

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: P908036

Luminaire Tested: DFN2DIP-HX3F0-050D060US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908036
REPORT IS A COMBINATION OF REPORTS P899248 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-050D060US840-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

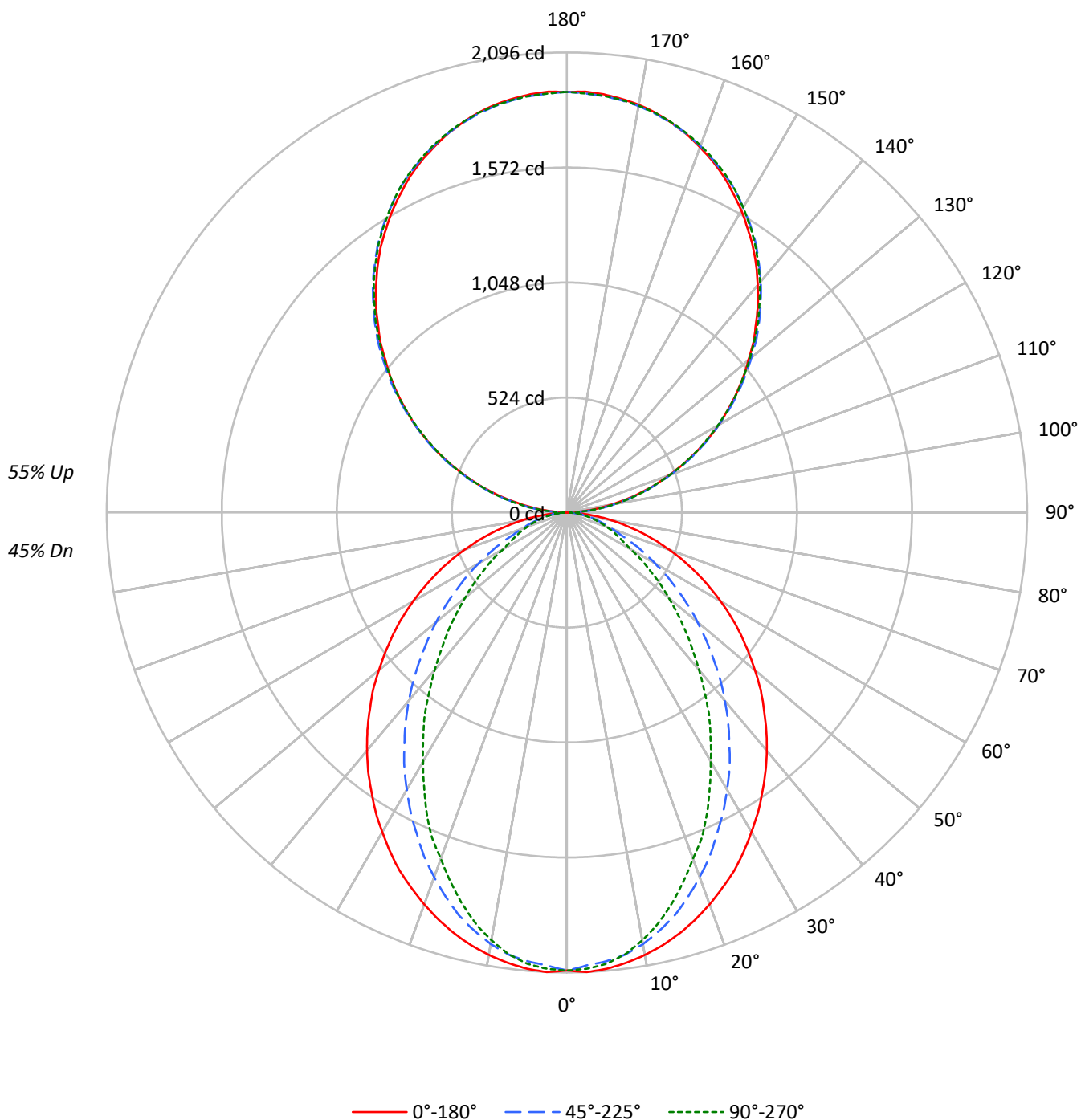
Lumens per Lamp: N/A
Luminaire Lumens: 9654.3 lumens
Efficiency: N/A
Efficacy: 107.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 90.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	45	45	45
1	97	93	89	86	89	85	82	79	71	69	67	58	56	55	46	45	44	38	38	38
2	89	82	76	71	81	75	70	66	63	59	56	51	49	47	41	39	38	33	33	33
3	81	72	65	59	74	66	60	55	56	51	47	46	43	40	37	34	33	28	28	28
4	74	64	56	51	68	59	52	47	50	45	41	41	37	35	33	30	28	25	25	25
5	68	57	49	44	63	53	46	41	45	39	35	37	33	30	30	27	25	22	22	22
6	63	51	44	38	58	48	41	36	40	35	31	34	30	27	27	24	22	19	19	19
7	58	47	39	33	54	43	36	31	37	31	28	31	27	24	25	22	20	17	17	17
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18	16	16	16
9	51	39	31	27	46	36	29	25	31	26	22	26	22	19	21	18	16	14	14	14
10	47	36	29	24	43	33	27	23	28	23	20	24	20	17	20	17	15	13	13	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2417	2417	2417
5°	2420	2377	2393
10°	2395	2329	2314
15°	2361	2250	2192
20°	2316	2143	2043
25°	2270	2022	1900
30°	2209	1899	1718
35°	2149	1767	1558
40°	2088	1630	1376
45°	2018	1478	1210
50°	1944	1325	1049
55°	1867	1162	893
60°	1779	992	734
65°	1676	819	659
70°	1552	658	595
75°	1396	576	538
80°	1170	478	462
85°	800	312	340

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2018 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.6	2.0
10°-20°	536.9	5.6
20°-30°	753.8	7.8
30°-40°	821.7	8.5
40°-50°	755.2	7.8
50°-60°	593.1	6.1
60°-70°	386.1	4.0
70°-80°	198.7	2.1
80°-90°	56.2	0.6
90°-100°	118.6	1.2
100°-110°	376.8	3.9
110°-120°	644.8	6.7
120°-130°	848.0	8.8
130°-140°	951.8	9.9
140°-150°	933.4	9.7
150°-160°	783.0	8.1
160°-170°	519.2	5.4
170°-180°	181.5	1.9
0°-30°	1486.3	15.4
0°-40°	2308.0	23.9
0°-60°	3656.4	37.9
0°-90°	4297.4	44.5
90°-120°	1140.1	11.8
90°-150°	3873.3	40.1
90°-180°	5357.0	55.5
0°-180°	9654.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2087	2087	2087	2087	2087	
5°	2087	2078	2053	2070	2064	198
15°	1985	1964	1900	1864	1845	559
25°	1802	1741	1617	1539	1511	829
35°	1552	1456	1290	1171	1129	972
45°	1269	1143	944	810	765	980
55°	965	818	614	500	465	862
65°	652	499	329	264	259	646
75°	348	215	151	138	136	368
85°	81	42	36	36	36	93
90°	2	21	57	53	55	10
95°	84	100	103	103	100	94
105°	348	352	356	359	359	367
115°	647	656	653	652	647	640
125°	941	956	951	946	944	841
135°	1217	1235	1239	1237	1232	941
145°	1478	1489	1499	1500	1494	923
155°	1690	1694	1700	1708	1702	778
165°	1838	1836	1836	1848	1840	519
175°	1913	1908	1905	1916	1906	182
180°	1916	1916	1916	1916	1916	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2086.9	2086.9	2086.9	2086.9	2086.9
2.5°	2096.3	2086.9	2066.1	2085.1	2081.2
5°	2086.9	2077.5	2052.9	2069.8	2064.3
7.5°	2069.8	2058.6	2032.2	2039.6	2030.1
10°	2047.2	2034.0	1996.3	1990.5	1979.2
12.5°	2018.9	2002.0	1950.9	1939.6	1918.7
15°	1984.9	1964.1	1900.0	1864.1	1845.2
17.5°	1945.2	1915.0	1835.6	1794.1	1763.8
20°	1900.0	1862.1	1767.7	1720.6	1678.9
22.5°	1850.9	1807.4	1697.8	1633.7	1605.4
25°	1801.7	1741.2	1616.6	1539.2	1510.8
27.5°	1743.2	1678.9	1541.1	1452.3	1408.9
30°	1680.9	1609.0	1457.9	1361.7	1310.6
32.5°	1620.4	1533.5	1378.8	1265.4	1218.1
35°	1552.5	1456.1	1290.0	1170.9	1129.3
37.5°	1486.3	1382.4	1206.9	1076.4	1029.4
40°	1416.4	1303.2	1119.8	985.8	936.8
42.5°	1344.7	1223.9	1033.1	893.2	846.2
45°	1269.2	1142.6	944.3	810.1	764.8
47.5°	1197.4	1063.4	859.4	725.2	683.7
50°	1118.1	984.0	776.3	645.8	606.3
52.5°	1040.6	898.9	696.9	572.3	536.4
55°	965.0	817.7	613.7	500.5	464.6
57.5°	887.7	736.6	540.2	434.4	404.1
60°	808.3	657.2	462.6	366.5	336.2
62.5°	730.9	579.9	396.6	306.0	290.9
65°	651.6	498.6	328.6	264.5	258.7
67.5°	576.0	423.0	264.5	232.3	226.6
70°	496.8	349.4	219.0	200.2	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	107.6
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	35.9	35.9	35.9
87.5°	30.3	15.0	15.0	13.2	13.2
90°	1.7	20.8	56.7	53.1	54.8
92.5°	35.9	48.6	50.3	52.0	52.0
95°	84.3	100.5	103.4	103.4	100.5
97.5°	140.4	155.4	161.8	161.8	161.8
100°	205.1	218.3	223.0	223.0	221.3
102.5°	273.3	283.1	289.4	291.1	289.4
105°	347.8	352.4	355.9	358.8	358.8
107.5°	421.7	428.7	428.7	429.8	421.7
110°	493.4	502.6	502.6	502.6	498.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	570.8	580.6	578.9	574.2	570.8
115°	647.0	656.3	653.4	651.7	647.0
117.5°	722.8	735.5	727.3	722.8	718.1
120°	799.0	811.7	799.0	799.0	793.8
122.5°	868.3	884.4	876.4	871.8	868.3
125°	941.1	955.5	950.9	945.7	944.0
127.5°	1012.2	1030.1	1023.7	1016.8	1012.2
130°	1078.6	1099.4	1096.5	1093.1	1086.7
132.5°	1153.2	1169.3	1170.4	1162.4	1157.7
135°	1217.3	1235.2	1238.6	1236.9	1232.2
137.5°	1288.9	1303.3	1306.3	1305.0	1298.2
140°	1351.9	1366.3	1374.4	1374.4	1368.1
142.5°	1416.5	1431.0	1435.6	1437.3	1431.0
145°	1477.8	1489.3	1498.6	1500.4	1494.0
147.5°	1532.7	1547.1	1554.1	1556.9	1550.5
150°	1589.3	1599.1	1605.5	1610.6	1605.5
152.5°	1639.5	1649.4	1657.5	1663.9	1657.5
155°	1689.8	1694.5	1699.6	1707.8	1702.5
157.5°	1733.1	1736.7	1739.5	1751.1	1743.0
160°	1771.9	1775.3	1777.1	1786.9	1780.0
162.5°	1807.7	1807.7	1809.4	1820.4	1812.3
165°	1838.3	1836.5	1836.5	1848.2	1840.1
167.5°	1866.0	1860.9	1860.9	1872.4	1864.3
170°	1886.8	1882.2	1880.5	1892.0	1882.2
172.5°	1901.3	1896.6	1894.9	1906.4	1896.6
175°	1912.8	1908.2	1904.7	1916.3	1906.4
177.5°	1919.1	1914.6	1911.1	1920.9	1911.1
180°	1916.3	1916.3	1916.3	1916.3	1916.3

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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	9.63	10.42	10.64	11.44	12.79	5.61	6.40	6.62	7.41	8.76
	3H	11.30	12.00	12.32	13.03	14.40	6.79	7.49	7.81	8.52	9.89
	4H	11.90	12.57	12.93	13.59	14.97	7.24	7.90	8.27	8.93	10.31
	6H	12.31	12.93	13.36	13.96	15.35	7.55	8.16	8.59	9.19	10.58
	8H	12.44	13.02	13.48	14.07	15.45	7.64	8.22	8.68	9.27	10.65
	12H	12.49	13.05	13.54	14.09	15.50	7.68	8.23	8.73	9.27	10.68
4H	2H	9.65	10.31	10.68	11.34	12.72	6.19	6.86	7.23	7.89	9.27
	3H	11.46	12.02	12.51	13.07	14.46	7.54	8.09	8.58	9.15	10.54
	4H	12.15	12.65	13.20	13.70	15.11	8.08	8.59	9.13	9.63	11.05
	6H	12.65	13.09	13.71	14.16	15.57	8.49	8.93	9.55	9.99	11.40
	8H	12.82	13.23	13.88	14.29	15.71	8.62	9.02	9.68	10.08	11.51
	12H	12.91	13.28	13.99	14.35	15.78	8.68	9.04	9.76	10.12	11.55
8H	4H	12.11	12.52	13.17	13.58	15.00	8.35	8.76	9.41	9.82	11.24
	6H	12.67	13.00	13.75	14.11	15.53	8.86	9.20	9.95	10.30	11.72
	8H	12.88	13.17	13.97	14.26	15.70	9.05	9.34	10.14	10.43	11.87
	12H	13.01	13.27	14.10	14.35	15.83	9.16	9.42	10.26	10.50	11.98
12H	4H	12.06	12.43	13.14	13.50	14.93	8.35	8.72	9.43	9.80	11.22
	6H	12.64	12.94	13.73	14.02	15.46	8.91	9.20	10.00	10.29	11.73
	8H	12.85	13.11	13.95	14.20	15.68	9.11	9.37	10.21	10.45	11.93