

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: P907708

Luminaire Tested: DFN2DIP-4P3F0-050D060US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907708
REPORT IS A COMBINATION OF REPORTS P899076 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-050D060US840-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

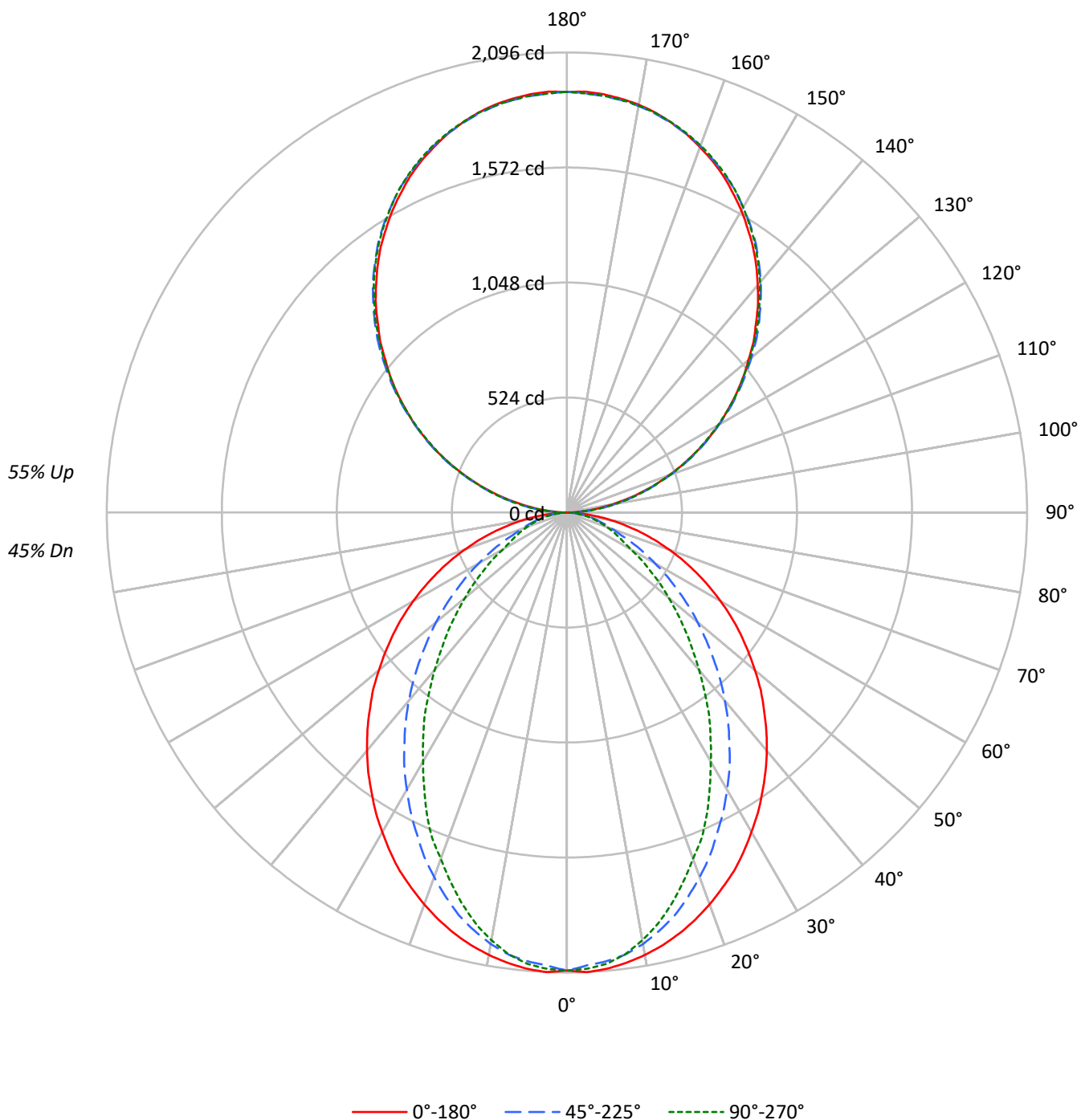
Lumens per Lamp: N/A
Luminaire Lumens: 9654.3 lumens
Efficiency: N/A
Efficacy: 100.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 96
Input Voltage (V):
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: P907708

CATALOG NUMBER: DFN2DIP-4P3F0-050D060US840-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P907708

CATALOG NUMBER: DFN2DIP-4P3F0-050D060US840-RLLFLL

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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51
1	97	93	89	86	89	85	82	79	71	69	67	58	56	55	46	45	44
2	89	82	76	71	81	75	70	66	63	59	56	51	49	47	41	39	38
3	81	72	65	59	74	66	60	55	56	51	47	46	43	40	37	34	33
4	74	64	56	51	68	59	52	47	50	45	41	41	37	35	33	30	28
5	68	57	49	44	63	53	46	41	45	39	35	37	33	30	30	27	25
6	63	51	44	38	58	48	41	36	40	35	31	34	30	27	27	24	22
7	58	47	39	33	54	43	36	31	37	31	28	31	27	24	25	22	20
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18
9	51	39	31	27	46	36	29	25	31	26	22	26	22	19	21	18	16
10	47	36	29	24	43	33	27	23	28	23	20	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2378	2378	2378
5°	2381	2339	2355
10°	2355	2291	2277
15°	2322	2214	2158
20°	2277	2108	2012
25°	2232	1990	1871
30°	2171	1869	1693
35°	2112	1739	1536
40°	2051	1604	1357
45°	1981	1455	1194
50°	1908	1305	1035
55°	1832	1144	882
60°	1744	977	725
65°	1642	806	652
70°	1519	648	589
75°	1364	568	534
80°	1140	472	460
85°	774	308	342

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1981 cd/sqm

TEST NUMBER: P907708

CATALOG NUMBER: DFN2DIP-4P3F0-050D060US840-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.6	2.0
10°-20°	536.9	5.6
20°-30°	753.8	7.8
30°-40°	821.7	8.5
40°-50°	755.2	7.8
50°-60°	593.1	6.1
60°-70°	386.1	4.0
70°-80°	198.7	2.1
80°-90°	56.2	0.6
90°-100°	118.6	1.2
100°-110°	376.8	3.9
110°-120°	644.8	6.7
120°-130°	848.0	8.8
130°-140°	951.8	9.9
140°-150°	933.4	9.7
150°-160°	783.0	8.1
160°-170°	519.2	5.4
170°-180°	181.5	1.9
0°-30°	1486.3	15.4
0°-40°	2308.0	23.9
0°-60°	3656.4	37.9
0°-90°	4297.4	44.5
90°-120°	1140.1	11.8
90°-150°	3873.3	40.1
90°-180°	5357.0	55.5
0°-180°	9654.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2087	2087	2087	2087	2087	
5°	2087	2078	2053	2070	2064	198
15°	1985	1964	1900	1864	1845	559
25°	1802	1741	1617	1539	1511	829
35°	1552	1456	1290	1171	1129	972
45°	1269	1143	944	810	765	980
55°	965	818	614	500	465	862
65°	652	499	329	264	259	646
75°	348	215	151	138	136	368
85°	81	42	36	36	36	93
90°	2	21	57	53	55	10
95°	84	100	103	103	100	94
105°	348	352	356	359	359	367
115°	647	656	653	652	647	640
125°	941	956	951	946	944	841
135°	1217	1235	1239	1237	1232	941
145°	1478	1489	1499	1500	1494	923
155°	1690	1694	1700	1708	1702	778
165°	1838	1836	1836	1848	1840	519
175°	1913	1908	1905	1916	1906	182
180°	1916	1916	1916	1916	1916	

TEST NUMBER: P907708

CATALOG NUMBER: DFN2DIP-4P3F0-050D060US840-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2086.9	2086.9	2086.9	2086.9	2086.9
2.5°	2096.3	2086.9	2066.1	2085.1	2081.2
5°	2086.9	2077.5	2052.9	2069.8	2064.3
7.5°	2069.8	2058.6	2032.2	2039.6	2030.1
10°	2047.2	2034.0	1996.3	1990.5	1979.2
12.5°	2018.9	2002.0	1950.9	1939.6	1918.7
15°	1984.9	1964.1	1900.0	1864.1	1845.2
17.5°	1945.2	1915.0	1835.6	1794.1	1763.8
20°	1900.0	1862.1	1767.7	1720.6	1678.9
22.5°	1850.9	1807.4	1697.8	1633.7	1605.4
25°	1801.7	1741.2	1616.6	1539.2	1510.8
27.5°	1743.2	1678.9	1541.1	1452.3	1408.9
30°	1680.9	1609.0	1457.9	1361.7	1310.6
32.5°	1620.4	1533.5	1378.8	1265.4	1218.1
35°	1552.5	1456.1	1290.0	1170.9	1129.3
37.5°	1486.3	1382.4	1206.9	1076.4	1029.4
40°	1416.4	1303.2	1119.8	985.8	936.8
42.5°	1344.7	1223.9	1033.1	893.2	846.2
45°	1269.2	1142.6	944.3	810.1	764.8
47.5°	1197.4	1063.4	859.4	725.2	683.7
50°	1118.1	984.0	776.3	645.8	606.3
52.5°	1040.6	898.9	696.9	572.3	536.4
55°	965.0	817.7	613.7	500.5	464.6
57.5°	887.7	736.6	540.2	434.4	404.1
60°	808.3	657.2	462.6	366.5	336.2
62.5°	730.9	579.9	396.6	306.0	290.9
65°	651.6	498.6	328.6	264.5	258.7
67.5°	576.0	423.0	264.5	232.3	226.6
70°	496.8	349.4	219.0	200.2	192.6
72.5°	421.2	281.3	183.2	168.1	164.3
75°	347.5	215.2	151.1	137.8	136.0
77.5°	273.9	152.9	119.1	111.4	107.6
80°	205.8	109.6	90.6	83.1	83.1
82.5°	143.5	73.7	62.3	58.5	58.5
85°	81.2	41.5	35.9	35.9	35.9
87.5°	30.3	15.0	15.0	13.2	13.2
90°	1.7	20.8	56.7	53.1	54.8
92.5°	35.9	48.6	50.3	52.0	52.0
95°	84.3	100.5	103.4	103.4	100.5
97.5°	140.4	155.4	161.8	161.8	161.8
100°	205.1	218.3	223.0	223.0	221.3
102.5°	273.3	283.1	289.4	291.1	289.4
105°	347.8	352.4	355.9	358.8	358.8
107.5°	421.7	428.7	428.7	429.8	421.7
110°	493.4	502.6	502.6	502.6	498.0



TEST NUMBER: P907708

CATALOG NUMBER: DFN2DIP-4P3F0-050D060US840-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	570.8	580.6	578.9	574.2	570.8
115°	647.0	656.3	653.4	651.7	647.0
117.5°	722.8	735.5	727.3	722.8	718.1
120°	799.0	811.7	799.0	799.0	793.8
122.5°	868.3	884.4	876.4	871.8	868.3
125°	941.1	955.5	950.9	945.7	944.0
127.5°	1012.2	1030.1	1023.7	1016.8	1012.2
130°	1078.6	1099.4	1096.5	1093.1	1086.7
132.5°	1153.2	1169.3	1170.4	1162.4	1157.7
135°	1217.3	1235.2	1238.6	1236.9	1232.2
137.5°	1288.9	1303.3	1306.3	1305.0	1298.2
140°	1351.9	1366.3	1374.4	1374.4	1368.1
142.5°	1416.5	1431.0	1435.6	1437.3	1431.0
145°	1477.8	1489.3	1498.6	1500.4	1494.0
147.5°	1532.7	1547.1	1554.1	1556.9	1550.5
150°	1589.3	1599.1	1605.5	1610.6	1605.5
152.5°	1639.5	1649.4	1657.5	1663.9	1657.5
155°	1689.8	1694.5	1699.6	1707.8	1702.5
157.5°	1733.1	1736.7	1739.5	1751.1	1743.0
160°	1771.9	1775.3	1777.1	1786.9	1780.0
162.5°	1807.7	1807.7	1809.4	1820.4	1812.3
165°	1838.3	1836.5	1836.5	1848.2	1840.1
167.5°	1866.0	1860.9	1860.9	1872.4	1864.3
170°	1886.8	1882.2	1880.5	1892.0	1882.2
172.5°	1901.3	1896.6	1894.9	1906.4	1896.6
175°	1912.8	1908.2	1904.7	1916.3	1906.4
177.5°	1919.1	1914.6	1911.1	1920.9	1911.1
180°	1916.3	1916.3	1916.3	1916.3	1916.3

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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	9.59	10.37	10.60	11.39	12.74	5.55	6.33	6.56	7.35	8.70
	3H	11.26	11.96	12.28	12.98	14.35	6.73	7.43	7.75	8.45	9.82
	4H	11.86	12.53	12.89	13.55	14.93	7.17	7.84	8.20	8.86	10.24
	6H	12.28	12.89	13.32	13.92	15.31	7.48	8.10	8.53	9.13	10.52
	8H	12.40	12.98	13.45	14.03	15.42	7.57	8.15	8.62	9.20	10.58
	12H	12.46	13.01	13.51	14.05	15.46	7.61	8.16	8.66	9.20	10.61
4H	2H	9.60	10.26	10.64	11.29	12.67	6.13	6.80	7.17	7.83	9.21
	3H	11.42	11.97	12.46	13.03	14.42	7.47	8.03	8.52	9.08	10.47
	4H	12.10	12.61	13.16	13.66	15.07	8.01	8.52	9.07	9.57	10.98
	6H	12.61	13.05	13.68	14.12	15.53	8.42	8.86	9.49	9.93	11.34
	8H	12.79	13.19	13.85	14.25	15.68	8.55	8.96	9.61	10.02	11.44
	12H	12.88	13.24	13.96	14.32	15.75	8.61	8.98	9.69	10.05	11.48
8H	4H	12.07	12.47	13.13	13.54	14.96	8.29	8.70	9.35	9.76	11.18
	6H	12.63	12.96	13.71	14.07	15.49	8.80	9.13	9.88	10.24	11.66
	8H	12.84	13.13	13.93	14.22	15.66	8.98	9.28	10.08	10.36	11.81
	12H	12.97	13.23	14.07	14.32	15.80	9.10	9.35	10.19	10.44	11.92
12H	4H	12.02	12.38	13.10	13.46	14.89	8.29	8.66	9.37	9.73	11.16
	6H	12.60	12.90	13.69	13.98	15.42	8.84	9.14	9.94	10.23	11.67
	8H	12.82	13.08	13.91	14.16	15.64	9.05	9.31	10.14	10.39	11.87