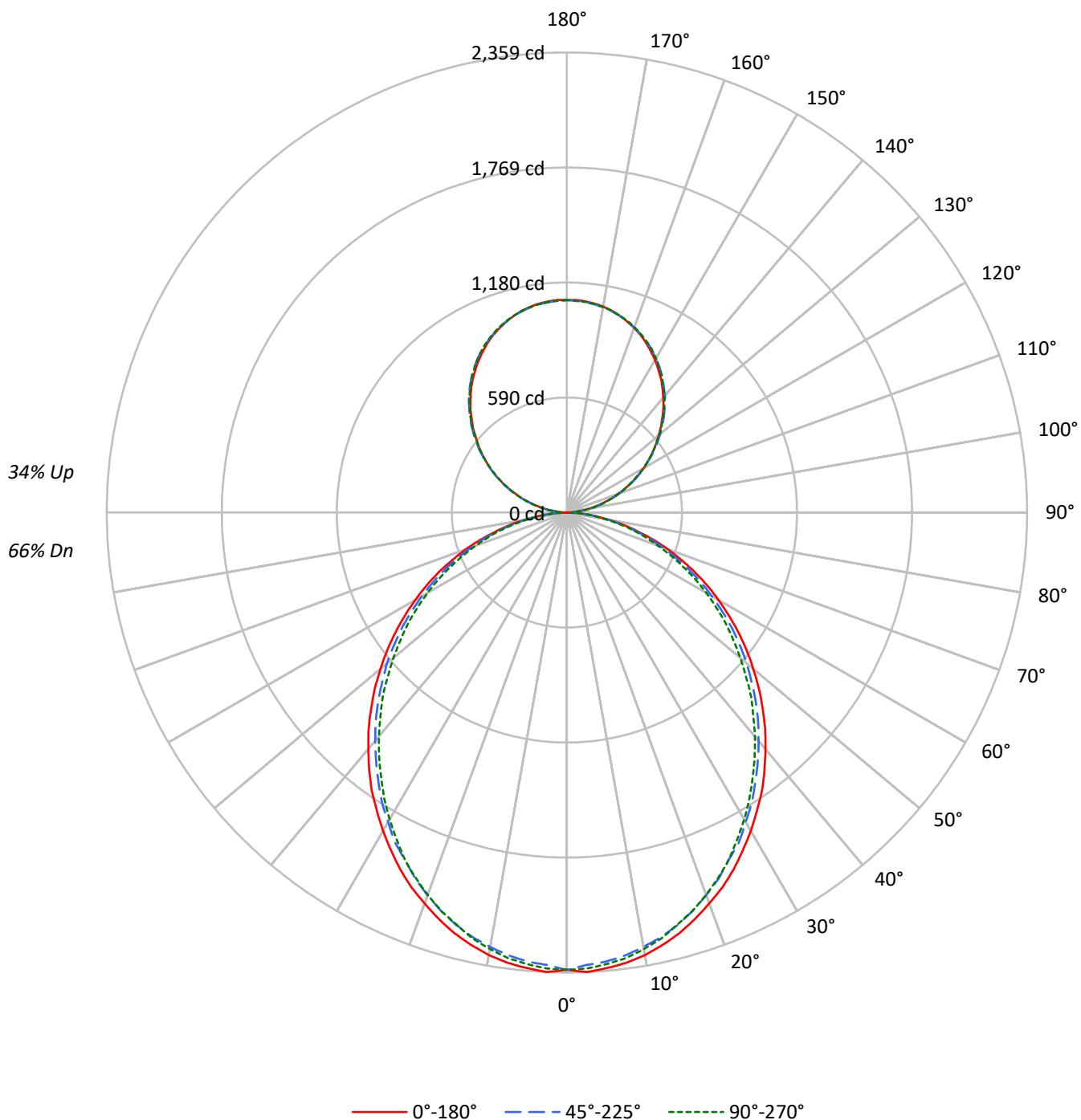
Lumens per Lamp: N/A
Luminaire Lumens: 9014.7 lumens
Efficiency: N/A
Efficacy: 94.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 95.9
Input Voltage (V):
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: P920088

CATALOG NUMBER: DFN2DIP-SQ3F0-070D040US935-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P920088

CATALOG NUMBER: DFN2DIP-SQ3F0-070D040US935-FLLFL

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	104	104	104	104	92	92	92	81	81	81	71	71	71
1	101	97	93	89	95	91	88	85	81	78	76	72	70	68	63	61	60
2	92	85	78	73	87	80	74	70	71	67	63	63	60	57	55	53	51
3	84	75	67	61	79	70	64	58	63	57	53	56	51	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	32
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	36	32	29
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	25
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23
9	53	40	32	27	49	38	31	26	34	28	24	31	26	22	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°	2687	2687	2687
5°	2690	2648	2667
10°	2666	2610	2630
15°	2625	2566	2572
20°	2570	2504	2514
25°	2516	2431	2446
30°	2448	2363	2360
35°	2384	2282	2270
40°	2305	2201	2183
45°	2226	2120	2095
50°	2140	2034	1993
55°	2049	1936	1898
60°	1946	1819	1790
65°	1835	1697	1663
70°	1692	1548	1526
75°	1495	1371	1397
80°	1256	1144	1155
85°	885	758	756

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2226 cd/sqm

TEST NUMBER: P920088

CATALOG NUMBER: DFN2DIP-SQ3F0-070D040US935-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	220.7	2.4
10°-20°	621.0	6.9
20°-30°	912.7	10.1
30°-40°	1060.0	11.8
40°-50°	1058.7	11.7
50°-60°	923.2	10.2
60°-70°	682.4	7.6
70°-80°	386.1	4.3
80°-90°	105.0	1.2
90°-100°	67.4	0.7
100°-110°	214.2	2.4
110°-120°	366.5	4.1
120°-130°	482.0	5.3
130°-140°	541.0	6.0
140°-150°	530.5	5.9
150°-160°	445.0	4.9
160°-170°	295.1	3.3
170°-180°	103.2	1.1
0°-30°	1754.4	19.5
0°-40°	2814.4	31.2
0°-60°	4796.3	53.2
0°-90°	5969.8	66.2
90°-120°	648.0	7.2
90°-150°	2201.5	24.4
90°-180°	3045.0	33.8
0°-180°	9014.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2345	2345	2345	2345	2345	
5°	2345	2336	2311	2329	2325	223
15°	2232	2219	2190	2199	2188	629
25°	2020	2002	1964	1969	1964	930
35°	1743	1721	1684	1671	1660	1089
45°	1418	1403	1369	1344	1335	1095
55°	1074	1060	1033	1006	994	960
65°	724	710	688	668	656	716
75°	379	374	363	350	354	404
85°	92	90	88	81	79	103
90°	1	12	32	30	31	9
95°	48	57	59	59	57	53
105°	198	200	202	204	204	209
115°	368	373	371	370	368	364
125°	535	543	540	538	537	478
135°	692	702	704	703	700	535
145°	840	846	852	853	849	525
155°	960	963	966	971	968	442
165°	1045	1044	1044	1050	1046	295
175°	1087	1085	1083	1089	1084	103
180°	1089	1089	1089	1089	1089	

TEST NUMBER: P920088

CATALOG NUMBER: DFN2DIP-SQ3F0-070D040US935-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2345.1	2345.1	2345.1	2345.1	2345.1
2.5°	2358.8	2347.5	2322.6	2345.1	2340.8
5°	2345.1	2336.3	2311.4	2329.3	2325.0
7.5°	2329.3	2315.9	2291.0	2309.3	2304.7
10°	2304.7	2288.9	2261.8	2279.8	2273.1
12.5°	2270.7	2257.4	2230.3	2241.5	2237.0
15°	2232.5	2219.0	2189.6	2198.7	2187.5
17.5°	2185.0	2171.7	2142.2	2153.5	2142.2
20°	2133.1	2119.8	2088.2	2094.9	2086.0
22.5°	2081.5	2061.1	2031.7	2031.7	2027.1
25°	2020.5	2002.5	1964.3	1968.6	1964.3
27.5°	1952.7	1937.0	1907.8	1901.1	1889.8
30°	1885.3	1867.1	1833.4	1826.7	1817.6
32.5°	1813.0	1799.7	1763.5	1749.9	1740.8
35°	1743.2	1720.7	1684.5	1670.9	1659.7
37.5°	1664.2	1643.9	1607.7	1592.0	1580.7
40°	1583.1	1564.9	1528.8	1508.7	1499.6
42.5°	1504.2	1486.0	1450.1	1427.4	1413.9
45°	1418.5	1402.7	1368.7	1344.1	1335.0
47.5°	1335.0	1319.2	1283.1	1258.2	1244.8
50°	1247.0	1235.7	1204.1	1172.6	1161.3
52.5°	1161.3	1145.6	1116.4	1091.5	1075.6
55°	1073.5	1059.9	1032.9	1005.8	994.5
57.5°	985.5	974.2	944.8	917.7	908.7
60°	897.4	888.5	857.0	832.2	825.4
62.5°	811.7	796.0	773.5	751.0	741.9
65°	724.0	710.3	687.9	667.5	656.3
67.5°	633.8	622.3	602.2	586.4	577.3
70°	550.3	541.2	520.8	505.1	496.2
72.5°	464.6	455.6	444.3	428.5	421.8
75°	378.8	374.4	362.9	349.6	354.1
77.5°	302.2	293.1	288.5	281.8	275.2
80°	225.6	223.3	218.7	212.0	207.4
82.5°	153.3	153.3	151.2	142.2	142.2
85°	92.4	90.2	88.1	81.1	79.0
87.5°	40.6	36.2	31.6	24.9	22.5
90°	0.9	11.8	32.2	30.2	31.2
92.5°	20.3	27.6	28.6	29.5	29.5
95°	48.0	57.2	58.8	58.8	57.2
97.5°	79.8	88.3	92.0	92.0	92.0
100°	116.6	124.2	126.7	126.7	125.8
102.5°	155.3	160.9	164.5	165.5	164.5
105°	197.7	200.3	202.2	203.9	203.9
107.5°	239.7	243.7	243.7	244.3	239.7
110°	280.4	285.7	285.7	285.7	283.1

TEST NUMBER: P920088

CATALOG NUMBER: DFN2DIP-SQ3F0-070D040US935-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	324.4	330.0	329.0	326.4	324.4
115°	367.7	373.1	371.3	370.4	367.7
117.5°	410.8	418.0	413.5	410.8	408.2
120°	454.2	461.3	454.2	454.2	451.2
122.5°	493.5	502.7	498.2	495.5	493.5
125°	534.9	543.1	540.5	537.5	536.6
127.5°	575.3	585.5	581.9	577.9	575.3
130°	613.0	624.9	623.3	621.3	617.7
132.5°	655.4	664.6	665.3	660.6	658.1
135°	691.9	702.1	704.0	703.0	700.4
137.5°	732.6	740.8	742.4	741.7	737.9
140°	768.4	776.6	781.2	781.2	777.6
142.5°	805.2	813.4	816.0	817.0	813.4
145°	840.0	846.5	851.8	852.8	849.2
147.5°	871.2	879.3	883.3	884.9	881.3
150°	903.4	909.0	912.6	915.5	912.6
152.5°	931.9	937.5	942.1	945.7	942.1
155°	960.4	963.1	966.0	970.7	967.7
157.5°	985.2	987.0	988.7	995.3	990.7
160°	1007.1	1009.1	1010.0	1015.6	1011.7
162.5°	1027.4	1027.4	1028.5	1034.7	1030.1
165°	1044.9	1043.9	1043.9	1050.4	1045.9
167.5°	1060.7	1057.6	1057.6	1064.3	1059.6
170°	1072.5	1069.8	1068.8	1075.4	1069.8
172.5°	1080.6	1078.1	1077.0	1083.7	1078.1
175°	1087.3	1084.6	1082.6	1089.2	1083.7
177.5°	1090.9	1088.2	1086.2	1091.8	1086.2
180°	1089.2	1089.2	1089.2	1089.2	1089.2

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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	12.05	13.08	12.85	13.90	14.92	11.60	12.63	12.41	13.46	14.48
	3H	13.72	14.64	14.53	15.48	16.52	13.23	14.15	14.04	14.99	16.03
	4H	14.31	15.18	15.14	16.03	17.08	13.81	14.69	14.65	15.53	16.59
	6H	14.71	15.52	15.56	16.37	17.44	14.21	15.02	15.06	15.87	16.94
	8H	14.82	15.59	15.68	16.46	17.53	14.32	15.09	15.17	15.96	17.03
	12H	14.87	15.60	15.73	16.47	17.57	14.36	15.10	15.23	15.96	17.06
4H	2H	12.53	13.40	13.36	14.24	15.30	12.17	13.04	13.01	13.89	14.95
	3H	14.40	15.13	15.25	16.01	17.08	13.99	14.72	14.84	15.60	16.67
	4H	15.12	15.78	15.98	16.66	17.76	14.69	15.36	15.56	16.23	17.33
	6H	15.64	16.21	16.52	17.11	18.22	15.21	15.78	16.08	16.68	17.78
	8H	15.79	16.33	16.67	17.22	18.34	15.35	15.89	16.23	16.78	17.90
	12H	15.87	16.35	16.77	17.26	18.39	15.42	15.90	16.32	16.82	17.94
8H	4H	15.32	15.86	16.21	16.75	17.87	14.95	15.48	15.83	16.38	17.49
	6H	15.96	16.40	16.87	17.34	18.45	15.57	16.02	16.48	16.95	18.07
	8H	16.17	16.57	17.09	17.50	18.63	15.78	16.18	16.70	17.10	18.24
	12H	16.31	16.66	17.23	17.58	18.76	15.90	16.25	16.82	17.17	18.35
12H	4H	15.32	15.80	16.22	16.71	17.84	14.95	15.43	15.85	16.34	17.47
	6H	15.99	16.38	16.90	17.31	18.44	15.61	16.01	16.53	16.94	18.07
	8H	16.23	16.58	17.15	17.50	18.68	15.85	16.20	16.77	17.12	18.30