

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: P927566

Luminaire Tested: DFN2DIP-HX4F0-050D060US840-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927566
REPORT IS A COMBINATION OF REPORTS P900858 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D060US840-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

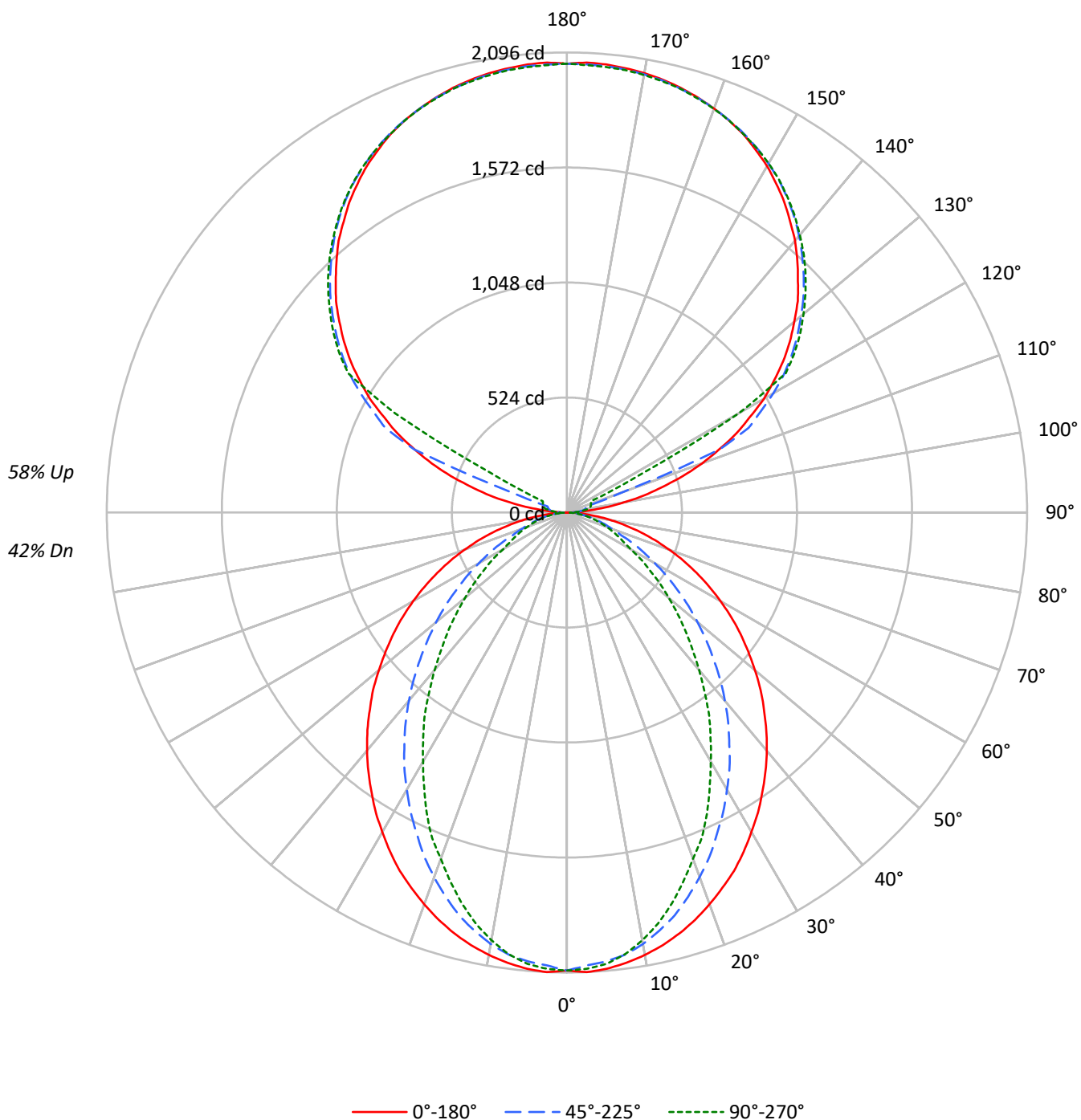
Lumens per Lamp: N/A
Luminaire Lumens: 10289.9 lumens
Efficiency: N/A
Efficacy: 117.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 87.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
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	63	63	63	49	49	49
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	43	43	42
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36
3	81	72	65	59	73	66	60	55	55	50	46	44	41	39	35	33	31
4	74	64	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24
6	63	51	43	38	57	47	40	35	39	34	30	32	29	26	26	23	21
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19
8	54	42	34	29	49	39	32	27	33	28	24	27	23	20	22	19	17
9	50	38	31	26	46	35	29	25	30	25	22	25	21	18	20	17	15
10	47	35	28	23	43	33	26	22	28	23	19	23	19	17	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1552	1552	1552
5°	1554	1527	1537
10°	1539	1497	1487
15°	1518	1448	1410
20°	1490	1380	1315
25°	1461	1304	1223
30°	1423	1225	1107
35°	1385	1141	1005
40°	1347	1054	888
45°	1303	957	782
50°	1257	860	679
55°	1209	755	579
60°	1153	646	477
65°	1089	535	429
70°	1012	432	389
75°	915	381	353
80°	774	320	307
85°	541	214	231

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1303 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.6	1.9
10°-20°	536.9	5.2
20°-30°	753.8	7.3
30°-40°	821.7	8.0
40°-50°	755.2	7.3
50°-60°	593.1	5.8
60°-70°	386.0	3.8
70°-80°	198.7	1.9
80°-90°	54.3	0.5
90°-100°	67.4	0.7
100°-110°	251.3	2.4
110°-120°	666.6	6.5
120°-130°	1105.6	10.7
130°-140°	1174.4	11.4
140°-150°	1091.5	10.6
150°-160°	877.5	8.5
160°-170°	565.5	5.5
170°-180°	194.6	1.9
0°-30°	1486.2	14.4
0°-40°	2307.9	22.4
0°-60°	3656.2	35.5
0°-90°	4295.3	41.7
90°-120°	985.4	9.6
90°-150°	4357.0	42.3
90°-180°	5995.0	58.3
0°-180°	10289.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2087	2087	2087	2087	2087	
5°	2087	2077	2053	2070	2064	198
15°	1985	1964	1900	1864	1845	559
25°	1802	1741	1616	1539	1511	829
35°	1552	1456	1290	1171	1129	972
45°	1269	1142	944	810	765	980
55°	965	818	614	500	465	862
65°	652	498	329	264	259	646
75°	348	215	151	138	136	368
85°	81	42	36	36	36	93
90°	1	18	30	37	40	10
95°	96	47	58	65	64	114
105°	450	494	90	106	112	481
115°	851	876	913	228	121	838
125°	1203	1222	1250	1261	1265	1073
135°	1488	1512	1525	1540	1537	1150
145°	1727	1725	1750	1761	1753	1080
155°	1901	1888	1906	1915	1903	876
165°	2003	1995	1999	2009	1999	566
175°	2049	2039	2042	2052	2037	195
180°	2045	2045	2045	2045	2045	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2086.8	2086.8	2086.8	2086.8	2086.8
2.5°	2096.1	2086.8	2065.9	2084.9	2081.1
5°	2086.8	2077.4	2052.7	2069.7	2064.1
7.5°	2069.7	2058.5	2032.0	2039.5	2030.0
10°	2047.1	2033.8	1996.2	1990.4	1979.1
12.5°	2018.8	2001.8	1950.7	1939.5	1918.6
15°	1984.8	1964.0	1899.8	1864.0	1845.1
17.5°	1945.1	1914.9	1835.5	1794.0	1763.7
20°	1899.8	1862.0	1767.6	1720.5	1678.8
22.5°	1850.8	1807.2	1697.7	1633.6	1605.3
25°	1801.6	1741.1	1616.5	1539.1	1510.7
27.5°	1743.1	1678.8	1541.0	1452.2	1408.8
30°	1680.8	1608.9	1457.8	1361.6	1310.5
32.5°	1620.3	1533.4	1378.7	1265.3	1218.0
35°	1552.4	1456.0	1289.9	1170.9	1129.3
37.5°	1486.2	1382.3	1206.8	1076.3	1029.3
40°	1416.3	1303.1	1119.8	985.8	936.7
42.5°	1344.6	1223.8	1033.0	893.2	846.1
45°	1269.1	1142.5	944.3	810.1	764.7
47.5°	1197.3	1063.3	859.3	725.1	683.6
50°	1118.1	983.9	776.2	645.8	606.3
52.5°	1040.5	898.8	696.9	572.3	536.4
55°	965.0	817.6	613.7	500.5	464.6
57.5°	887.6	736.5	540.1	434.4	404.1
60°	808.2	657.2	462.6	366.5	336.2
62.5°	730.9	579.8	396.5	306.0	290.9
65°	651.5	498.5	328.6	264.5	258.7
67.5°	576.0	423.0	264.5	232.3	226.6
70°	496.7	349.4	219.0	200.1	192.6
72.5°	421.2	281.3	183.2	168.1	164.3
75°	347.5	215.2	151.1	137.8	136.0
77.5°	273.9	152.9	119.1	111.4	107.5
80°	205.8	109.6	90.6	83.1	83.1
82.5°	143.5	73.7	62.3	58.5	58.5
85°	81.2	41.5	35.8	35.8	35.8
87.5°	30.3	15.0	15.0	13.2	13.2
90°	1.4	17.8	29.5	37.1	39.9
92.5°	37.1	31.1	35.4	38.5	39.9
95°	96.1	47.3	57.7	65.2	63.6
97.5°	173.1	51.8	75.3	80.0	81.4
100°	261.9	59.2	84.3	96.1	99.1
102.5°	359.5	356.7	87.3	103.5	108.0
105°	449.8	494.2	90.3	106.4	112.5
107.5°	554.9	591.7	93.3	109.5	115.4
110°	655.6	686.5	259.0	111.1	116.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	750.2	776.7	751.6	113.8	118.4
115°	850.8	875.9	913.0	227.9	121.4
117.5°	938.0	967.6	992.8	781.2	393.5
120°	1035.8	1057.9	1084.6	1102.3	902.6
122.5°	1118.5	1142.2	1171.9	1180.7	1182.3
125°	1202.9	1222.2	1250.2	1260.6	1265.0
127.5°	1279.8	1300.5	1322.8	1337.6	1339.0
130°	1352.3	1376.1	1392.2	1408.6	1407.2
132.5°	1426.3	1445.6	1461.8	1475.1	1473.7
135°	1488.5	1512.3	1525.4	1540.3	1537.3
137.5°	1553.5	1571.2	1586.2	1600.9	1596.6
140°	1617.1	1629.1	1645.3	1658.6	1651.2
142.5°	1670.5	1680.9	1700.1	1711.8	1704.4
145°	1726.8	1725.1	1750.3	1760.7	1753.3
147.5°	1775.4	1771.0	1796.1	1803.5	1797.7
150°	1822.9	1812.5	1836.2	1845.0	1837.6
152.5°	1862.8	1851.0	1873.1	1882.1	1871.7
155°	1901.3	1888.0	1905.8	1914.6	1902.8
157.5°	1932.4	1920.5	1933.9	1944.3	1932.4
160°	1959.0	1950.0	1959.0	1967.8	1957.5
162.5°	1982.5	1973.8	1981.1	1991.5	1978.2
165°	2003.3	1994.6	1998.9	2009.3	1998.9
167.5°	2019.6	2010.7	2015.3	2025.7	2012.2
170°	2033.0	2024.0	2027.1	2037.4	2024.0
172.5°	2041.8	2033.0	2036.0	2046.4	2033.0
175°	2049.2	2038.8	2041.8	2052.1	2037.4
177.5°	2052.1	2041.8	2043.3	2053.7	2040.4
180°	2044.7	2044.7	2044.7	2044.7	2044.7



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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	7.85	8.62	8.88	9.65	11.04	3.82	4.59	4.86	5.63	7.01
	3H	9.53	10.21	10.57	11.25	12.66	5.01	5.70	6.05	6.74	8.15
	4H	10.13	10.78	11.18	11.83	13.24	5.46	6.11	6.51	7.15	8.57
	6H	10.55	11.15	11.61	12.20	13.62	5.78	6.38	6.84	7.42	8.85
	8H	10.68	11.24	11.74	12.31	13.73	5.87	6.44	6.94	7.50	8.92
	12H	10.74	11.28	11.81	12.33	13.78	5.91	6.45	6.98	7.51	8.95
4H	2H	7.86	8.51	8.92	9.56	10.97	4.41	5.06	5.47	6.11	7.52
	3H	9.69	10.23	10.75	11.30	12.73	5.76	6.30	6.83	7.37	8.80
	4H	10.38	10.87	11.45	11.94	13.38	6.31	6.80	7.38	7.86	9.31
	6H	10.89	11.31	11.97	12.40	13.84	6.72	7.15	7.81	8.23	9.68
	8H	11.07	11.46	12.15	12.54	14.00	6.85	7.25	7.93	8.33	9.79
	12H	11.16	11.52	12.26	12.61	14.07	6.92	7.27	8.01	8.37	9.83
8H	4H	10.34	10.74	11.42	11.82	13.27	6.58	6.98	7.66	8.06	9.52
	6H	10.91	11.23	12.01	12.35	13.81	7.10	7.43	8.20	8.55	10.00
	8H	11.12	11.41	12.23	12.51	13.99	7.29	7.58	8.40	8.68	10.16
	12H	11.26	11.51	12.37	12.61	14.13	7.41	7.66	8.52	8.76	10.28
12H	4H	10.29	10.65	11.39	11.74	13.20	6.58	6.94	7.68	8.04	9.50
	6H	10.88	11.17	11.99	12.27	13.75	7.15	7.44	8.26	8.54	10.02
	8H	11.10	11.35	12.21	12.45	13.97	7.36	7.61	8.47	8.71	10.22