

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: P902581

Luminaire Tested: DFN2DIP-HX3F0-050D060US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902581
REPORT IS A COMBINATION OF REPORTS P900768 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-050D060US830-RLLONL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

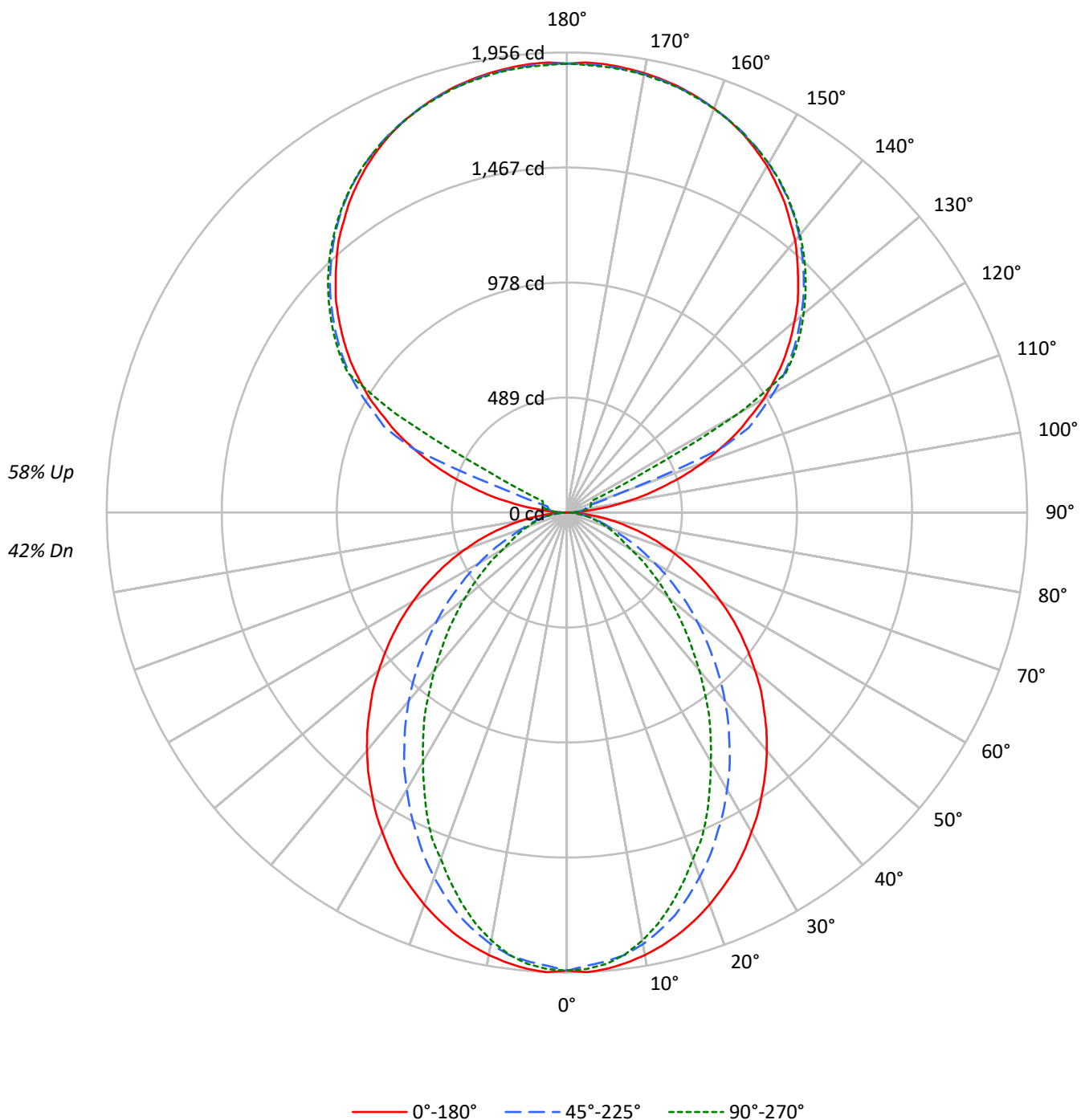
Lumens per Lamp: N/A
Luminaire Lumens: 9604.5 lumens
Efficiency: N/A
Efficacy: 106.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 90.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P902581

CATALOG NUMBER: DFN2DIP-HX3F0-050D060US830-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P902581

CATALOG NUMBER: DFN2DIP-HX3F0-050D060US830-RLLONL

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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	43	43	42
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36
3	81	72	65	59	73	66	60	55	55	50	46	44	41	39	35	33	31
4	74	64	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24
6	63	51	43	38	57	47	40	35	39	34	30	32	29	26	26	23	21
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19
8	54	42	34	29	49	39	32	27	33	28	24	27	23	20	22	19	17
9	50	38	31	26	46	35	29	25	30	25	22	25	21	18	20	17	15
10	47	35	28	23	43	33	26	22	28	23	19	23	19	17	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2256	2256	2256
5°	2259	2219	2233
10°	2235	2174	2159
15°	2204	2100	2046
20°	2162	2000	1907
25°	2119	1887	1773
30°	2062	1772	1603
35°	2006	1649	1455
40°	1949	1521	1284
45°	1883	1380	1129
50°	1815	1237	979
55°	1743	1085	834
60°	1660	926	685
65°	1564	764	615
70°	1449	614	555
75°	1303	538	502
80°	1092	446	431
85°	747	291	317

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1883 cd/sqm

TEST NUMBER: P902581

CATALOG NUMBER: DFN2DIP-HX3F0-050D060US830-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.5	1.9
10°-20°	501.1	5.2
20°-30°	703.6	7.3
30°-40°	766.9	8.0
40°-50°	704.9	7.3
50°-60°	553.6	5.8
60°-70°	360.3	3.8
70°-80°	185.5	1.9
80°-90°	50.7	0.5
90°-100°	62.9	0.7
100°-110°	234.6	2.4
110°-120°	622.2	6.5
120°-130°	1032.0	10.7
130°-140°	1096.2	11.4
140°-150°	1018.8	10.6
150°-160°	819.1	8.5
160°-170°	527.8	5.5
170°-180°	181.7	1.9
0°-30°	1387.2	14.4
0°-40°	2154.2	22.4
0°-60°	3412.7	35.5
0°-90°	4009.2	41.7
90°-120°	919.8	9.6
90°-150°	4066.8	42.3
90°-180°	5595.0	58.3
0°-180°	9604.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1948	1948	1948	1948	1948	
5°	1948	1939	1916	1932	1927	185
15°	1853	1833	1773	1740	1722	522
25°	1682	1625	1509	1437	1410	773
35°	1449	1359	1204	1093	1054	907
45°	1185	1066	881	756	714	915
55°	901	763	573	467	434	805
65°	608	465	307	247	242	603
75°	324	201	141	129	127	343
85°	76	39	34	34	34	87
90°	1	17	28	35	37	9
95°	90	44	54	61	59	106
105°	420	461	84	99	105	449
115°	794	818	852	213	113	782
125°	1123	1141	1167	1177	1181	1001
135°	1389	1412	1424	1438	1435	1073
145°	1612	1610	1634	1643	1636	1008
155°	1775	1762	1779	1787	1776	818
165°	1870	1862	1866	1876	1866	528
175°	1913	1903	1906	1915	1902	182
180°	1909	1909	1909	1909	1909	

TEST NUMBER: P902581

CATALOG NUMBER: DFN2DIP-HX3F0-050D060US830-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1947.8	1947.8	1947.8	1947.8	1947.8
2.5°	1956.5	1947.8	1928.3	1946.1	1942.5
5°	1947.8	1939.0	1916.0	1931.8	1926.7
7.5°	1931.8	1921.4	1896.7	1903.7	1894.8
10°	1910.7	1898.4	1863.2	1857.8	1847.3
12.5°	1884.3	1868.5	1820.8	1810.3	1790.8
15°	1852.6	1833.2	1773.3	1739.8	1722.2
17.5°	1815.5	1787.3	1713.3	1674.5	1646.2
20°	1773.3	1738.0	1649.8	1605.9	1567.0
22.5°	1727.5	1686.9	1584.6	1524.8	1498.4
25°	1681.6	1625.1	1508.8	1436.6	1410.0
27.5°	1627.0	1567.0	1438.3	1355.5	1314.9
30°	1568.9	1501.8	1360.7	1270.9	1223.2
32.5°	1512.4	1431.3	1286.9	1181.0	1136.9
35°	1449.0	1359.1	1204.0	1092.9	1054.0
37.5°	1387.2	1290.2	1126.4	1004.7	960.7
40°	1322.0	1216.4	1045.2	920.1	874.3
42.5°	1255.1	1142.3	964.2	833.7	789.8
45°	1184.6	1066.4	881.4	756.1	713.8
47.5°	1117.6	992.5	802.1	676.8	638.1
50°	1043.6	918.4	724.5	602.8	565.9
52.5°	971.2	839.0	650.4	534.1	500.7
55°	900.7	763.2	572.8	467.1	433.7
57.5°	828.5	687.5	504.2	405.5	377.2
60°	754.4	613.4	431.8	342.0	313.8
62.5°	682.2	541.2	370.1	285.6	271.5
65°	608.1	465.3	306.7	246.9	241.5
67.5°	537.6	394.8	246.9	216.8	211.5
70°	463.6	326.1	204.4	186.8	179.7
72.5°	393.1	262.6	171.0	156.9	153.4
75°	324.3	200.9	141.0	128.7	127.0
77.5°	255.6	142.7	111.1	104.0	100.4
80°	192.1	102.3	84.5	77.6	77.6
82.5°	133.9	68.8	58.2	54.6	54.6
85°	75.8	38.7	33.5	33.5	33.5
87.5°	28.3	14.0	14.0	12.3	12.3
90°	1.3	16.6	27.5	34.6	37.2
92.5°	34.6	29.0	33.1	35.9	37.2
95°	89.7	44.1	53.8	60.9	59.4
97.5°	161.6	48.4	70.3	74.6	76.0
100°	244.5	55.2	78.7	89.7	92.5
102.5°	335.5	332.9	81.5	96.6	100.9
105°	419.8	461.3	84.3	99.3	105.0
107.5°	517.9	552.3	87.1	102.2	107.7
110°	611.9	640.7	241.8	103.7	109.1

TEST NUMBER: P902581

CATALOG NUMBER: DFN2DIP-HX3F0-050D060US830-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	700.2	725.0	701.5	106.2	110.6
115°	794.1	817.6	852.2	212.7	113.3
117.5°	875.5	903.1	926.7	729.2	367.3
120°	966.8	987.4	1012.4	1028.9	842.4
122.5°	1044.0	1066.1	1093.8	1102.0	1103.5
125°	1122.8	1140.8	1167.0	1176.7	1180.7
127.5°	1194.6	1213.9	1234.7	1248.5	1249.8
130°	1262.3	1284.4	1299.5	1314.8	1313.4
132.5°	1331.3	1349.3	1364.4	1376.9	1375.5
135°	1389.4	1411.6	1423.8	1437.8	1434.9
137.5°	1450.0	1466.6	1480.5	1494.3	1490.3
140°	1509.4	1520.6	1535.7	1548.1	1541.2
142.5°	1559.2	1569.0	1586.9	1597.8	1590.9
145°	1611.7	1610.2	1633.7	1643.4	1636.5
147.5°	1657.2	1653.0	1676.5	1683.4	1678.0
150°	1701.5	1691.8	1713.9	1722.1	1715.2
152.5°	1738.7	1727.7	1748.3	1756.7	1747.0
155°	1774.6	1762.3	1778.9	1787.1	1776.0
157.5°	1803.6	1792.6	1805.1	1814.8	1803.6
160°	1828.5	1820.1	1828.5	1836.7	1827.1
162.5°	1850.5	1842.3	1849.2	1858.9	1846.4
165°	1869.9	1861.7	1865.8	1875.5	1865.8
167.5°	1885.1	1876.8	1881.0	1890.7	1878.2
170°	1897.6	1889.2	1892.1	1901.7	1889.2
172.5°	1905.8	1897.6	1900.4	1910.1	1897.6
175°	1912.7	1903.0	1905.8	1915.4	1901.7
177.5°	1915.4	1905.8	1907.2	1916.9	1904.5
180°	1908.6	1908.6	1908.6	1908.6	1908.6

TEST NUMBER: P902581

CATALOG NUMBER: DFN2DIP-HX3F0-050D060US830-RLONL

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	9.11	9.88	10.14	10.91	12.30	5.08	5.85	6.12	6.89	8.27
	3H	10.77	11.46	11.81	12.50	13.91	6.26	6.95	7.30	7.99	9.40
	4H	11.37	12.02	12.43	13.07	14.48	6.71	7.36	7.76	8.40	9.82
	6H	11.79	12.38	12.85	13.43	14.86	7.02	7.62	8.08	8.67	10.09
	8H	11.91	12.47	12.97	13.54	14.96	7.11	7.68	8.18	8.74	10.16
	12H	11.96	12.50	13.03	13.56	15.01	7.15	7.69	8.22	8.75	10.19
4H	2H	9.12	9.77	10.18	10.81	12.23	5.67	6.32	6.73	7.36	8.78
	3H	10.93	11.47	12.00	12.55	13.97	7.01	7.55	8.07	8.62	10.05
	4H	11.62	12.11	12.69	13.17	14.62	7.55	8.04	8.62	9.11	10.56
	6H	12.12	12.54	13.20	13.63	15.07	7.96	8.38	9.04	9.47	10.91
	8H	12.29	12.69	13.37	13.76	15.22	8.08	8.48	9.17	9.56	11.02
	12H	12.38	12.73	13.48	13.83	15.29	8.14	8.50	9.24	9.59	11.06
8H	4H	11.58	11.97	12.66	13.05	14.51	7.82	8.22	8.90	9.29	10.75
	6H	12.13	12.46	13.24	13.58	15.04	8.33	8.66	9.43	9.78	11.23
	8H	12.34	12.63	13.46	13.73	15.21	8.52	8.80	9.63	9.91	11.38
	12H	12.47	12.73	13.59	13.83	15.34	8.63	8.88	9.74	9.98	11.49
12H	4H	11.53	11.88	12.63	12.98	14.44	7.82	8.18	8.92	9.27	10.73
	6H	12.11	12.39	13.22	13.50	14.97	8.38	8.66	9.49	9.77	11.24
	8H	12.32	12.57	13.43	13.67	15.19	8.58	8.83	9.69	9.93	11.44