

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: P928254

Luminaire Tested: DFN2DIP-HX4F0-060D070US927-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928254
REPORT IS A COMBINATION OF REPORTS P900878 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-060D070US927-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

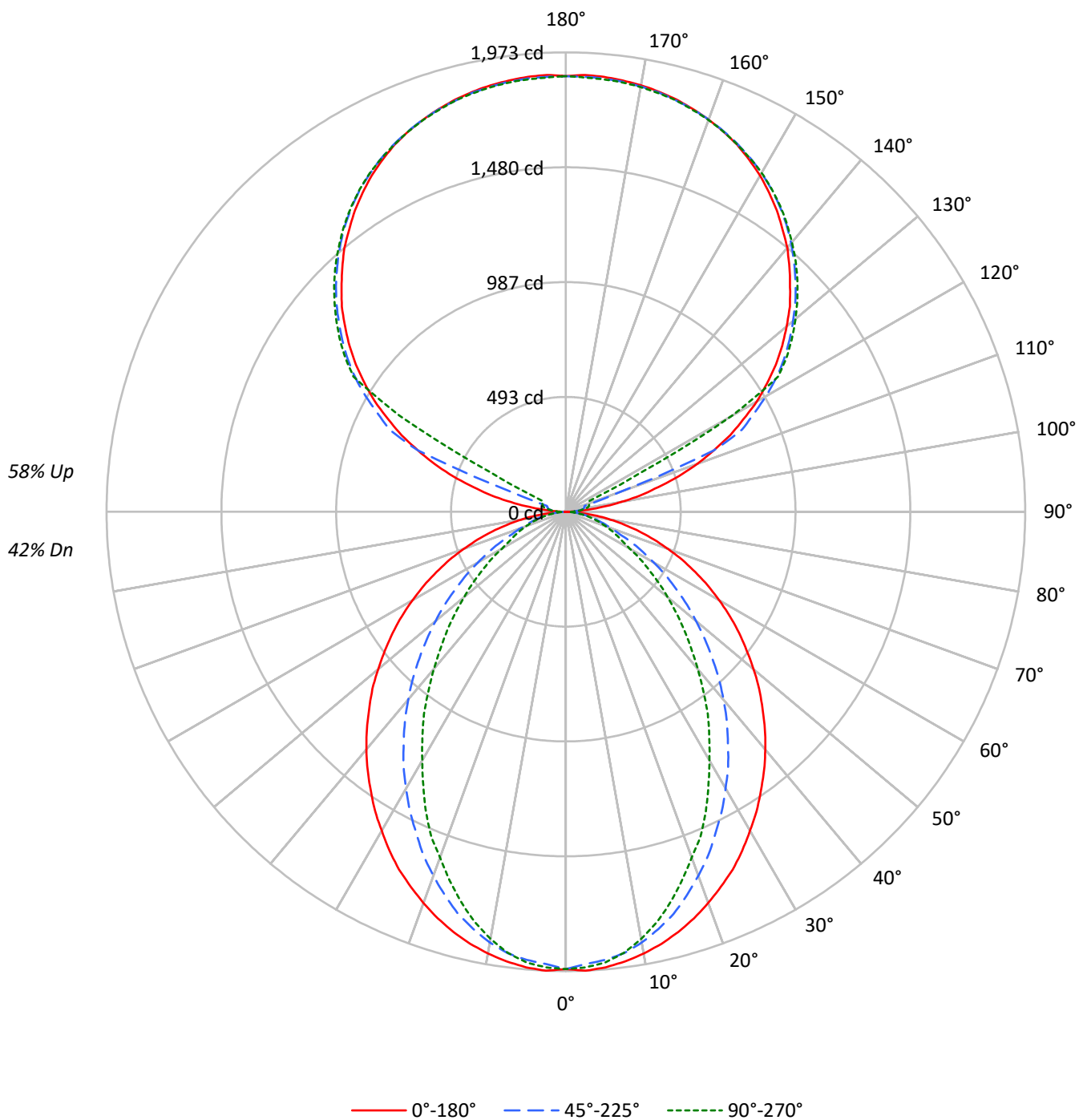
Lumens per Lamp: N/A
Luminaire Lumens: 9527.7 lumens
Efficiency: N/A
Efficacy: 89.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 106.2
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

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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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	49	49	49
1	96	92	89	85	88	85	81	79	70	68	66	56	55	54	44	43	42
2	88	81	75	70	80	74	69	65	62	58	55	50	48	45	39	38	36
3	81	72	65	59	74	66	60	55	55	50	47	45	42	39	35	33	31
4	74	64	56	50	67	59	52	47	49	44	40	40	36	34	32	29	27
5	68	57	49	43	62	52	46	40	44	39	35	36	32	29	29	26	24
6	63	51	43	38	57	47	40	35	40	34	31	33	29	26	26	23	21
7	58	46	39	33	53	43	36	31	36	31	27	30	26	23	24	21	19
8	54	42	35	29	49	39	32	28	33	28	24	27	24	21	22	19	17
9	50	38	31	26	46	36	29	25	30	25	22	25	21	19	21	18	16
10	47	35	28	24	43	33	26	22	28	23	20	23	20	17	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1460	1460	1460
5°	1463	1437	1446
10°	1448	1409	1399
15°	1429	1363	1327
20°	1402	1299	1238
25°	1376	1227	1151
30°	1339	1153	1042
35°	1304	1074	946
40°	1268	992	836
45°	1226	901	736
50°	1183	809	639
55°	1138	711	545
60°	1085	608	449
65°	1025	504	404
70°	952	406	366
75°	861	359	333
80°	728	301	289
85°	509	202	217

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1226 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.1	1.9
10°-20°	505.3	5.3
20°-30°	709.4	7.4
30°-40°	773.3	8.1
40°-50°	710.8	7.5
50°-60°	558.2	5.9
60°-70°	363.3	3.8
70°-80°	187.0	2.0
80°-90°	51.0	0.5
90°-100°	61.7	0.6
100°-110°	230.0	2.4
110°-120°	610.0	6.4
120°-130°	1011.7	10.6
130°-140°	1074.6	11.3
140°-150°	998.8	10.5
150°-160°	803.0	8.4
160°-170°	517.4	5.4
170°-180°	178.1	1.9
0°-30°	1398.8	14.7
0°-40°	2172.1	22.8
0°-60°	3441.1	36.1
0°-90°	4042.5	42.4
90°-120°	901.6	9.5
90°-150°	3986.8	41.8
90°-180°	5485.0	57.6
0°-180°	9527.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1964	1964	1964	1964	1964	
5°	1964	1955	1932	1948	1943	186
15°	1868	1848	1788	1754	1736	526
25°	1696	1639	1521	1449	1422	780
35°	1461	1370	1214	1102	1063	914
45°	1194	1075	889	762	720	922
55°	908	770	578	471	437	812
65°	613	469	309	249	244	608
75°	327	202	142	130	128	346
85°	76	39	34	34	34	88
90°	1	16	27	34	36	9
95°	88	43	53	60	58	104
105°	412	452	83	97	103	440
115°	778	801	835	208	111	766
125°	1101	1118	1144	1154	1158	982
135°	1362	1384	1396	1409	1407	1052
145°	1580	1579	1602	1611	1604	988
155°	1740	1728	1744	1752	1741	802
165°	1833	1825	1829	1838	1829	518
175°	1875	1866	1868	1878	1864	178
180°	1871	1871	1871	1871	1871	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1964.0	1964.0	1964.0	1964.0	1964.0
2.5°	1972.9	1964.0	1944.4	1962.3	1958.7
5°	1964.0	1955.1	1931.9	1948.0	1942.7
7.5°	1948.0	1937.4	1912.5	1919.5	1910.6
10°	1926.6	1914.2	1878.8	1873.3	1862.7
12.5°	1900.1	1884.0	1835.9	1825.4	1805.8
15°	1868.0	1848.4	1788.0	1754.3	1736.5
17.5°	1830.7	1802.2	1727.5	1688.5	1660.0
20°	1788.0	1752.4	1663.6	1619.2	1580.0
22.5°	1741.8	1700.9	1597.8	1537.4	1510.8
25°	1695.7	1638.7	1521.4	1448.6	1421.9
27.5°	1640.6	1580.0	1450.3	1366.8	1325.9
30°	1581.9	1514.2	1372.1	1281.5	1233.5
32.5°	1525.0	1443.2	1297.6	1190.9	1146.3
35°	1461.1	1370.4	1214.1	1102.0	1062.8
37.5°	1398.8	1300.9	1135.8	1013.0	968.7
40°	1333.0	1226.5	1053.9	927.7	881.6
42.5°	1265.5	1151.8	972.3	840.6	796.4
45°	1194.4	1075.2	888.8	762.4	719.8
47.5°	1126.9	1000.8	808.8	682.5	643.4
50°	1052.3	926.1	730.5	607.8	570.6
52.5°	979.2	845.9	655.9	538.6	504.8
55°	908.2	769.6	577.6	471.1	437.3
57.5°	835.4	693.2	508.4	408.8	380.3
60°	760.7	618.6	435.4	344.9	316.4
62.5°	687.9	545.8	373.2	288.0	273.8
65°	613.2	469.2	309.3	248.9	243.5
67.5°	542.1	398.1	248.9	218.6	213.3
70°	467.4	328.8	206.1	188.4	181.2
72.5°	396.4	264.8	172.3	158.2	154.6
75°	327.0	202.5	142.2	129.7	128.1
77.5°	257.8	143.9	112.0	104.9	101.3
80°	193.6	103.1	85.2	78.2	78.2
82.5°	135.0	69.4	58.6	55.0	55.0
85°	76.3	39.0	33.7	33.7	33.7
87.5°	28.5	14.2	14.2	12.4	12.4
90°	1.3	16.2	27.0	33.9	36.5
92.5°	33.9	28.4	32.5	35.2	36.5
95°	87.9	43.2	52.7	59.6	58.2
97.5°	158.3	47.4	69.0	73.2	74.4
100°	239.7	54.2	77.1	87.9	90.7
102.5°	328.9	326.4	79.9	94.7	98.8
105°	411.6	452.2	82.6	97.4	102.9
107.5°	507.7	541.5	85.4	100.2	105.7
110°	599.9	628.1	237.0	101.6	106.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	686.5	710.7	687.8	104.1	108.3
115°	778.5	801.4	835.3	208.5	111.1
117.5°	858.4	885.4	908.5	714.8	360.1
120°	947.7	968.0	992.5	1008.7	825.9
122.5°	1023.4	1045.1	1072.4	1080.4	1081.8
125°	1100.6	1118.3	1144.0	1153.5	1157.5
127.5°	1171.1	1190.0	1210.4	1224.0	1225.2
130°	1237.4	1259.1	1273.9	1288.9	1287.6
132.5°	1305.1	1322.8	1337.6	1349.8	1348.5
135°	1362.0	1383.7	1395.8	1409.4	1406.8
137.5°	1421.5	1437.8	1451.4	1465.0	1460.9
140°	1479.7	1490.6	1505.4	1517.6	1510.9
142.5°	1528.6	1538.1	1555.6	1566.3	1559.6
145°	1580.0	1578.6	1601.6	1611.1	1604.4
147.5°	1624.6	1620.6	1643.6	1650.3	1645.0
150°	1668.0	1658.5	1680.2	1688.2	1681.5
152.5°	1704.5	1693.7	1714.0	1722.1	1712.7
155°	1739.7	1727.6	1743.8	1751.9	1741.1
157.5°	1768.1	1757.4	1769.6	1779.1	1768.1
160°	1792.6	1784.4	1792.6	1800.6	1791.1
162.5°	1814.2	1806.1	1812.8	1822.3	1810.1
165°	1833.1	1825.1	1829.0	1838.5	1829.0
167.5°	1848.1	1839.8	1844.0	1853.5	1841.3
170°	1860.2	1852.1	1854.8	1864.3	1852.1
172.5°	1868.3	1860.2	1863.0	1872.4	1860.2
175°	1875.1	1865.6	1868.3	1877.8	1864.3
177.5°	1877.8	1868.3	1869.8	1879.3	1867.0
180°	1871.0	1871.0	1871.0	1871.0	1871.0

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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	7.71	8.49	8.74	9.51	10.89	3.69	4.46	4.71	5.49	6.87
	3H	9.39	10.08	10.42	11.12	12.51	4.87	5.56	5.91	6.60	8.00
	4H	9.99	10.65	11.04	11.69	13.09	5.32	5.97	6.37	7.02	8.42
	6H	10.41	11.01	11.47	12.06	13.48	5.64	6.24	6.70	7.29	8.70
	8H	10.54	11.11	11.60	12.17	13.58	5.73	6.30	6.79	7.36	8.78
	12H	10.60	11.14	11.67	12.20	13.63	5.77	6.32	6.84	7.37	8.81
4H	2H	7.72	8.38	8.78	9.42	10.82	4.28	4.93	5.33	5.97	7.37
	3H	9.55	10.09	10.61	11.16	12.58	5.62	6.17	6.68	7.23	8.65
	4H	10.24	10.74	11.31	11.80	13.24	6.17	6.67	7.24	7.73	9.17
	6H	10.75	11.18	11.83	12.26	13.70	6.59	7.01	7.66	8.10	9.53
	8H	10.93	11.33	12.01	12.40	13.85	6.72	7.11	7.79	8.19	9.64
	12H	11.02	11.38	12.12	12.47	13.92	6.78	7.14	7.87	8.23	9.68
8H	4H	10.20	10.60	11.28	11.68	13.13	6.45	6.84	7.52	7.92	9.37
	6H	10.77	11.10	11.87	12.22	13.66	6.96	7.29	8.06	8.41	9.86
	8H	10.99	11.27	12.09	12.37	13.84	7.16	7.44	8.26	8.54	10.01
	12H	11.12	11.38	12.23	12.47	13.98	7.27	7.53	8.38	8.62	10.13
12H	4H	10.15	10.51	11.25	11.60	13.06	6.45	6.81	7.54	7.90	9.35
	6H	10.74	11.03	11.85	12.13	13.60	7.01	7.30	8.12	8.40	9.87
	8H	10.96	11.22	12.07	12.31	13.82	7.22	7.48	8.33	8.57	10.08

END OF REPORT