

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: P927922

Luminaire Tested: DFN2DIP-HX4F0-060D050US850-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927922
REPORT IS A COMBINATION OF REPORTS P900842 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-060D050US850-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

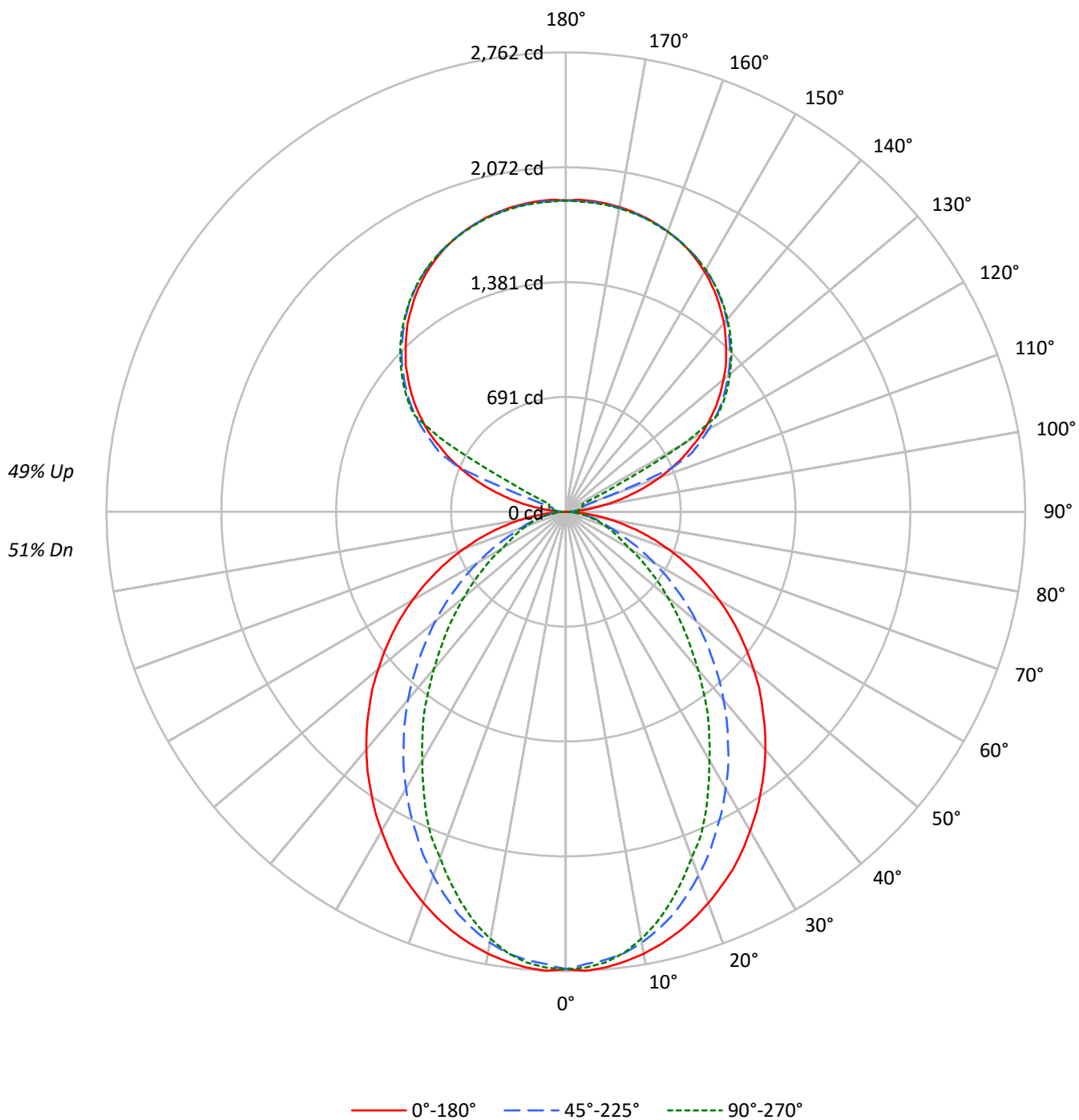
Lumens per Lamp: N/A
Luminaire Lumens: 11145.5 lumens
Efficiency: N/A
Efficacy: 121.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 91.8
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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	57	57	51
1	98	94	91	87	91	87	84	81	74	72	70	62	61	59	51	50	49	49	49	44
2	90	83	77	72	83	77	72	67	66	62	59	55	52	50	45	44	42	42	42	37
3	82	73	66	61	76	68	62	57	58	54	50	49	46	43	41	38	36	36	36	32
4	76	65	58	52	70	61	54	49	52	47	43	44	40	37	37	34	32	32	32	28
5	70	58	50	45	64	54	47	42	47	41	37	40	36	33	33	30	28	28	28	25
6	64	53	45	39	59	49	42	37	42	37	33	36	32	29	30	27	25	25	25	22
7	60	48	40	34	55	45	38	33	39	33	29	33	29	26	28	25	22	22	22	20
8	55	43	36	31	51	41	34	29	35	30	26	30	26	23	26	23	20	20	20	18
9	52	40	32	27	48	37	31	26	32	27	23	28	24	21	24	21	18	18	18	16
10	48	36	29	25	45	34	28	24	30	25	21	26	22	19	22	19	17	17	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2045	2045	2045
5°	2048	2013	2025
10°	2028	1973	1960
15°	2000	1908	1858
20°	1964	1819	1733
25°	1926	1718	1612
30°	1875	1615	1459
35°	1826	1504	1325
40°	1775	1389	1170
45°	1717	1262	1031
50°	1656	1133	894
55°	1593	996	763
60°	1520	852	628
65°	1436	706	566
70°	1333	569	512
75°	1205	502	466
80°	1020	422	405
85°	713	282	304

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1717 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	257.7	2.3
10°-20°	707.6	6.3
20°-30°	993.4	8.9
30°-40°	1082.8	9.7
40°-50°	995.2	8.9
50°-60°	781.6	7.0
60°-70°	508.8	4.6
70°-80°	261.9	2.3
80°-90°	70.1	0.6
90°-100°	61.7	0.6
100°-110°	230.0	2.1
110°-120°	610.1	5.5
120°-130°	1011.9	9.1
130°-140°	1074.8	9.6
140°-150°	999.0	9.0
150°-160°	803.1	7.2
160°-170°	517.5	4.6
170°-180°	178.1	1.6
0°-30°	1958.7	17.6
0°-40°	3041.5	27.3
0°-60°	4818.4	43.2
0°-90°	5659.2	50.8
90°-120°	901.9	8.1
90°-150°	3987.5	35.8
90°-180°	5486.0	49.2
0°-180°	11145.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2750	2750	2750	2750	2750	
5°	2750	2738	2705	2728	2720	261
15°	2616	2588	2504	2456	2432	737
25°	2374	2295	2130	2028	1991	1092
35°	2046	1919	1700	1543	1488	1281
45°	1672	1506	1244	1068	1008	1292
55°	1272	1078	809	660	612	1136
65°	859	657	433	349	341	851
75°	458	284	199	182	179	484
85°	107	55	47	47	47	123
90°	1	16	27	34	36	10
95°	88	43	53	60	58	104
105°	412	452	83	98	103	440
115°	779	802	836	209	111	767
125°	1101	1118	1144	1154	1158	982
135°	1362	1384	1396	1410	1407	1052
145°	1580	1579	1602	1611	1605	988
155°	1740	1728	1744	1752	1742	802
165°	1833	1825	1829	1839	1829	518
175°	1875	1866	1869	1878	1865	178
180°	1871	1871	1871	1871	1871	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2750.1	2750.1	2750.1	2750.1	2750.1
2.5°	2762.5	2750.1	2722.6	2747.7	2742.7
5°	2750.1	2737.7	2705.2	2727.7	2720.3
7.5°	2727.7	2712.8	2678.0	2687.8	2675.4
10°	2697.8	2680.3	2630.8	2623.1	2608.3
12.5°	2660.6	2638.1	2570.8	2556.0	2528.5
15°	2615.7	2588.2	2503.7	2456.4	2431.6
17.5°	2563.5	2523.5	2419.0	2364.3	2324.5
20°	2503.7	2453.8	2329.5	2267.4	2212.5
22.5°	2439.0	2381.7	2237.3	2152.8	2115.5
25°	2374.4	2294.6	2130.4	2028.5	1991.0
27.5°	2297.3	2212.5	2030.8	1913.8	1856.6
30°	2215.1	2120.3	1921.2	1794.5	1727.2
32.5°	2135.4	2020.8	1817.0	1667.5	1605.2
35°	2045.9	1918.9	1700.0	1543.1	1488.2
37.5°	1958.7	1821.6	1590.4	1418.5	1356.4
40°	1866.6	1717.4	1475.7	1299.1	1234.4
42.5°	1772.1	1612.8	1361.4	1177.1	1115.1
45°	1672.5	1505.6	1244.5	1067.5	1007.9
47.5°	1578.0	1401.3	1132.5	955.6	901.0
50°	1473.4	1296.8	1022.9	851.0	799.0
52.5°	1371.2	1184.5	918.4	754.1	706.9
55°	1271.7	1077.6	808.8	659.6	612.3
57.5°	1169.8	970.6	711.9	572.5	532.5
60°	1065.2	866.1	609.7	483.0	443.0
62.5°	963.3	764.2	522.6	403.2	383.4
65°	858.7	657.0	433.1	348.6	340.9
67.5°	759.1	557.4	348.6	306.1	298.7
70°	654.5	460.5	288.6	263.8	253.7
72.5°	555.1	370.7	241.3	221.6	216.5
75°	457.9	283.6	199.1	181.7	179.3
77.5°	361.0	201.5	156.8	146.8	141.8
80°	271.2	144.4	119.3	109.6	109.6
82.5°	189.1	97.1	82.1	77.1	77.1
85°	106.9	54.7	47.2	47.2	47.2
87.5°	39.9	19.9	19.9	17.4	17.4
90°	1.3	16.2	27.1	33.9	36.5
92.5°	33.9	28.5	32.5	35.3	36.5
95°	87.9	43.3	52.8	59.7	58.2
97.5°	158.4	47.5	69.0	73.2	74.4
100°	239.8	54.2	77.2	87.9	90.7
102.5°	329.0	326.4	80.0	94.7	98.9
105°	411.7	452.4	82.6	97.5	102.9
107.5°	507.8	541.5	85.4	100.1	105.7
110°	600.0	628.2	237.0	101.6	106.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	686.6	710.9	687.9	104.2	108.3
115°	778.6	801.6	835.5	208.6	111.1
117.5°	858.5	885.5	908.7	714.9	360.2
120°	947.9	968.2	992.6	1008.9	826.0
122.5°	1023.6	1045.3	1072.5	1080.6	1082.1
125°	1100.8	1118.5	1144.3	1153.7	1157.8
127.5°	1171.2	1190.2	1210.7	1224.1	1225.4
130°	1237.6	1259.4	1274.1	1289.1	1287.9
132.5°	1305.4	1323.0	1337.8	1350.1	1348.8
135°	1362.3	1384.0	1396.0	1409.8	1407.0
137.5°	1421.7	1438.0	1451.7	1465.2	1461.2
140°	1480.0	1490.9	1505.7	1517.9	1511.2
142.5°	1528.9	1538.4	1555.9	1566.7	1559.9
145°	1580.3	1578.9	1601.8	1611.4	1604.6
147.5°	1624.9	1620.8	1643.9	1650.6	1645.3
150°	1668.3	1658.8	1680.5	1688.6	1681.8
152.5°	1704.8	1694.0	1714.3	1722.5	1713.0
155°	1740.0	1727.9	1744.1	1752.2	1741.5
157.5°	1768.4	1757.7	1769.9	1779.4	1768.4
160°	1792.9	1784.7	1792.9	1800.9	1791.5
162.5°	1814.4	1806.5	1813.1	1822.6	1810.4
165°	1833.4	1825.4	1829.4	1838.8	1829.4
167.5°	1848.4	1840.2	1844.4	1853.8	1841.6
170°	1860.6	1852.4	1855.1	1864.6	1852.4
172.5°	1868.7	1860.6	1863.3	1872.8	1860.6
175°	1875.4	1865.9	1868.7	1878.1	1864.6
177.5°	1878.1	1868.7	1870.1	1879.5	1867.3
180°	1871.3	1871.3	1871.3	1871.3	1871.3

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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	9.71	10.54	10.66	11.51	12.77	5.68	6.52	6.64	7.48	8.75
	3H	11.38	12.13	12.35	13.11	14.40	6.87	7.62	7.84	8.60	9.88
	4H	11.99	12.70	12.98	13.68	14.98	7.32	8.03	8.30	9.01	10.30
	6H	12.42	13.07	13.41	14.05	15.36	7.65	8.30	8.64	9.28	10.59
	8H	12.54	13.16	13.54	14.17	15.47	7.74	8.36	8.74	9.36	10.66
	12H	12.61	13.19	13.61	14.19	15.52	7.78	8.37	8.79	9.37	10.69
4H	2H	9.72	10.43	10.71	11.41	12.71	6.28	6.98	7.26	7.96	9.26
	3H	11.56	12.14	12.55	13.15	14.46	7.63	8.22	8.63	9.23	10.53
	4H	12.25	12.79	13.25	13.79	15.12	8.18	8.72	9.18	9.72	11.05
	6H	12.77	13.23	13.78	14.25	15.58	8.60	9.06	9.62	10.09	11.42
	8H	12.94	13.37	13.96	14.39	15.74	8.73	9.16	9.75	10.18	11.52
	12H	13.04	13.43	14.07	14.46	15.81	8.80	9.18	9.83	10.22	11.57
8H	4H	12.22	12.65	13.24	13.67	15.01	8.46	8.89	9.48	9.91	11.25
	6H	12.79	13.14	13.83	14.20	15.54	8.98	9.34	10.02	10.40	11.74
	8H	13.00	13.32	14.05	14.36	15.72	9.17	9.49	10.22	10.53	11.89
	12H	13.14	13.42	14.20	14.46	15.86	9.29	9.57	10.35	10.61	12.01
12H	4H	12.17	12.56	13.21	13.59	14.94	8.47	8.85	9.50	9.89	11.24
	6H	12.76	13.07	13.81	14.12	15.48	9.03	9.34	10.08	10.39	11.75
	8H	12.98	13.26	14.04	14.30	15.70	9.24	9.52	10.30	10.56	11.96

END OF REPORT