

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: P918994

Luminaire Tested: DFN2DIP-HX3F0-070D060US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918994
REPORT IS A COMBINATION OF REPORTS P899251 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-070D060US935-FLLFL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

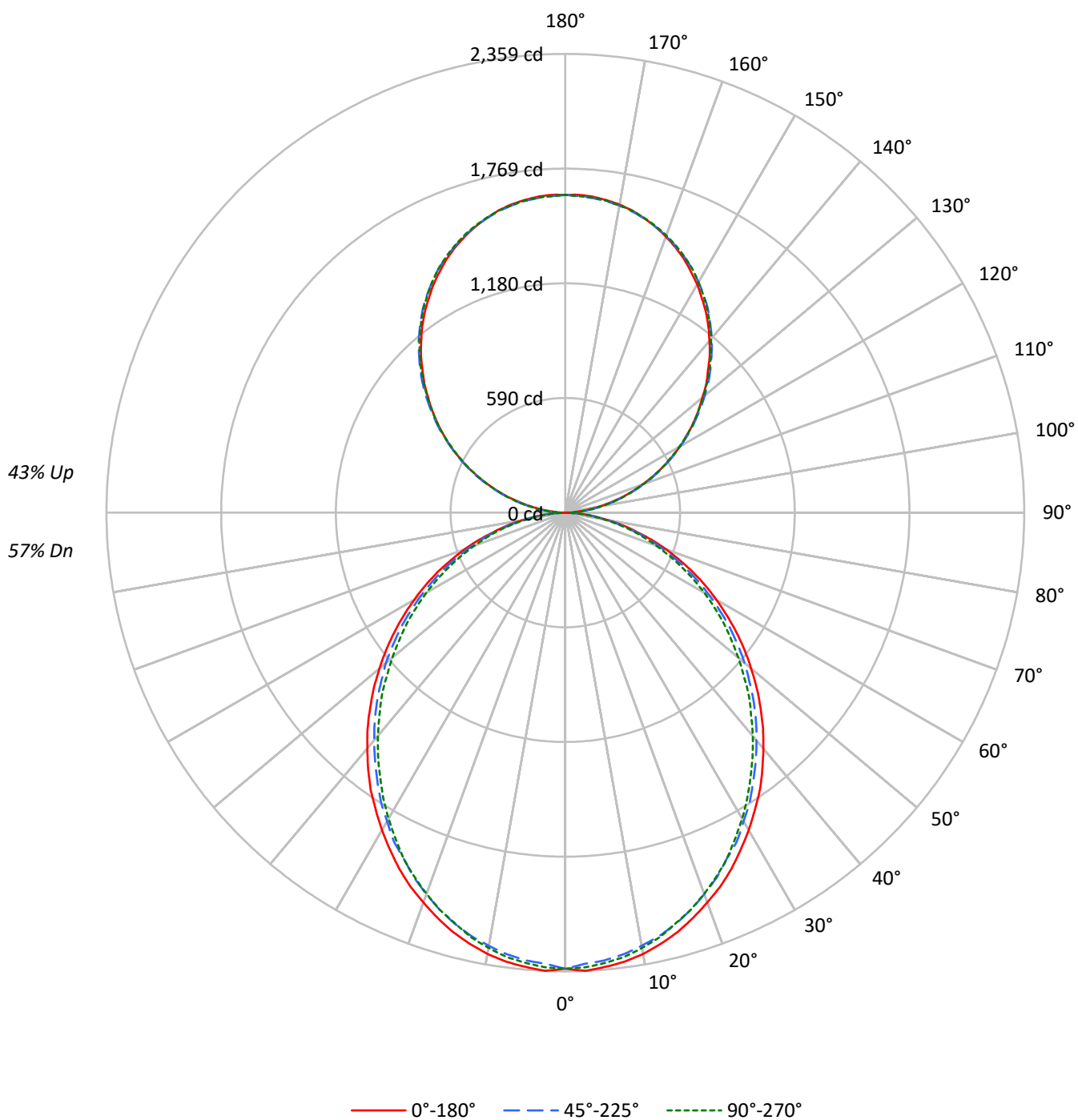
Lumens per Lamp: N/A
Luminaire Lumens: 10538.6 lumens
Efficiency: N/A
Efficacy: 92.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 114.5
Input Voltage (V):
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

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Luminous Intensity Polar Plot



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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	109	109	109	109		101	101	101	101		87	87	87		74	74	74		62	62	62
1	99	95	91	87		92	88	85	82		76	74	72		65	63	62		55	54	53
2	90	83	77	71		84	77	72	67		67	63	59		57	54	52		48	46	44
3	82	73	65	60		76	68	62	56		59	54	50		51	47	44		43	40	38
4	75	65	57	50		70	60	53	48		53	47	43		45	41	37		38	35	33
5	69	58	49	43		64	54	47	41		47	41	37		41	36	32		35	31	28
6	64	52	43	38		59	48	41	36		42	36	32		37	32	28		31	28	25
7	59	47	39	33		55	44	37	31		38	33	28		33	29	25		29	25	22
8	55	42	35	29		51	40	33	28		35	29	25		31	26	23		26	23	20
9	51	39	31	26		48	37	30	25		32	27	23		28	24	20		24	21	18
10	48	36	28	23		45	34	27	22		30	24	20		26	22	18		23	19	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2716	2716	2716
5°	2720	2677	2695
10°	2696	2639	2657
15°	2656	2593	2599
20°	2601	2531	2539
25°	2546	2457	2470
30°	2478	2388	2383
35°	2413	2307	2290
40°	2334	2225	2202
45°	2255	2142	2112
50°	2168	2056	2008
55°	2077	1956	1912
60°	1975	1837	1802
65°	1862	1714	1672
70°	1720	1564	1532
75°	1522	1384	1401
80°	1283	1154	1153
85°	910	764	748

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2255 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	220.7	2.1
10°-20°	621.0	5.9
20°-30°	912.7	8.7
30°-40°	1060.0	10.1
40°-50°	1058.7	10.0
50°-60°	923.2	8.8
60°-70°	682.4	6.5
70°-80°	386.1	3.7
80°-90°	106.6	1.0
90°-100°	101.1	1.0
100°-110°	321.2	3.0
110°-120°	549.7	5.2
120°-130°	723.0	6.9
130°-140°	811.5	7.7
140°-150°	795.8	7.6
150°-160°	667.5	6.3
160°-170°	442.7	4.2
170°-180°	154.7	1.5
0°-30°	1754.4	16.6
0°-40°	2814.4	26.7
0°-60°	4796.3	45.5
0°-90°	5971.4	56.7
90°-120°	972.0	9.2
90°-150°	3302.3	31.3
90°-180°	4567.0	43.3
0°-180°	10538.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2345	2345	2345	2345	2345	
5°	2345	2336	2311	2329	2325	223
15°	2232	2219	2190	2199	2188	629
25°	2020	2002	1964	1969	1964	930
35°	1743	1721	1684	1671	1660	1089
45°	1418	1403	1369	1344	1335	1095
55°	1074	1060	1033	1006	994	960
65°	724	710	688	668	656	716
75°	379	374	363	350	354	404
85°	92	90	88	81	79	103
90°	2	18	48	45	47	10
95°	72	86	88	88	86	80
105°	296	300	303	306	306	313
115°	552	560	557	556	552	546
125°	802	815	811	806	805	717
135°	1038	1053	1056	1055	1051	802
145°	1260	1270	1278	1279	1274	787
155°	1441	1445	1449	1456	1452	663
165°	1567	1566	1566	1576	1569	442
175°	1631	1627	1624	1634	1625	155
180°	1634	1634	1634	1634	1634	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2345.1	2345.1	2345.1	2345.1	2345.1
2.5°	2358.8	2347.5	2322.6	2345.1	2340.8
5°	2345.1	2336.3	2311.4	2329.3	2325.0
7.5°	2329.3	2315.9	2291.0	2309.3	2304.7
10°	2304.7	2288.9	2261.8	2279.8	2273.1
12.5°	2270.7	2257.4	2230.3	2241.5	2237.0
15°	2232.5	2219.0	2189.6	2198.7	2187.5
17.5°	2185.0	2171.7	2142.2	2153.5	2142.2
20°	2133.1	2119.8	2088.2	2094.9	2086.0
22.5°	2081.5	2061.1	2031.7	2031.7	2027.1
25°	2020.5	2002.5	1964.3	1968.6	1964.3
27.5°	1952.7	1937.0	1907.8	1901.1	1889.8
30°	1885.3	1867.1	1833.4	1826.7	1817.6
32.5°	1813.0	1799.7	1763.5	1749.9	1740.8
35°	1743.2	1720.7	1684.5	1670.9	1659.7
37.5°	1664.2	1643.9	1607.7	1592.0	1580.7
40°	1583.1	1564.9	1528.8	1508.7	1499.6
42.5°	1504.2	1486.0	1450.1	1427.4	1413.9
45°	1418.5	1402.7	1368.7	1344.1	1335.0
47.5°	1335.0	1319.2	1283.1	1258.2	1244.8
50°	1247.0	1235.7	1204.1	1172.6	1161.3
52.5°	1161.3	1145.6	1116.4	1091.5	1075.6
55°	1073.5	1059.9	1032.9	1005.8	994.5
57.5°	985.5	974.2	944.8	917.7	908.7
60°	897.4	888.5	857.0	832.2	825.4
62.5°	811.7	796.0	773.5	751.0	741.9
65°	724.0	710.3	687.9	667.5	656.3
67.5°	633.8	622.3	602.2	586.4	577.3
70°	550.3	541.2	520.8	505.1	496.2
72.5°	464.6	455.6	444.3	428.5	421.8
75°	378.8	374.4	362.9	349.6	354.1
77.5°	302.2	293.1	288.5	281.8	275.2
80°	225.6	223.3	218.7	212.0	207.4
82.5°	153.3	153.3	151.2	142.2	142.2
85°	92.4	90.2	88.1	81.1	79.0
87.5°	40.6	36.2	31.6	24.9	22.5
90°	1.5	17.7	48.3	45.3	46.8
92.5°	30.6	41.4	42.9	44.3	44.3
95°	71.9	85.7	88.2	88.2	85.7
97.5°	119.7	132.5	137.9	137.9	137.9
100°	174.9	186.1	190.1	190.1	188.6
102.5°	233.0	241.3	246.8	248.2	246.8
105°	296.5	300.5	303.4	305.9	305.9
107.5°	359.6	365.5	365.5	366.4	359.6
110°	420.7	428.5	428.5	428.5	424.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	486.6	495.0	493.5	489.6	486.6
115°	551.6	559.6	557.1	555.6	551.6
117.5°	616.2	627.1	620.1	616.2	612.3
120°	681.2	692.1	681.2	681.2	676.7
122.5°	740.3	754.1	747.2	743.3	740.3
125°	802.4	814.7	810.7	806.3	804.9
127.5°	863.0	878.2	872.8	866.9	863.0
130°	919.6	937.4	934.9	931.9	926.5
132.5°	983.2	996.9	997.9	991.0	987.0
135°	1037.8	1053.1	1056.0	1054.6	1050.6
137.5°	1098.9	1111.2	1113.7	1112.7	1106.8
140°	1152.6	1164.9	1171.8	1171.8	1166.4
142.5°	1207.7	1220.0	1224.0	1225.5	1220.0
145°	1260.0	1269.8	1277.7	1279.2	1273.8
147.5°	1306.7	1319.0	1325.0	1327.4	1322.0
150°	1355.0	1363.4	1368.8	1373.2	1368.8
152.5°	1397.8	1406.3	1413.2	1418.6	1413.2
155°	1440.7	1444.7	1449.1	1456.0	1451.6
157.5°	1477.6	1480.7	1483.1	1493.0	1486.1
160°	1510.7	1513.6	1515.1	1523.4	1517.6
162.5°	1541.2	1541.2	1542.6	1552.0	1545.1
165°	1567.3	1565.8	1565.8	1575.7	1568.8
167.5°	1591.0	1586.6	1586.6	1596.4	1589.5
170°	1608.7	1604.7	1603.3	1613.1	1604.7
172.5°	1621.0	1617.0	1615.6	1625.4	1617.0
175°	1630.8	1626.9	1623.9	1633.8	1625.4
177.5°	1636.2	1632.4	1629.4	1637.7	1629.4
180°	1633.8	1633.8	1633.8	1633.8	1633.8

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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	11.29	12.22	12.19	13.13	14.31	10.86	11.79	11.76	12.71	13.88
	3H	12.95	13.78	13.86	14.71	15.90	12.48	13.31	13.39	14.24	15.44
	4H	13.54	14.32	14.46	15.25	16.46	13.07	13.85	13.99	14.78	15.99
	6H	13.93	14.66	14.87	15.59	16.81	13.46	14.19	14.40	15.12	16.34
	8H	14.04	14.73	14.98	15.68	16.90	13.57	14.26	14.51	15.21	16.43
	12H	14.08	14.74	15.03	15.69	16.93	13.61	14.26	14.56	15.21	16.46
4H	2H	11.76	12.54	12.69	13.48	14.68	11.42	12.20	12.35	13.13	14.34
	3H	13.62	14.28	14.56	15.24	16.46	13.23	13.89	14.17	14.85	16.07
	4H	14.33	14.93	15.28	15.89	17.13	13.93	14.53	14.88	15.49	16.73
	6H	14.84	15.36	15.81	16.34	17.59	14.44	14.96	15.40	15.94	17.18
	8H	14.99	15.47	15.96	16.45	17.71	14.58	15.07	15.55	16.04	17.30
	12H	15.06	15.50	16.05	16.49	17.76	14.65	15.08	15.63	16.07	17.34
8H	4H	14.53	15.01	15.50	15.99	17.25	14.17	14.66	15.14	15.63	16.89
	6H	15.16	15.56	16.15	16.57	17.83	14.80	15.20	15.79	16.21	17.47
	8H	15.37	15.72	16.37	16.73	18.01	15.01	15.36	16.01	16.36	17.64
	12H	15.50	15.81	16.51	16.81	18.13	15.12	15.43	16.13	16.43	17.75
12H	4H	14.52	14.95	15.50	15.95	17.21	14.17	14.60	15.15	15.60	16.86
	6H	15.19	15.54	16.19	16.54	17.82	14.84	15.19	15.84	16.19	17.47
	8H	15.42	15.73	16.43	16.73	18.06	15.07	15.38	16.07	16.38	17.70