

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: P916248

Luminaire Tested: DFN2DIP-HX3F0-060D070US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916248
REPORT IS A COMBINATION OF REPORTS P899264 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-060D070US930-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

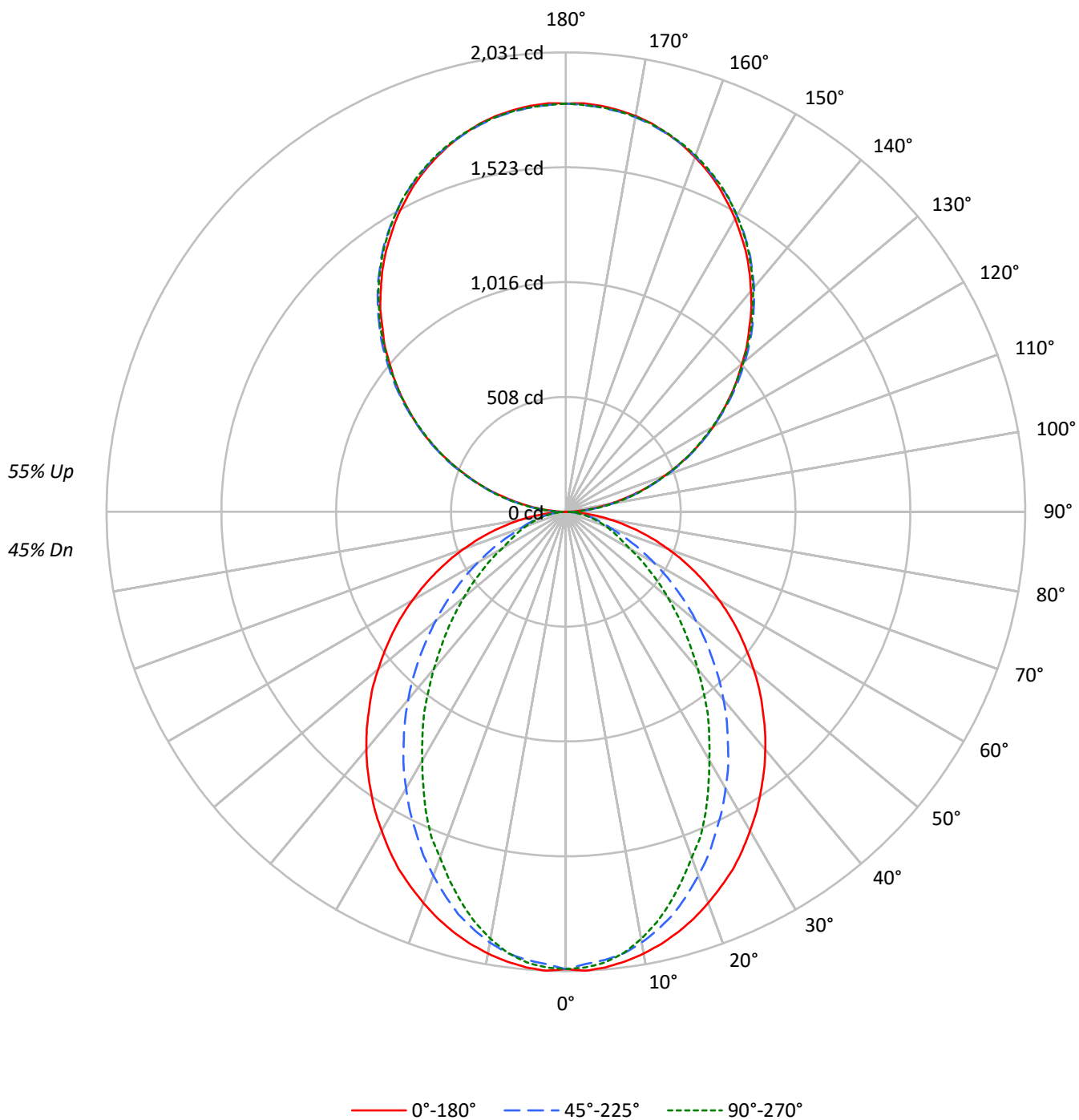
Lumens per Lamp: N/A
Luminaire Lumens: 9208.8 lumens
Efficiency: N/A
Efficacy: 83.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 110.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52
1	97	93	89	86	89	85	82	79	71	69	67	58	57	55	46	45	44
2	89	82	76	71	81	75	70	66	63	59	56	52	49	47	41	40	38
3	81	72	65	60	74	67	60	56	56	51	48	46	43	40	37	35	33
4	75	64	57	51	68	59	53	47	50	45	41	41	38	35	33	31	29
5	69	57	50	44	63	53	46	41	45	40	36	37	33	30	30	28	25
6	63	52	44	38	58	48	41	36	41	35	31	34	30	27	28	25	23
7	59	47	39	34	54	43	36	32	37	32	28	31	27	24	25	22	20
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18
9	51	39	32	27	47	36	30	25	31	26	22	26	22	19	22	19	17
10	47	36	29	24	44	33	27	23	29	24	20	24	20	18	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2342	2342	2342
5°	2345	2303	2318
10°	2320	2256	2241
15°	2287	2180	2124
20°	2244	2076	1980
25°	2200	1959	1840
30°	2140	1840	1664
35°	2082	1712	1510
40°	2023	1579	1333
45°	1955	1432	1172
50°	1883	1284	1016
55°	1809	1126	865
60°	1723	961	711
65°	1624	794	639
70°	1504	637	576
75°	1352	558	521
80°	1133	463	448
85°	774	301	329

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1955 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.5	2.1
10°-20°	520.2	5.6
20°-30°	730.3	7.9
30°-40°	796.1	8.6
40°-50°	731.7	7.9
50°-60°	574.6	6.2
60°-70°	374.0	4.1
70°-80°	192.5	2.1
80°-90°	54.3	0.6
90°-100°	111.7	1.2
100°-110°	354.9	3.9
110°-120°	607.3	6.6
120°-130°	798.7	8.7
130°-140°	896.5	9.7
140°-150°	879.1	9.5
150°-160°	737.5	8.0
160°-170°	489.1	5.3
170°-180°	170.9	1.9
0°-30°	1439.9	15.6
0°-40°	2236.0	24.3
0°-60°	3542.3	38.5
0°-90°	4163.1	45.2
90°-120°	1073.9	11.7
90°-150°	3648.2	39.6
90°-180°	5046.0	54.8
0°-180°	9208.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2022	2022	2022	2022	2022	
5°	2022	2013	1989	2005	2000	192
15°	1923	1903	1841	1806	1788	542
25°	1746	1687	1566	1491	1464	803
35°	1504	1411	1250	1134	1094	941
45°	1230	1107	915	785	741	950
55°	935	792	595	485	450	835
65°	631	483	318	256	251	626
75°	337	208	146	134	132	356
85°	79	40	35	35	35	90
90°	2	20	53	50	52	9
95°	79	95	97	97	95	88
105°	328	332	335	338	338	346
115°	609	618	616	614	609	603
125°	886	900	896	891	889	792
135°	1147	1163	1167	1165	1161	886
145°	1392	1403	1412	1413	1407	870
155°	1592	1596	1601	1608	1604	733
165°	1731	1730	1730	1741	1733	488
175°	1802	1797	1794	1805	1796	171
180°	1805	1805	1805	1805	1805	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2021.8	2021.8	2021.8	2021.8	2021.8
2.5°	2030.9	2021.8	2001.6	2020.0	2016.3
5°	2021.8	2012.6	1988.8	2005.3	1999.8
7.5°	2005.3	1994.4	1968.8	1976.0	1966.8
10°	1983.3	1970.5	1934.1	1928.4	1917.5
12.5°	1956.0	1939.4	1889.9	1879.1	1858.9
15°	1923.0	1902.7	1840.6	1805.9	1787.6
17.5°	1884.6	1855.2	1778.3	1738.1	1708.9
20°	1840.6	1803.9	1712.5	1666.9	1626.5
22.5°	1793.1	1750.9	1644.8	1582.7	1555.3
25°	1745.6	1686.9	1566.2	1491.3	1463.7
27.5°	1688.9	1626.5	1493.0	1407.0	1364.9
30°	1628.5	1558.8	1412.4	1319.2	1269.7
32.5°	1569.9	1485.6	1335.8	1225.9	1180.1
35°	1504.1	1410.7	1249.8	1134.4	1094.0
37.5°	1440.0	1339.2	1169.2	1042.8	997.2
40°	1372.2	1262.6	1084.9	955.0	907.5
42.5°	1302.8	1185.7	1000.9	865.4	819.8
45°	1229.6	1106.8	914.9	784.8	740.9
47.5°	1160.1	1030.2	832.6	702.5	662.3
50°	1083.2	953.3	752.0	625.7	587.4
52.5°	1008.0	870.8	675.1	554.4	519.7
55°	934.9	792.2	594.6	484.9	450.1
57.5°	860.0	713.5	523.3	420.9	391.5
60°	783.1	636.7	448.3	355.1	325.7
62.5°	708.2	561.8	384.2	296.4	281.8
65°	631.3	483.0	318.4	256.2	250.6
67.5°	558.1	409.8	256.2	225.0	219.6
70°	481.2	338.5	212.1	194.0	186.5
72.5°	408.1	272.6	177.4	162.9	159.1
75°	336.6	208.5	146.3	133.5	131.8
77.5°	265.4	148.1	115.3	107.9	104.3
80°	199.3	106.2	87.7	80.6	80.6
82.5°	139.0	71.4	60.3	56.7	56.7
85°	78.6	40.2	34.7	34.7	34.7
87.5°	29.4	14.6	14.6	12.8	12.8
90°	1.6	19.6	53.3	50.1	51.7
92.5°	33.8	45.7	47.4	49.0	49.0
95°	79.4	94.7	97.4	97.4	94.7
97.5°	132.2	146.3	152.4	152.4	152.4
100°	193.1	205.7	210.0	210.0	208.4
102.5°	257.4	266.6	272.6	274.3	272.6
105°	327.6	331.9	335.2	337.9	337.9
107.5°	397.2	403.7	403.7	404.9	397.2
110°	464.7	473.4	473.4	473.4	469.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	537.6	546.9	545.3	540.9	537.6
115°	609.4	618.2	615.5	613.8	609.4
117.5°	680.7	692.7	685.1	680.7	676.4
120°	752.5	764.5	752.5	752.5	747.6
122.5°	817.8	833.1	825.5	821.1	817.8
125°	886.4	900.0	895.7	890.8	889.2
127.5°	953.3	970.2	964.3	957.7	953.3
130°	1015.9	1035.5	1032.8	1029.6	1023.5
132.5°	1086.1	1101.4	1102.4	1094.9	1090.5
135°	1146.6	1163.3	1166.7	1165.0	1160.7
137.5°	1214.0	1227.6	1230.3	1229.2	1222.7
140°	1273.3	1286.9	1294.5	1294.5	1288.6
142.5°	1334.2	1347.9	1352.2	1353.8	1347.9
145°	1392.0	1402.8	1411.5	1413.2	1407.2
147.5°	1443.6	1457.3	1463.8	1466.5	1460.5
150°	1497.0	1506.2	1512.2	1517.1	1512.2
152.5°	1544.3	1553.6	1561.1	1567.2	1561.1
155°	1591.6	1595.9	1600.9	1608.5	1603.6
157.5°	1632.5	1635.7	1638.4	1649.3	1641.7
160°	1668.9	1672.2	1673.8	1683.0	1676.5
162.5°	1702.7	1702.7	1704.3	1714.6	1707.0
165°	1731.4	1729.8	1729.8	1740.7	1733.1
167.5°	1757.6	1752.7	1752.7	1763.6	1756.0
170°	1777.2	1772.9	1771.2	1782.1	1772.9
172.5°	1790.8	1786.4	1784.8	1795.7	1786.4
175°	1801.6	1797.3	1794.1	1804.9	1795.7
177.5°	1807.7	1803.3	1800.0	1809.3	1800.0
180°	1804.9	1804.9	1804.9	1804.9	1804.9

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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	9.59	10.39	10.60	11.40	12.74	5.57	6.36	6.57	7.37	8.71
	3H	11.26	11.97	12.27	12.99	14.35	6.75	7.46	7.77	8.48	9.84
	4H	11.86	12.53	12.89	13.55	14.92	7.20	7.87	8.22	8.89	10.26
	6H	12.28	12.89	13.31	13.92	15.30	7.51	8.13	8.55	9.16	10.54
	8H	12.40	12.98	13.44	14.03	15.40	7.60	8.19	8.64	9.23	10.61
	12H	12.45	13.01	13.50	14.05	15.45	7.64	8.20	8.69	9.23	10.63
4H	2H	9.61	10.28	10.64	11.30	12.67	6.16	6.83	7.19	7.85	9.22
	3H	11.42	11.98	12.46	13.03	14.41	7.50	8.06	8.54	9.11	10.49
	4H	12.11	12.62	13.16	13.66	15.06	8.04	8.55	9.09	9.59	11.00
	6H	12.61	13.05	13.67	14.12	15.52	8.45	8.89	9.51	9.96	11.36
	8H	12.78	13.19	13.84	14.25	15.66	8.58	8.99	9.64	10.04	11.46
	12H	12.87	13.24	13.95	14.31	15.73	8.64	9.01	9.71	10.08	11.50
8H	4H	12.07	12.48	13.13	13.54	14.95	8.31	8.72	9.37	9.78	11.19
	6H	12.63	12.96	13.71	14.06	15.48	8.82	9.16	9.90	10.26	11.67
	8H	12.84	13.13	13.93	14.22	15.65	9.01	9.31	10.10	10.39	11.82
	12H	12.97	13.23	14.06	14.31	15.78	9.12	9.39	10.22	10.46	11.94
12H	4H	12.02	12.39	13.10	13.46	14.88	8.31	8.68	9.39	9.76	11.18
	6H	12.60	12.90	13.69	13.98	15.41	8.87	9.17	9.96	10.25	11.68
	8H	12.82	13.08	13.91	14.15	15.63	9.08	9.34	10.17	10.41	11.89