

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: P926989

Luminaire Tested: DFN2DIP-HX4F0-070D060US830-RLLFLL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P926989
REPORT IS A COMBINATION OF REPORTS P899342 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-070D060US830-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

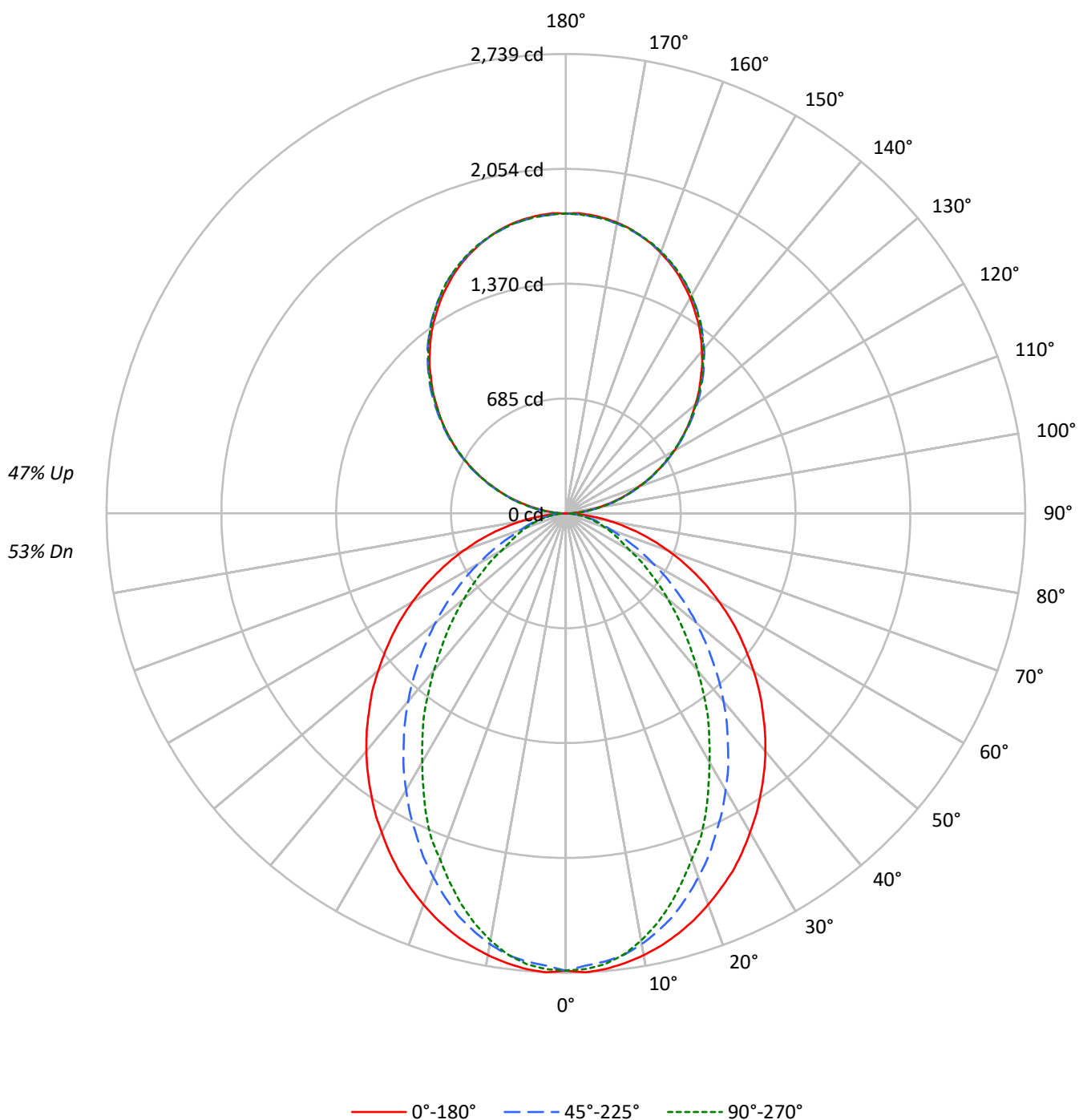
Lumens per Lamp: N/A
Luminaire Lumens: 10612.5 lumens
Efficiency: N/A
Efficacy: 96.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 110.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P926989

CATALOG NUMBER: DFN2DIP-HX4F0-070D060US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P926989

CATALOG NUMBER: DFN2DIP-HX4F0-070D060US830-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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	99	95	91	88	92	88	85	82	75	73	71	64	62	60	53	52	51
2	91	83	77	72	84	78	72	68	67	63	59	56	54	51	47	45	43
3	83	74	67	61	77	69	62	57	59	54	51	50	47	44	42	40	38
4	76	66	58	52	70	61	54	49	53	48	44	45	41	38	38	35	33
5	70	59	51	45	65	55	48	43	48	42	38	41	37	33	34	31	29
6	65	53	45	39	60	50	42	37	43	38	33	37	33	30	31	28	26
7	60	48	40	35	56	45	38	33	39	34	30	34	30	26	29	26	23
8	56	44	36	31	52	41	34	29	36	30	27	31	27	24	27	23	21
9	52	40	33	28	48	38	31	26	33	28	24	29	24	21	25	21	19
10	49	37	30	25	45	35	28	24	31	25	22	27	22	19	23	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2027	2027	2027
5°	2031	1996	2008
10°	2011	1957	1943
15°	1983	1892	1842
20°	1947	1803	1718
25°	1910	1703	1599
30°	1859	1601	1447
35°	1810	1491	1313
40°	1760	1377	1160
45°	1702	1251	1022
50°	1642	1123	887
55°	1579	987	757
60°	1507	844	623
65°	1423	700	561
70°	1322	564	508
75°	1195	498	462
80°	1011	419	401
85°	707	280	302

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1702 cd/sqm

TEST NUMBER: P926989

CATALOG NUMBER: DFN2DIP-HX4F0-070D060US830-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	255.6	2.4
10°-20°	701.5	6.6
20°-30°	984.9	9.3
30°-40°	1073.7	10.1
40°-50°	986.8	9.3
50°-60°	775.0	7.3
60°-70°	504.4	4.8
70°-80°	259.7	2.4
80°-90°	71.3	0.7
90°-100°	110.7	1.0
100°-110°	351.6	3.3
110°-120°	601.7	5.7
120°-130°	791.4	7.5
130°-140°	888.3	8.4
140°-150°	871.1	8.2
150°-160°	730.7	6.9
160°-170°	484.6	4.6
170°-180°	169.4	1.6
0°-30°	1942.0	18.3
0°-40°	3015.7	28.4
0°-60°	4777.5	45.0
0°-90°	5612.9	52.9
90°-120°	1064.0	10.0
90°-150°	3614.9	34.1
90°-180°	5000.0	47.1
0°-180°	10612.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2727	2727	2727	2727	2727	
5°	2727	2714	2682	2704	2697	259
15°	2594	2566	2482	2436	2411	731
25°	2354	2275	2112	2011	1974	1083
35°	2028	1902	1686	1530	1476	1270
45°	1658	1493	1234	1058	999	1281
55°	1261	1068	802	654	607	1127
65°	851	651	429	346	338	844
75°	454	281	197	180	178	480
85°	106	54	47	47	47	122
90°	2	19	53	50	51	10
95°	79	94	96	96	94	88
105°	325	329	332	335	335	343
115°	604	612	610	608	604	597
125°	878	892	888	883	881	785
135°	1136	1153	1156	1154	1150	878
145°	1379	1390	1399	1400	1394	862
155°	1577	1581	1586	1594	1589	726
165°	1716	1714	1714	1725	1717	484
175°	1785	1781	1778	1788	1779	170
180°	1788	1788	1788	1788	1788	

TEST NUMBER: P926989

CATALOG NUMBER: DFN2DIP-HX4F0-070D060US830-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2726.7	2726.7	2726.7	2726.7	2726.7
2.5°	2739.0	2726.7	2699.5	2724.4	2719.4
5°	2726.7	2714.4	2682.3	2704.5	2697.2
7.5°	2704.5	2689.8	2655.3	2664.9	2652.7
10°	2674.9	2657.7	2608.4	2600.8	2586.1
12.5°	2638.0	2615.7	2549.0	2534.3	2507.0
15°	2593.5	2566.2	2482.5	2435.6	2411.0
17.5°	2541.6	2502.1	2398.5	2344.2	2304.7
20°	2482.5	2433.0	2309.7	2248.1	2193.7
22.5°	2418.4	2361.5	2218.3	2134.5	2097.6
25°	2354.2	2275.1	2112.2	2011.2	1974.1
27.5°	2277.7	2193.7	2013.6	1897.6	1840.8
30°	2196.3	2102.3	1904.9	1779.3	1712.5
32.5°	2117.2	2003.7	1801.5	1653.3	1591.5
35°	2028.4	1902.5	1685.6	1530.1	1475.6
37.5°	1942.1	1806.2	1576.9	1406.4	1344.9
40°	1850.7	1702.8	1463.2	1288.1	1223.9
42.5°	1757.0	1599.1	1349.8	1167.1	1105.6
45°	1658.3	1492.8	1233.9	1058.5	999.3
47.5°	1564.6	1389.4	1122.9	947.5	893.3
50°	1460.9	1285.8	1014.2	843.8	792.3
52.5°	1359.6	1174.4	910.5	747.7	700.8
55°	1260.9	1068.4	801.9	654.0	607.2
57.5°	1159.8	962.4	705.8	567.6	528.1
60°	1056.2	858.7	604.5	478.9	439.3
62.5°	955.0	757.7	518.1	399.8	380.1
65°	851.4	651.4	429.4	345.6	338.0
67.5°	752.7	552.7	345.6	303.4	296.1
70°	649.0	456.5	286.1	261.5	251.6
72.5°	550.3	367.6	239.3	219.7	214.7
75°	454.0	281.1	197.4	180.1	177.8
77.5°	357.9	199.7	155.5	145.5	140.6
80°	268.9	143.2	118.4	108.7	108.7
82.5°	187.5	96.3	81.4	76.4	76.4
85°	106.0	54.2	46.8	46.8	46.8
87.5°	39.5	19.6	19.6	17.2	17.2
90°	1.6	19.4	52.9	49.6	51.2
92.5°	33.5	45.3	46.9	48.5	48.5
95°	78.7	93.8	96.5	96.5	93.8
97.5°	131.0	145.1	151.0	151.0	151.0
100°	191.4	203.8	208.1	208.1	206.5
102.5°	255.0	264.2	270.1	271.7	270.1
105°	324.6	328.9	332.1	334.9	334.9
107.5°	393.6	400.1	400.1	401.1	393.6
110°	460.5	469.1	469.1	469.1	464.7



TEST NUMBER: P926989

CATALOG NUMBER: DFN2DIP-HX4F0-070D060US830-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	532.7	541.8	540.2	535.9	532.7
115°	603.9	612.5	609.8	608.2	603.9
117.5°	674.5	686.4	678.8	674.5	670.2
120°	745.7	757.6	745.7	745.7	740.8
122.5°	810.4	825.4	817.9	813.7	810.4
125°	878.3	891.8	887.5	882.7	881.0
127.5°	944.7	961.4	955.4	949.0	944.7
130°	1006.7	1026.1	1023.4	1020.2	1014.2
132.5°	1076.2	1091.3	1092.4	1084.8	1080.5
135°	1136.1	1152.8	1156.0	1154.4	1150.0
137.5°	1202.9	1216.4	1219.1	1218.0	1211.6
140°	1261.7	1275.2	1282.7	1282.7	1276.8
142.5°	1322.0	1335.5	1339.9	1341.5	1335.5
145°	1379.3	1390.0	1398.7	1400.3	1394.3
147.5°	1430.4	1443.9	1450.4	1453.1	1447.1
150°	1483.3	1492.4	1498.4	1503.2	1498.4
152.5°	1530.1	1539.4	1546.9	1552.9	1546.9
155°	1577.1	1581.4	1586.2	1593.9	1589.0
157.5°	1617.5	1620.8	1623.5	1634.3	1626.8
160°	1653.7	1656.9	1658.5	1667.7	1661.3
162.5°	1687.1	1687.1	1688.7	1699.0	1691.4
165°	1715.6	1714.0	1714.0	1724.9	1717.3
167.5°	1741.6	1736.7	1736.7	1747.5	1739.9
170°	1761.0	1756.6	1755.0	1765.8	1756.6
172.5°	1774.4	1770.1	1768.5	1779.3	1770.1
175°	1785.2	1780.9	1777.6	1788.5	1779.3
177.5°	1791.1	1786.9	1783.6	1792.7	1783.6
180°	1788.5	1788.5	1788.5	1788.5	1788.5

TEST NUMBER: P926989

CATALOG NUMBER: DFN2DIP-HX4F0-070D060US830-RLFL

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	9.87	10.72	10.81	11.67	12.91	5.84	6.70	6.78	7.65	8.88
	3H	11.55	12.31	12.50	13.27	14.53	7.03	7.80	7.98	8.76	10.01
	4H	12.16	12.88	13.12	13.85	15.11	7.49	8.21	8.45	9.17	10.44
	6H	12.58	13.25	13.56	14.22	15.49	7.81	8.48	8.79	9.45	10.72
	8H	12.71	13.34	13.69	14.33	15.60	7.90	8.53	8.88	9.52	10.80
	12H	12.77	13.37	13.76	14.35	15.65	7.95	8.55	8.93	9.53	10.83
4H	2H	9.89	10.61	10.86	11.58	12.84	6.44	7.16	7.41	8.13	9.39
	3H	11.72	12.32	12.70	13.32	14.60	7.79	8.39	8.77	9.39	10.67
	4H	12.42	12.96	13.40	13.95	15.25	8.35	8.89	9.33	9.88	11.18
	6H	12.93	13.40	13.93	14.42	15.72	8.77	9.24	9.77	10.25	11.55
	8H	13.11	13.55	14.11	14.55	15.87	8.90	9.34	9.90	10.34	11.66
	12H	13.21	13.60	14.23	14.62	15.94	8.97	9.36	9.98	10.38	11.70
8H	4H	12.39	12.83	13.39	13.83	15.14	8.63	9.07	9.63	10.07	11.39
	6H	12.95	13.32	13.98	14.36	15.68	9.15	9.51	10.18	10.56	11.87
	8H	13.17	13.49	14.21	14.52	15.86	9.34	9.66	10.38	10.69	12.03
	12H	13.31	13.59	14.35	14.62	16.00	9.46	9.74	10.50	10.77	12.15
12H	4H	12.34	12.74	13.36	13.76	15.08	8.63	9.03	9.65	10.05	11.37
	6H	12.93	13.25	13.96	14.28	15.61	9.20	9.52	10.23	10.55	11.88
	8H	13.15	13.43	14.19	14.46	15.84	9.41	9.69	10.45	10.72	12.10

END OF REPORT