

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: P925516

Luminaire Tested: DFN2DIP-SQ3F0-060D060US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925516
REPORT IS A COMBINATION OF REPORTS P899901 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-060D060US950-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

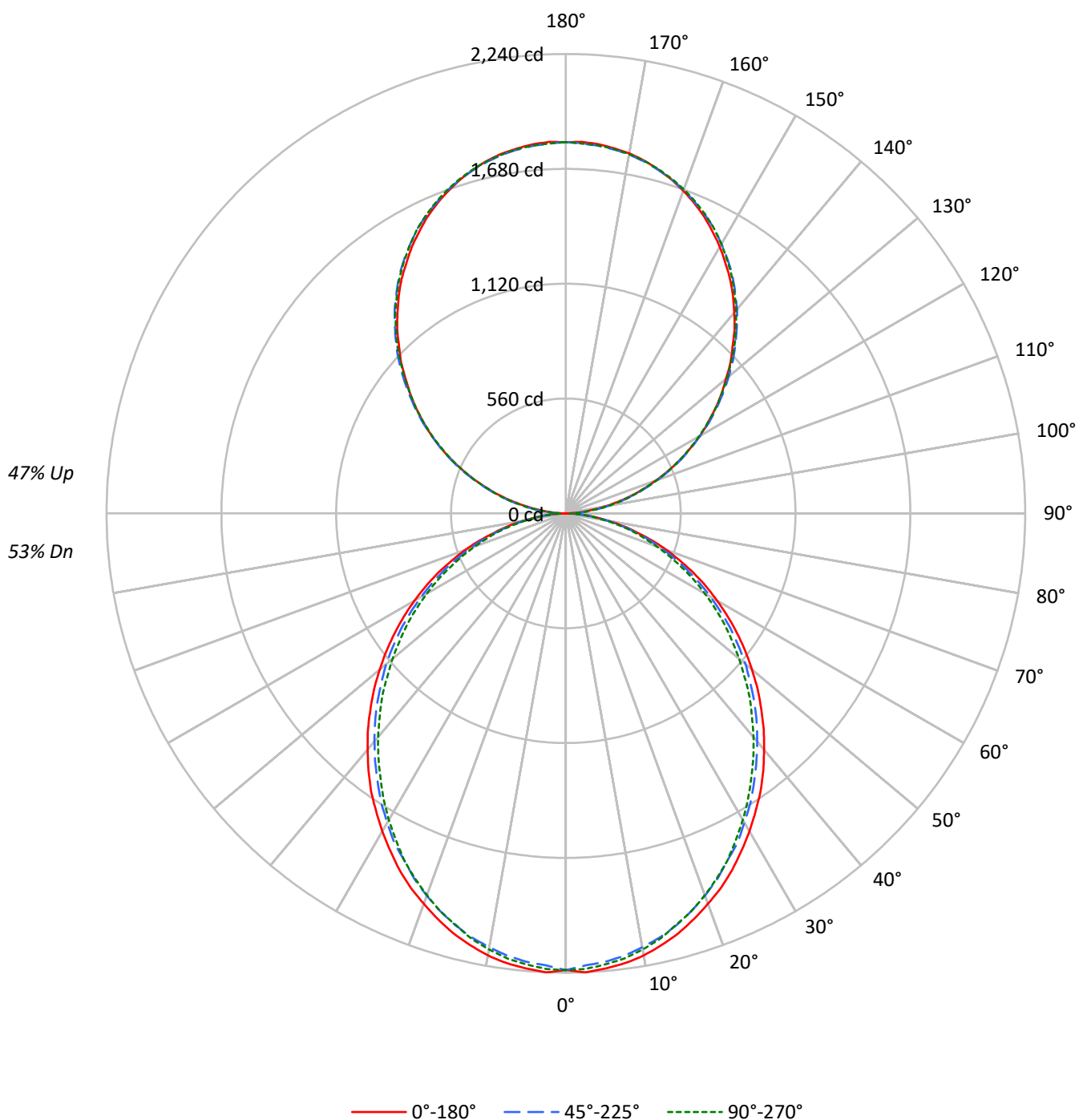
Lumens per Lamp: N/A
Luminaire Lumens: 10732.5 lumens
Efficiency: N/A
Efficacy: 109.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 98.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P925516

CATALOG NUMBER: DFN2DIP-SQ3F0-060D060US950-FLLFLL

Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-SQ3F0-060D060US950-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°	2552	2552	2552
5°	2554	2515	2532
10°	2532	2479	2497
15°	2493	2437	2443
20°	2441	2378	2387
25°	2390	2309	2323
30°	2325	2244	2242
35°	2264	2168	2155
40°	2189	2091	2073
45°	2114	2013	1990
50°	2032	1932	1892
55°	1946	1838	1803
60°	1849	1727	1700
65°	1742	1612	1579
70°	1607	1471	1449
75°	1420	1302	1327
80°	1193	1086	1097
85°	840	720	718

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2114 cd/sqm

TEST NUMBER: P925516

CATALOG NUMBER: DFN2DIP-SQ3F0-060D060US950-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	209.6	2.0
10°-20°	589.8	5.5
20°-30°	866.8	8.1
30°-40°	1006.7	9.4
40°-50°	1005.5	9.4
50°-60°	876.7	8.2
60°-70°	648.1	6.0
70°-80°	366.7	3.4
80°-90°	101.9	0.9
90°-100°	112.0	1.0
100°-110°	355.9	3.3
110°-120°	609.1	5.7
120°-130°	801.1	7.5
130°-140°	899.2	8.4
140°-150°	881.7	8.2
150°-160°	739.6	6.9
160°-170°	490.5	4.6
170°-180°	171.4	1.6
0°-30°	1666.2	15.5
0°-40°	2673.0	24.9
0°-60°	4555.2	42.4
0°-90°	5671.9	52.8
90°-120°	1077.0	10.0
90°-150°	3659.0	34.1
90°-180°	5061.0	47.2
0°-180°	10732.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2227	2227	2227	2227	2227	
5°	2227	2219	2195	2212	2208	211
15°	2120	2108	2080	2088	2078	597
25°	1919	1902	1866	1870	1866	883
35°	1656	1634	1600	1587	1576	1034
45°	1347	1332	1300	1276	1268	1040
55°	1020	1007	981	955	945	912
65°	688	675	653	634	623	680
75°	360	356	345	332	336	384
85°	88	86	84	77	75	98
90°	2	20	54	50	52	10
95°	80	95	98	98	95	89
105°	329	333	336	339	339	347
115°	611	620	617	616	611	605
125°	889	903	898	893	892	794
135°	1150	1167	1170	1168	1164	889
145°	1396	1407	1416	1417	1411	872
155°	1596	1601	1606	1613	1608	735
165°	1737	1735	1735	1746	1738	490
175°	1807	1803	1799	1810	1801	172
180°	1810	1810	1810	1810	1810	

TEST NUMBER: P925516

CATALOG NUMBER: DFN2DIP-SQ3F0-060D060US950-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2227.2	2227.2	2227.2	2227.2	2227.2
2.5°	2240.2	2229.5	2205.8	2227.2	2223.1
5°	2227.2	2218.8	2195.2	2212.2	2208.1
7.5°	2212.2	2199.5	2175.9	2193.2	2188.9
10°	2188.9	2173.9	2148.1	2165.2	2158.8
12.5°	2156.6	2143.8	2118.2	2128.9	2124.6
15°	2120.2	2107.5	2079.5	2088.2	2077.5
17.5°	2075.2	2062.5	2034.6	2045.2	2034.6
20°	2025.9	2013.2	1983.2	1989.6	1981.2
22.5°	1976.9	1957.5	1929.6	1929.6	1925.3
25°	1918.9	1901.9	1865.5	1869.6	1865.5
27.5°	1854.6	1839.6	1811.8	1805.5	1794.9
30°	1790.6	1773.2	1741.2	1734.8	1726.2
32.5°	1721.9	1709.2	1674.8	1661.9	1653.3
35°	1655.6	1634.2	1599.9	1586.9	1576.2
37.5°	1580.6	1561.2	1527.0	1511.9	1501.2
40°	1503.5	1486.2	1452.0	1432.9	1424.2
42.5°	1428.5	1411.3	1377.2	1355.6	1342.9
45°	1347.2	1332.2	1299.9	1276.5	1267.9
47.5°	1267.9	1252.9	1218.6	1195.0	1182.2
50°	1184.3	1173.6	1143.7	1113.6	1102.9
52.5°	1102.9	1087.9	1060.2	1036.6	1021.6
55°	1019.5	1006.6	980.9	955.2	944.6
57.5°	936.0	925.3	897.3	871.7	863.0
60°	852.3	843.9	814.0	790.3	783.9
62.5°	770.9	755.9	734.6	713.2	704.6
65°	687.5	674.7	653.3	633.9	623.2
67.5°	601.9	591.0	571.9	556.9	548.3
70°	522.6	514.0	494.6	479.7	471.3
72.5°	441.2	432.6	422.0	407.0	400.6
75°	359.7	355.7	344.7	332.0	336.3
77.5°	287.0	278.4	274.0	267.7	261.3
80°	214.3	212.0	207.7	201.3	197.0
82.5°	145.7	145.7	143.6	135.0	135.0
85°	87.7	85.7	83.6	77.0	75.0
87.5°	38.6	34.3	30.0	23.7	21.4
90°	1.6	19.7	53.5	50.2	51.8
92.5°	33.9	45.9	47.5	49.1	49.1
95°	79.7	94.9	97.7	97.7	94.9
97.5°	132.6	146.8	152.8	152.8	152.8
100°	193.8	206.3	210.6	210.6	209.0
102.5°	258.2	267.4	273.4	275.0	273.4
105°	328.6	332.9	336.2	339.0	339.0
107.5°	398.4	405.0	405.0	406.0	398.4
110°	466.1	474.8	474.8	474.8	470.4



TEST NUMBER: P925516

CATALOG NUMBER: DFN2DIP-SQ3F0-060D060US950-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	539.2	548.5	546.8	542.4	539.2
115°	611.2	620.0	617.2	615.6	611.2
117.5°	682.8	694.8	687.1	682.8	678.4
120°	754.8	766.8	754.8	754.8	749.8
122.5°	820.2	835.5	827.9	823.6	820.2
125°	889.0	902.7	898.3	893.4	891.8
127.5°	956.2	973.1	967.1	960.6	956.2
130°	1019.0	1038.6	1035.9	1032.6	1026.6
132.5°	1089.4	1104.6	1105.7	1098.1	1093.7
135°	1150.0	1166.8	1170.1	1168.5	1164.1
137.5°	1217.6	1231.2	1234.0	1232.9	1226.4
140°	1277.1	1290.8	1298.4	1298.4	1292.4
142.5°	1338.2	1351.8	1356.2	1357.8	1351.8
145°	1396.1	1407.0	1415.7	1417.4	1411.3
147.5°	1447.9	1461.5	1468.1	1470.8	1464.8
150°	1501.4	1510.7	1516.7	1521.5	1516.7
152.5°	1548.8	1558.2	1565.8	1571.8	1565.8
155°	1596.3	1600.7	1605.6	1613.3	1608.3
157.5°	1637.3	1640.6	1643.3	1654.2	1646.6
160°	1673.9	1677.1	1678.8	1688.0	1681.5
162.5°	1707.7	1707.7	1709.3	1719.7	1712.0
165°	1736.6	1734.9	1734.9	1745.9	1738.3
167.5°	1762.8	1757.9	1757.9	1768.8	1761.2
170°	1782.5	1778.1	1776.4	1787.3	1778.1
172.5°	1796.1	1791.7	1790.1	1801.0	1791.7
175°	1807.0	1802.7	1799.3	1810.3	1801.0
177.5°	1813.0	1808.7	1805.3	1814.6	1805.3
180°	1810.3	1810.3	1810.3	1810.3	1810.3

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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	10.75	11.64	11.68	12.59	13.82	10.31	11.19	11.24	12.14	13.37
	3H	12.41	13.21	13.35	14.16	15.42	11.92	12.72	12.86	13.67	14.93
	4H	12.99	13.75	13.95	14.71	15.97	12.50	13.25	13.46	14.22	15.48
	6H	13.39	14.09	14.36	15.06	16.33	12.89	13.59	13.86	14.56	15.83
	8H	13.50	14.16	14.47	15.14	16.42	12.99	13.66	13.97	14.64	15.91
	12H	13.54	14.17	14.53	15.15	16.45	13.03	13.66	14.02	14.64	15.94
4H	2H	11.21	11.97	12.18	12.93	14.19	10.86	11.61	11.82	12.57	13.84
	3H	13.07	13.70	14.05	14.70	15.97	12.67	13.30	13.64	14.29	15.57
	4H	13.79	14.36	14.77	15.35	16.65	13.36	13.94	14.34	14.92	16.22
	6H	14.30	14.79	15.29	15.80	17.10	13.87	14.36	14.86	15.37	16.67
	8H	14.45	14.91	15.44	15.91	17.23	14.01	14.47	15.01	15.48	16.79
	12H	14.52	14.94	15.53	15.96	17.27	14.07	14.49	15.08	15.51	16.83
8H	4H	13.98	14.44	14.98	15.45	16.76	13.60	14.07	14.60	15.07	16.38
	6H	14.61	14.99	15.63	16.04	17.35	14.22	14.61	15.24	15.65	16.96
	8H	14.82	15.16	15.85	16.19	17.52	14.43	14.77	15.46	15.80	17.13
	12H	14.95	15.25	15.99	16.28	17.65	14.54	14.84	15.58	15.87	17.24
12H	4H	13.97	14.38	14.98	15.40	16.72	13.60	14.02	14.61	15.04	16.35
	6H	14.64	14.97	15.66	16.01	17.33	14.26	14.60	15.29	15.63	16.96
	8H	14.87	15.17	15.91	16.20	17.57	14.49	14.79	15.53	15.82	17.19