

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: P926959

Luminaire Tested: DFN2DIP-HX4F0-060D080US830-FLLFLL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P926959
REPORT IS A COMBINATION OF REPORTS P899375 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-060D080US830-FLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

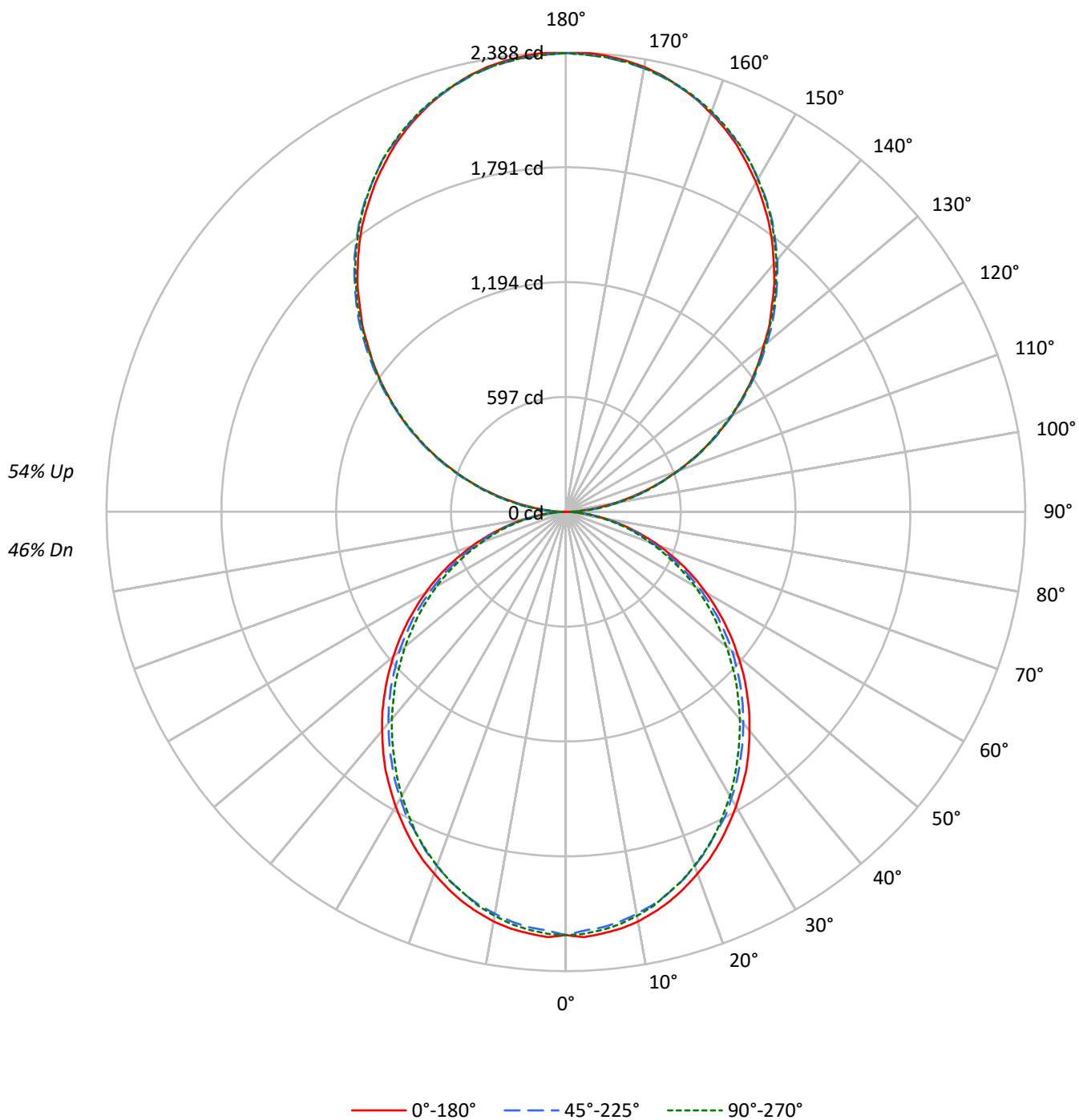
Lumens per Lamp: N/A
Luminaire Lumens: 12271.4 lumens
Efficiency: N/A
Efficacy: 109.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 112.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P926959

CATALOG NUMBER: DFN2DIP-HX4F0-060D080US830-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P926959

CATALOG NUMBER: DFN2DIP-HX4F0-060D080US830-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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52
1	97	93	89	85	89	85	82	79	71	69	66	58	56	55	46	45	44
2	88	81	75	70	81	74	69	65	62	58	55	51	48	46	41	39	37
3	80	71	64	58	73	65	59	54	55	50	46	45	42	39	36	34	32
4	74	63	55	49	67	58	51	46	49	43	39	40	36	33	32	29	27
5	67	56	48	42	62	52	45	39	44	38	34	36	32	29	29	26	24
6	62	50	42	36	57	46	39	34	39	34	30	33	28	25	26	23	21
7	57	45	37	32	53	42	35	30	36	30	26	30	25	22	24	21	19
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	17
9	50	37	30	25	45	35	28	24	30	24	21	25	21	18	20	17	15
10	46	34	27	22	42	32	25	21	27	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1636	1636	1636
5°	1639	1613	1624
10°	1626	1592	1602
15°	1602	1566	1568
20°	1570	1530	1533
25°	1538	1486	1492
30°	1498	1446	1441
35°	1460	1398	1386
40°	1413	1350	1334
45°	1366	1302	1281
50°	1315	1251	1219
55°	1262	1193	1163
60°	1201	1123	1098
65°	1136	1051	1021
70°	1052	964	939
75°	935	859	863
80°	796	725	718
85°	577	494	478

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1798 cd/sqm

TEST NUMBER: P926959

CATALOG NUMBER: DFN2DIP-HX4F0-060D080US830-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.1	1.7
10°-20°	582.7	4.7
20°-30°	856.3	7.0
30°-40°	994.6	8.1
40°-50°	993.4	8.1
50°-60°	866.2	7.1
60°-70°	640.3	5.2
70°-80°	362.3	3.0
80°-90°	102.4	0.8
90°-100°	147.6	1.2
100°-110°	468.9	3.8
110°-120°	802.3	6.5
120°-130°	1055.2	8.6
130°-140°	1184.4	9.7
140°-150°	1161.5	9.5
150°-160°	974.3	7.9
160°-170°	646.1	5.3
170°-180°	225.8	1.8
0°-30°	1646.2	13.4
0°-40°	2640.7	21.5
0°-60°	4500.3	36.7
0°-90°	5605.2	45.7
90°-120°	1418.8	11.6
90°-150°	4819.9	39.3
90°-180°	6666.0	54.3
0°-180°	12271.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2200	2200	2200	2200	2200	
5°	2200	2192	2169	2186	2182	209
15°	2095	2082	2054	2063	2052	590
25°	1896	1879	1843	1847	1843	872
35°	1636	1614	1581	1568	1557	1021
45°	1331	1316	1284	1261	1253	1027
55°	1007	994	969	944	933	901
65°	679	666	645	626	616	672
75°	355	351	340	328	332	379
85°	87	85	83	76	74	97
90°	2	26	70	66	68	12
95°	105	125	129	129	125	117
105°	433	438	443	446	446	457
115°	805	817	813	811	805	796
125°	1171	1189	1183	1177	1175	1047
135°	1515	1537	1541	1539	1533	1171
145°	1839	1853	1865	1867	1859	1149
155°	2103	2109	2115	2125	2119	968
165°	2288	2285	2285	2300	2290	645
175°	2380	2374	2370	2385	2372	226
180°	2385	2385	2385	2385	2385	

TEST NUMBER: P926959

CATALOG NUMBER: DFN2DIP-HX4F0-060D080US830-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2200.4	2200.4	2200.4	2200.4	2200.4
2.5°	2213.2	2202.6	2179.2	2200.4	2196.3
5°	2200.4	2192.1	2168.7	2185.6	2181.5
7.5°	2185.6	2173.0	2149.7	2166.7	2162.5
10°	2162.5	2147.7	2122.2	2139.1	2132.8
12.5°	2130.6	2118.0	2092.6	2103.2	2098.9
15°	2094.6	2082.1	2054.5	2063.0	2052.5
17.5°	2050.2	2037.7	2010.1	2020.5	2010.1
20°	2001.5	1989.0	1959.3	1965.6	1957.3
22.5°	1953.0	1933.9	1906.3	1906.3	1902.1
25°	1895.7	1879.0	1843.0	1847.0	1843.0
27.5°	1832.2	1817.4	1790.0	1783.8	1773.2
30°	1769.0	1751.8	1720.3	1713.9	1705.4
32.5°	1701.1	1688.6	1654.7	1641.8	1633.4
35°	1635.6	1614.5	1580.6	1567.8	1557.2
37.5°	1561.5	1542.4	1508.6	1493.7	1483.1
40°	1485.4	1468.3	1434.5	1415.6	1407.1
42.5°	1411.3	1394.2	1360.6	1339.3	1326.7
45°	1331.0	1316.1	1284.3	1261.2	1252.6
47.5°	1252.6	1237.8	1203.9	1180.6	1167.9
50°	1170.0	1159.5	1129.9	1100.2	1089.6
52.5°	1089.6	1074.8	1047.4	1024.1	1009.3
55°	1007.2	994.4	969.1	943.7	933.2
57.5°	924.7	914.1	886.5	861.2	852.6
60°	842.0	833.7	804.1	780.8	774.5
62.5°	761.6	746.8	725.7	704.6	696.1
65°	679.3	666.5	645.4	626.3	615.7
67.5°	594.6	583.9	565.0	550.2	541.7
70°	516.3	507.8	488.7	473.9	465.6
72.5°	435.9	427.4	416.9	402.1	395.8
75°	355.3	351.4	340.5	328.0	332.2
77.5°	283.5	275.0	270.7	264.5	258.2
80°	211.7	209.4	205.2	198.9	194.6
82.5°	143.9	143.9	141.8	133.4	133.4
85°	86.6	84.6	82.6	76.1	74.1
87.5°	38.2	33.9	29.6	23.4	21.1
90°	2.2	25.9	70.5	66.2	68.3
92.5°	44.6	60.4	62.6	64.7	64.7
95°	105.0	125.1	128.7	128.7	125.1
97.5°	174.7	193.4	201.3	201.3	201.3
100°	255.2	271.7	277.5	277.5	275.3
102.5°	340.1	352.3	360.1	362.3	360.1
105°	432.8	438.5	442.9	446.5	446.5
107.5°	524.8	533.5	533.5	534.9	524.8
110°	613.9	625.4	625.4	625.4	619.7

TEST NUMBER: P926959

CATALOG NUMBER: DFN2DIP-HX4F0-060D080US830-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	710.3	722.5	720.4	714.6	710.3
115°	805.2	816.7	813.1	810.9	805.2
117.5°	899.3	915.2	905.1	899.3	893.6
120°	994.2	1010.1	994.2	994.2	987.7
122.5°	1080.5	1100.7	1090.6	1084.8	1080.5
125°	1171.1	1189.1	1183.3	1176.8	1174.7
127.5°	1259.6	1281.8	1273.9	1265.3	1259.6
130°	1342.2	1368.0	1364.5	1360.2	1352.3
132.5°	1435.0	1455.0	1456.5	1446.5	1440.7
135°	1514.7	1537.0	1541.4	1539.2	1533.4
137.5°	1603.9	1621.9	1625.4	1624.0	1615.4
140°	1682.3	1700.2	1710.3	1710.3	1702.3
142.5°	1762.8	1780.8	1786.5	1788.7	1780.8
145°	1839.0	1853.3	1864.8	1867.0	1859.1
147.5°	1907.2	1925.2	1933.8	1937.5	1929.6
150°	1977.7	1989.9	1997.8	2004.3	1997.8
152.5°	2040.2	2052.5	2062.6	2070.5	2062.6
155°	2102.8	2108.6	2115.1	2125.1	2118.6
157.5°	2156.7	2161.1	2164.6	2179.0	2169.0
160°	2204.9	2209.2	2211.4	2223.5	2215.0
162.5°	2249.5	2249.5	2251.6	2265.3	2255.2
165°	2287.5	2285.4	2285.4	2299.8	2289.7
167.5°	2322.0	2315.6	2315.6	2330.0	2319.9
170°	2348.0	2342.2	2340.0	2354.5	2342.2
172.5°	2366.0	2360.2	2358.0	2372.4	2360.2
175°	2380.3	2374.5	2370.2	2384.6	2372.4
177.5°	2388.2	2382.5	2378.1	2390.4	2378.1
180°	2384.6	2384.6	2384.6	2384.6	2384.6

TEST NUMBER: P926959

CATALOG NUMBER: DFN2DIP-HX4F0-060D080US830-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	8.57	9.39	9.56	10.40	11.73	8.14	8.96	9.13	9.97	11.30
	3H	10.23	10.97	11.23	11.98	13.33	9.75	10.49	10.76	11.51	12.86
	4H	10.81	11.51	11.83	12.53	13.89	10.34	11.04	11.36	12.06	13.42
	6H	11.21	11.86	12.24	12.88	14.25	10.74	11.38	11.76	12.40	13.78
	8H	11.32	11.93	12.35	12.97	14.34	10.84	11.45	11.87	12.49	13.86
	12H	11.36	11.95	12.40	12.98	14.37	10.88	11.47	11.92	12.50	13.89
4H	2H	9.03	9.73	10.05	10.74	12.10	8.68	9.38	9.70	10.40	11.76
	3H	10.89	11.47	11.92	12.52	13.89	10.50	11.08	11.53	12.13	13.50
	4H	11.60	12.14	12.64	13.18	14.57	11.20	11.73	12.24	12.77	14.17
	6H	12.12	12.58	13.17	13.64	15.03	11.71	12.17	12.76	13.23	14.62
	8H	12.27	12.70	13.32	13.75	15.16	11.85	12.28	12.90	13.34	14.74
	12H	12.34	12.73	13.41	13.79	15.21	11.92	12.30	12.98	13.37	14.79
8H	4H	11.80	12.23	12.85	13.28	14.69	11.44	11.87	12.49	12.92	14.33
	6H	12.43	12.78	13.50	13.88	15.28	12.07	12.42	13.14	13.52	14.92
	8H	12.65	12.96	13.73	14.04	15.46	12.28	12.59	13.36	13.67	15.10
	12H	12.78	13.05	13.86	14.13	15.59	12.40	12.67	13.48	13.74	15.21
12H	4H	11.78	12.17	12.85	13.24	14.65	11.43	11.82	12.50	12.89	14.30
	6H	12.46	12.77	13.54	13.85	15.27	12.11	12.42	13.19	13.50	14.92
	8H	12.70	12.97	13.78	14.05	15.51	12.34	12.62	13.43	13.69	15.16

END OF REPORT