

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: P902588

Luminaire Tested: DFN2DIP-HX3F0-050D090US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902588
REPORT IS A COMBINATION OF REPORTS P899289 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-050D090US830-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

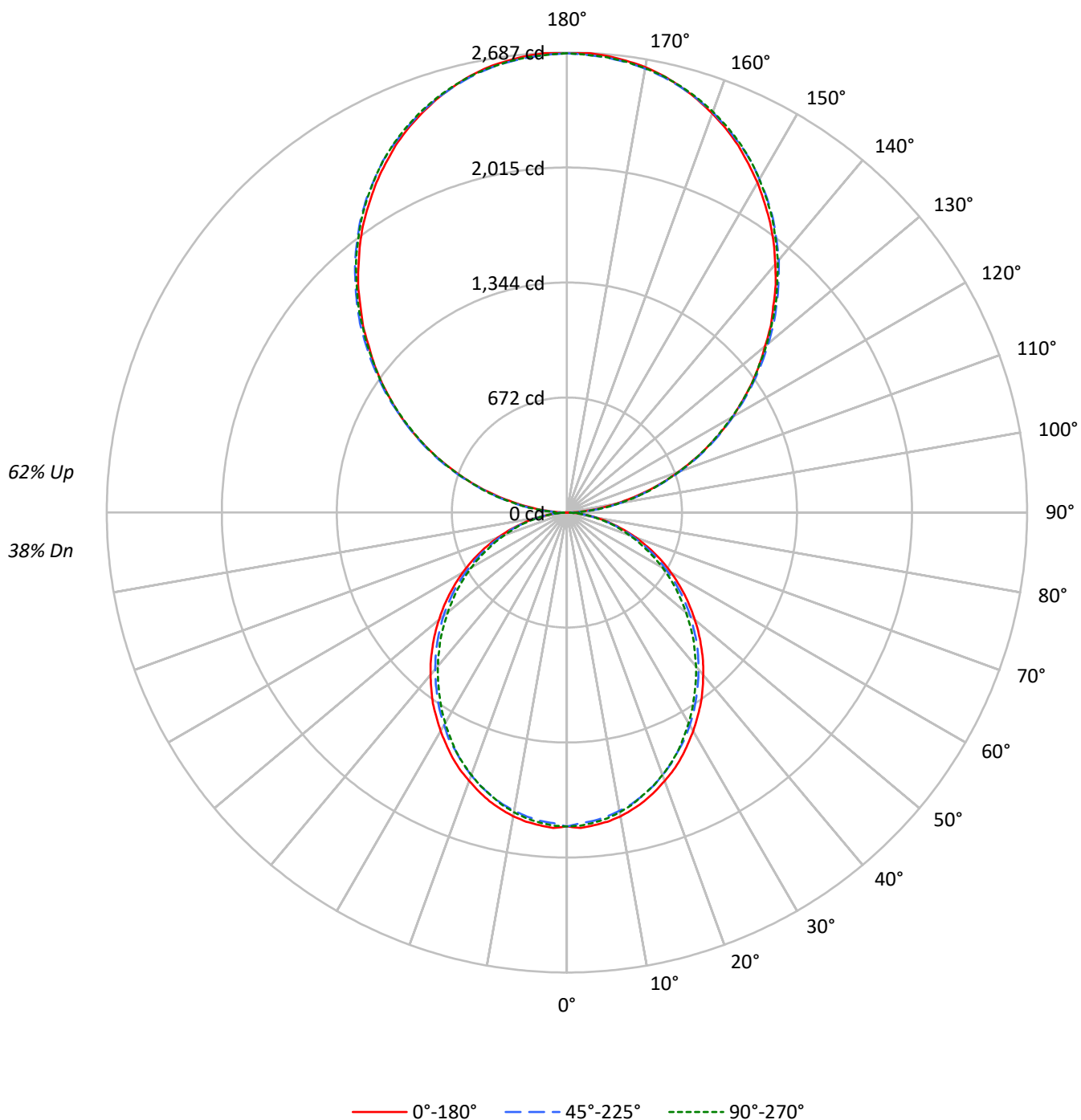
Lumens per Lamp: N/A
Luminaire Lumens: 12172.9 lumens
Efficiency: N/A
Efficacy: 105.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 115.9
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: P902588

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US830-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P902588

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US830-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	104	104	104	104	95	95	95	95	77	77	77	61	61	61	45	45	45
1	95	91	87	84	86	83	79	77	67	65	63	53	52	50	40	39	38
2	87	79	73	68	78	72	67	63	59	55	52	47	44	42	35	34	32
3	79	70	63	57	71	64	57	52	52	47	44	41	38	35	31	29	27
4	72	62	54	48	65	56	50	44	46	41	37	37	33	30	28	26	24
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	25	23	21
6	61	49	41	35	55	45	38	33	37	32	28	30	26	23	23	20	18
7	56	44	36	31	51	41	34	29	34	28	25	27	23	20	21	18	16
8	52	40	33	27	47	37	30	25	31	25	22	25	21	18	19	16	14
9	49	37	29	24	44	34	27	23	28	23	19	23	19	16	18	15	13
10	45	33	26	22	41	31	24	20	26	21	17	21	17	15	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2124	2124	2124
5°	2127	2093	2108
10°	2108	2063	2078
15°	2076	2028	2032
20°	2034	1979	1985
25°	1991	1921	1931
30°	1938	1867	1863
35°	1887	1804	1791
40°	1825	1740	1722
45°	1763	1675	1652
50°	1696	1608	1570
55°	1624	1529	1495
60°	1544	1437	1409
65°	1456	1340	1308
70°	1345	1223	1198
75°	1190	1082	1095
80°	1003	903	902
85°	711	597	585

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2524 cd/sqm

TEST NUMBER: P902588

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US830-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.6	1.4
10°-20°	485.6	4.0
20°-30°	713.7	5.9
30°-40°	828.9	6.8
40°-50°	827.8	6.8
50°-60°	721.8	5.9
60°-70°	533.6	4.4
70°-80°	301.9	2.5
80°-90°	87.3	0.7
90°-100°	166.0	1.4
100°-110°	527.5	4.3
110°-120°	902.7	7.4
120°-130°	1187.2	9.8
130°-140°	1332.5	10.9
140°-150°	1306.7	10.7
150°-160°	1096.1	9.0
160°-170°	726.9	6.0
170°-180°	254.1	2.1
0°-30°	1371.9	11.3
0°-40°	2200.7	18.1
0°-60°	3750.4	30.8
0°-90°	4673.2	38.4
90°-120°	1596.2	13.1
90°-150°	5422.6	44.5
90°-180°	7500.0	61.6
0°-180°	12172.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1834	1834	1834	1834	1834	
5°	1834	1827	1807	1821	1818	174
15°	1746	1735	1712	1719	1710	492
25°	1580	1566	1536	1539	1536	727
35°	1363	1346	1317	1307	1298	851
45°	1109	1097	1070	1051	1044	856
55°	839	829	808	786	778	750
65°	566	555	538	522	513	560
75°	296	293	284	273	277	316
85°	72	70	69	63	62	81
90°	2	29	79	74	77	12
95°	118	141	145	145	141	131
105°	487	493	498	502	502	514
115°	906	919	915	912	906	896
125°	1318	1338	1331	1324	1322	1177
135°	1704	1729	1734	1732	1725	1317
145°	2069	2085	2098	2100	2092	1293
155°	2366	2372	2380	2391	2384	1089
165°	2574	2571	2571	2587	2576	726
175°	2678	2671	2667	2683	2669	254
180°	2683	2683	2683	2683	2683	

TEST NUMBER: P902588

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US830-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1833.7	1833.7	1833.7	1833.7	1833.7
2.5°	1844.4	1835.6	1816.2	1833.7	1830.4
5°	1833.7	1826.8	1807.3	1821.4	1818.1
7.5°	1821.4	1810.9	1791.5	1805.7	1802.1
10°	1802.1	1789.8	1768.7	1782.6	1777.4
12.5°	1775.6	1765.1	1744.0	1752.8	1749.2
15°	1745.6	1735.1	1712.1	1719.3	1710.4
17.5°	1708.5	1698.1	1675.1	1683.9	1675.1
20°	1668.0	1657.6	1632.9	1638.0	1631.2
22.5°	1627.6	1611.7	1588.7	1588.7	1585.1
25°	1579.9	1565.8	1535.9	1539.3	1535.9
27.5°	1526.9	1514.6	1491.8	1486.5	1477.7
30°	1474.1	1460.0	1433.6	1428.3	1421.3
32.5°	1417.7	1407.2	1378.9	1368.3	1361.2
35°	1363.0	1345.5	1317.2	1306.6	1297.8
37.5°	1301.3	1285.4	1257.2	1244.8	1236.0
40°	1237.9	1223.7	1195.4	1179.7	1172.6
42.5°	1176.2	1162.0	1133.9	1116.1	1105.6
45°	1109.2	1096.8	1070.3	1051.0	1043.9
47.5°	1043.9	1031.5	1003.3	983.8	973.4
50°	975.1	966.3	941.6	916.9	908.0
52.5°	908.0	895.7	872.9	853.5	841.1
55°	839.4	828.8	807.6	786.5	777.7
57.5°	770.5	761.8	738.8	717.7	710.5
60°	701.7	694.8	670.1	650.6	645.5
62.5°	634.8	622.5	604.8	587.2	580.1
65°	566.1	555.4	537.8	522.0	513.1
67.5°	495.6	486.6	470.9	458.5	451.4
70°	430.3	423.2	407.3	394.9	388.0
72.5°	363.4	356.2	347.4	335.1	329.8
75°	296.1	292.8	283.8	273.3	276.9
77.5°	236.3	229.1	225.6	220.4	215.2
80°	176.4	174.6	171.0	165.8	162.2
82.5°	119.9	119.9	118.2	111.1	111.1
85°	72.2	70.5	68.8	63.4	61.7
87.5°	31.8	28.3	24.7	19.4	17.6
90°	2.5	29.1	79.3	74.4	76.8
92.5°	50.1	68.0	70.4	72.8	72.8
95°	118.1	140.7	144.8	144.8	140.7
97.5°	196.5	217.5	226.5	226.5	226.5
100°	287.1	305.8	312.2	312.2	309.8
102.5°	382.6	396.3	405.2	407.6	405.2
105°	486.9	493.3	498.2	502.3	502.3
107.5°	590.4	600.1	600.1	601.7	590.4
110°	690.7	703.7	703.7	703.7	697.2

TEST NUMBER: P902588

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US830-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	799.1	812.8	810.4	804.0	799.1
115°	905.9	918.8	914.7	912.4	905.9
117.5°	1011.8	1029.6	1018.3	1011.8	1005.3
120°	1118.6	1136.3	1118.6	1118.6	1111.3
122.5°	1215.6	1238.3	1227.0	1220.5	1215.6
125°	1317.6	1337.8	1331.3	1324.0	1321.6
127.5°	1417.0	1442.1	1433.2	1423.5	1417.0
130°	1510.0	1539.2	1535.1	1530.2	1521.4
132.5°	1614.4	1637.0	1638.6	1627.3	1620.9
135°	1704.1	1729.2	1734.1	1731.6	1725.2
137.5°	1804.4	1824.7	1828.7	1827.1	1817.4
140°	1892.6	1912.8	1924.1	1924.1	1915.2
142.5°	1983.2	2003.4	2009.9	2012.3	2003.4
145°	2069.0	2085.1	2098.0	2100.5	2091.6
147.5°	2145.8	2166.0	2175.7	2179.7	2170.9
150°	2225.1	2238.8	2247.7	2254.9	2247.7
152.5°	2295.4	2309.1	2320.4	2329.4	2320.4
155°	2365.8	2372.2	2379.5	2390.9	2383.6
157.5°	2426.4	2431.3	2435.3	2451.5	2440.1
160°	2480.6	2485.5	2487.9	2501.6	2491.9
162.5°	2530.7	2530.7	2533.2	2548.5	2537.2
165°	2573.6	2571.2	2571.2	2587.4	2576.1
167.5°	2612.4	2605.2	2605.2	2621.3	2610.0
170°	2641.6	2635.1	2632.7	2648.8	2635.1
172.5°	2661.7	2655.3	2652.9	2669.1	2655.3
175°	2678.0	2671.4	2666.6	2682.9	2669.1
177.5°	2686.8	2680.4	2675.5	2689.3	2675.5
180°	2682.9	2682.9	2682.9	2682.9	2682.9

TEST NUMBER: P902588

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US830-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	8.66	9.43	9.72	10.49	11.91	8.24	9.00	9.29	10.06	11.49
	3H	10.31	11.00	11.37	12.06	13.51	9.84	10.53	10.90	11.59	13.04
	4H	10.89	11.54	11.96	12.60	14.06	10.42	11.07	11.49	12.14	13.59
	6H	11.28	11.88	12.36	12.95	14.41	10.81	11.41	11.89	12.48	13.94
	8H	11.38	11.95	12.46	13.03	14.49	10.91	11.48	11.99	12.56	14.02
	12H	11.42	11.96	12.51	13.04	14.52	10.94	11.48	12.03	12.56	14.05
4H	2H	9.11	9.76	10.19	10.83	12.28	8.77	9.42	9.85	10.49	11.94
	3H	10.96	11.50	12.05	12.60	14.06	10.57	11.11	11.66	12.21	13.67
	4H	11.66	12.16	12.76	13.25	14.73	11.26	11.76	12.35	12.84	14.33
	6H	12.17	12.59	13.27	13.70	15.18	11.76	12.19	12.86	13.30	14.78
	8H	12.31	12.71	13.41	13.81	15.31	11.90	12.30	13.00	13.40	14.90
	12H	12.37	12.74	13.49	13.85	15.35	11.96	12.32	13.08	13.43	14.93
8H	4H	11.85	12.25	12.95	13.35	14.84	11.49	11.89	12.59	12.99	14.49
	6H	12.47	12.80	13.59	13.94	15.43	12.11	12.44	13.23	13.58	15.07
	8H	12.68	12.97	13.81	14.09	15.61	12.32	12.61	13.45	13.73	15.24
	12H	12.80	13.06	13.94	14.18	15.73	12.42	12.68	13.56	13.80	15.35
12H	4H	11.83	12.19	12.95	13.30	14.81	11.48	11.84	12.60	12.95	14.46
	6H	12.50	12.78	13.62	13.91	15.42	12.15	12.44	13.28	13.56	15.07
	8H	12.73	12.98	13.86	14.10	15.65	12.37	12.63	13.51	13.75	15.30