

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: P910678

Luminaire Tested: DFN2DIP-HX2F0-050D060US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910678
REPORT IS A COMBINATION OF REPORTS P899197 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-050D060US850-FLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

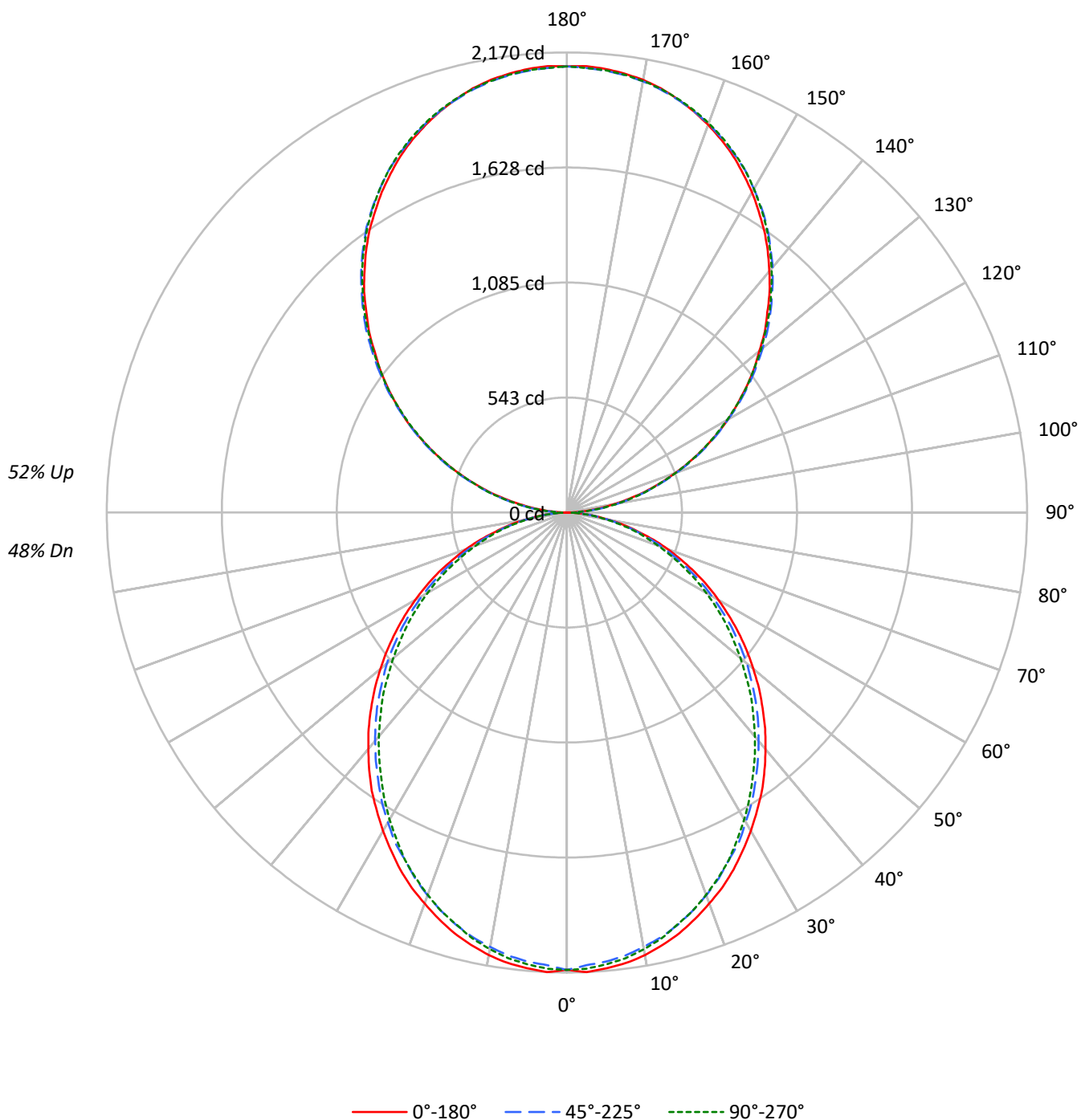
Lumens per Lamp: N/A
Luminaire Lumens: 11378.4 lumens
Efficiency: N/A
Efficacy: 118.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 95.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P910678

CATALOG NUMBER: DFN2DIP-HX2F0-050D060US850-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P910678

CATALOG NUMBER: DFN2DIP-HX2F0-050D060US850-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	107	107	107	107	98	98	98	98	82	82	82	68	68	68	55	55	55
1	97	93	89	86	89	86	82	79	72	70	68	60	58	57	48	47	46
2	89	81	75	70	81	75	70	65	63	59	56	52	50	47	42	41	39
3	81	71	64	58	74	66	60	54	56	51	47	46	43	40	38	35	33
4	74	63	55	49	68	59	52	46	50	44	40	41	37	34	34	31	28
5	68	56	48	42	62	52	45	40	44	39	35	37	33	30	30	27	25
6	63	51	42	37	57	47	40	34	40	34	30	34	29	26	27	24	22
7	58	46	38	32	53	42	35	30	36	31	27	30	26	23	25	22	19
8	54	41	34	28	49	39	32	27	33	28	24	28	24	20	23	20	17
9	50	38	30	25	46	35	28	24	30	25	21	26	21	18	21	18	16
10	47	35	27	23	43	32	26	21	28	23	19	24	20	17	20	17	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5084	5084	5084
5°	5084	5000	5037
10°	5034	4921	4960
15°	4952	4828	4844
20°	4844	4704	4726
25°	4736	4557	4590
30°	4603	4420	4421
35°	4476	4260	4243
40°	4322	4098	4072
45°	4167	3935	3897
50°	3998	3763	3695
55°	3820	3565	3507
60°	3618	3333	3292
65°	3396	3089	3038
70°	3115	2792	2764
75°	2728	2436	2497
80°	2259	1984	2016
85°	1532	1245	1246

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 4167 cd/sqm

TEST NUMBER: P910678

CATALOG NUMBER: DFN2DIP-HX2F0-050D060US850-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	203.1	1.8
10°-20°	571.4	5.0
20°-30°	839.7	7.4
30°-40°	975.2	8.6
40°-50°	974.0	8.6
50°-60°	849.3	7.5
60°-70°	627.9	5.5
70°-80°	355.2	3.1
80°-90°	99.7	0.9
90°-100°	130.2	1.1
100°-110°	413.7	3.6
110°-120°	708.0	6.2
120°-130°	931.2	8.2
130°-140°	1045.3	9.2
140°-150°	1025.0	9.0
150°-160°	859.8	7.6
160°-170°	570.2	5.0
170°-180°	199.3	1.8
0°-30°	1614.1	14.2
0°-40°	2589.4	22.8
0°-60°	4412.7	38.8
0°-90°	5495.5	48.3
90°-120°	1252.0	11.0
90°-150°	4253.5	37.4
90°-180°	5883.0	51.7
0°-180°	11378.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2158	2158	2158	2158	2158	
5°	2158	2150	2126	2143	2139	205
15°	2054	2042	2014	2023	2012	578
25°	1859	1842	1807	1811	1807	855
35°	1604	1583	1550	1537	1527	1001
45°	1305	1290	1259	1237	1228	1007
55°	988	975	950	925	915	883
65°	666	654	633	614	604	659
75°	348	344	334	322	326	372
85°	85	83	81	75	73	95
90°	2	23	62	58	60	11
95°	93	110	114	114	110	103
105°	382	387	391	394	394	403
115°	710	721	718	716	710	703
125°	1034	1049	1044	1039	1037	924
135°	1337	1356	1360	1358	1353	1033
145°	1623	1636	1646	1648	1641	1014
155°	1856	1861	1866	1875	1870	854
165°	2019	2017	2017	2030	2021	569
175°	2101	2096	2092	2104	2094	200
180°	2104	2104	2104	2104	2104	

TEST NUMBER: P910678

CATALOG NUMBER: DFN2DIP-HX2F0-050D060US850-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2157.6	2157.6	2157.6	2157.6	2157.6
2.5°	2170.1	2159.8	2136.9	2157.6	2153.7
5°	2157.6	2149.5	2126.5	2143.0	2139.2
7.5°	2143.0	2130.7	2107.9	2124.6	2120.4
10°	2120.4	2105.9	2081.0	2097.5	2091.4
12.5°	2089.1	2076.8	2052.0	2062.3	2058.1
15°	2053.9	2041.6	2014.5	2022.9	2012.5
17.5°	2010.3	1998.0	1970.9	1981.2	1970.9
20°	1962.6	1950.3	1921.2	1927.3	1919.2
22.5°	1915.0	1896.3	1869.2	1869.2	1865.0
25°	1858.9	1842.4	1807.1	1811.1	1807.1
27.5°	1796.6	1782.1	1755.2	1749.0	1738.7
30°	1734.5	1717.8	1686.8	1680.6	1672.3
32.5°	1668.0	1655.7	1622.5	1609.9	1601.6
35°	1603.7	1583.1	1549.8	1537.3	1527.0
37.5°	1531.1	1512.5	1479.2	1464.7	1454.3
40°	1456.6	1439.8	1406.5	1388.0	1379.7
42.5°	1383.9	1367.2	1334.1	1313.2	1300.9
45°	1305.1	1290.5	1259.3	1236.6	1228.2
47.5°	1228.2	1213.7	1180.5	1157.6	1145.3
50°	1147.3	1136.9	1107.9	1078.8	1068.4
52.5°	1068.4	1053.9	1027.0	1004.2	989.7
55°	987.7	975.1	950.2	925.3	915.0
57.5°	906.6	896.3	869.2	844.4	836.0
60°	825.7	817.6	788.5	765.5	759.4
62.5°	746.9	732.4	711.6	690.9	682.6
65°	666.1	653.5	632.8	614.2	603.7
67.5°	583.1	572.6	554.1	539.5	531.1
70°	506.3	497.9	479.2	464.7	456.6
72.5°	427.5	419.1	408.8	394.2	388.0
75°	348.4	344.5	333.9	321.6	325.8
77.5°	278.0	269.6	265.5	259.3	253.2
80°	207.6	205.4	201.2	195.1	190.9
82.5°	141.1	141.1	139.1	130.8	130.8
85°	84.9	83.0	81.0	74.6	72.6
87.5°	37.4	33.3	29.1	22.8	20.7
90°	1.9	22.8	62.2	58.3	60.2
92.5°	39.4	53.3	55.2	57.1	57.1
95°	92.6	110.3	113.6	113.6	110.3
97.5°	154.2	170.7	177.7	177.7	177.7
100°	225.2	239.8	244.9	244.9	243.0
102.5°	300.1	310.9	317.8	319.7	317.8
105°	381.9	387.0	390.8	394.0	394.0
107.5°	463.1	470.8	470.8	472.0	463.1
110°	541.9	551.9	551.9	551.9	546.8

TEST NUMBER: P910678

CATALOG NUMBER: DFN2DIP-HX2F0-050D060US850-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	626.8	637.6	635.7	630.6	626.8
115°	710.5	720.7	717.5	715.6	710.5
117.5°	793.7	807.7	798.7	793.7	788.6
120°	877.4	891.4	877.4	877.4	871.7
122.5°	953.5	971.3	962.4	957.4	953.5
125°	1033.5	1049.3	1044.2	1038.6	1036.7
127.5°	1111.6	1131.2	1124.2	1116.7	1111.6
130°	1184.5	1207.4	1204.2	1200.4	1193.4
132.5°	1266.4	1284.1	1285.3	1276.5	1271.4
135°	1336.8	1356.4	1360.2	1358.3	1353.2
137.5°	1415.4	1431.3	1434.5	1433.2	1425.6
140°	1484.6	1500.5	1509.3	1509.3	1502.4
142.5°	1555.6	1571.5	1576.6	1578.4	1571.5
145°	1622.9	1635.6	1645.8	1647.6	1640.7
147.5°	1683.1	1699.0	1706.6	1709.7	1702.8
150°	1745.3	1756.1	1763.1	1768.7	1763.1
152.5°	1800.5	1811.3	1820.2	1827.2	1820.2
155°	1855.7	1860.8	1866.4	1875.4	1869.7
157.5°	1903.3	1907.1	1910.3	1923.0	1914.1
160°	1945.9	1949.6	1951.5	1962.3	1954.7
162.5°	1985.1	1985.1	1987.0	1999.1	1990.2
165°	2018.7	2016.8	2016.8	2029.6	2020.7
167.5°	2049.2	2043.6	2043.6	2056.2	2047.3
170°	2072.1	2067.0	2065.1	2077.7	2067.0
172.5°	2087.9	2082.8	2080.9	2093.6	2082.8
175°	2100.6	2095.6	2091.7	2104.4	2093.6
177.5°	2107.5	2102.6	2098.7	2109.4	2098.7
180°	2104.4	2104.4	2104.4	2104.4	2104.4

TEST NUMBER: P910678

CATALOG NUMBER: DFN2DIP-HX2F0-050D060US850-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	12.62	13.47	13.59	14.46	15.75	12.20	13.05	13.17	14.03	15.33
	3H	14.26	15.02	15.24	16.01	17.33	13.80	14.56	14.78	15.55	16.87
	4H	14.83	15.55	15.82	16.54	17.87	14.37	15.09	15.36	16.09	17.41
	6H	15.21	15.87	16.21	16.87	18.21	14.75	15.41	15.75	16.41	17.75
	8H	15.30	15.93	16.31	16.95	18.29	14.84	15.47	15.86	16.49	17.83
	12H	15.34	15.94	16.36	16.95	18.31	14.88	15.48	15.90	16.49	17.85
4H	2H	13.07	13.79	14.07	14.79	16.12	12.73	13.45	13.74	14.45	15.78
	3H	14.91	15.51	15.92	16.54	17.87	14.53	15.12	15.54	16.15	17.49
	4H	15.60	16.15	16.62	17.17	18.53	15.21	15.76	16.23	16.78	18.14
	6H	16.09	16.57	17.12	17.61	18.97	15.70	16.17	16.73	17.21	18.57
	8H	16.23	16.67	17.26	17.71	19.08	15.83	16.28	16.86	17.31	18.68
	12H	16.29	16.69	17.34	17.74	19.12	15.89	16.29	16.94	17.34	18.72
8H	4H	15.79	16.23	16.82	17.26	18.64	15.44	15.88	16.47	16.91	18.29
	6H	16.39	16.75	17.44	17.83	19.20	16.04	16.40	17.09	17.48	18.85
	8H	16.59	16.91	17.65	17.98	19.37	16.24	16.56	17.30	17.62	19.01
	12H	16.71	16.99	17.77	18.05	19.48	16.34	16.62	17.40	17.68	19.11
12H	4H	15.77	16.17	16.82	17.22	18.60	15.43	15.82	16.47	16.88	18.25
	6H	16.41	16.73	17.48	17.80	19.19	16.07	16.39	17.13	17.46	18.85
	8H	16.64	16.92	17.70	17.98	19.41	16.29	16.57	17.36	17.63	19.06