

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: P927274

Luminaire Tested: DFN2DIP-HX4F0-060D050US835-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927274
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-HX4F0-060D050US835-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

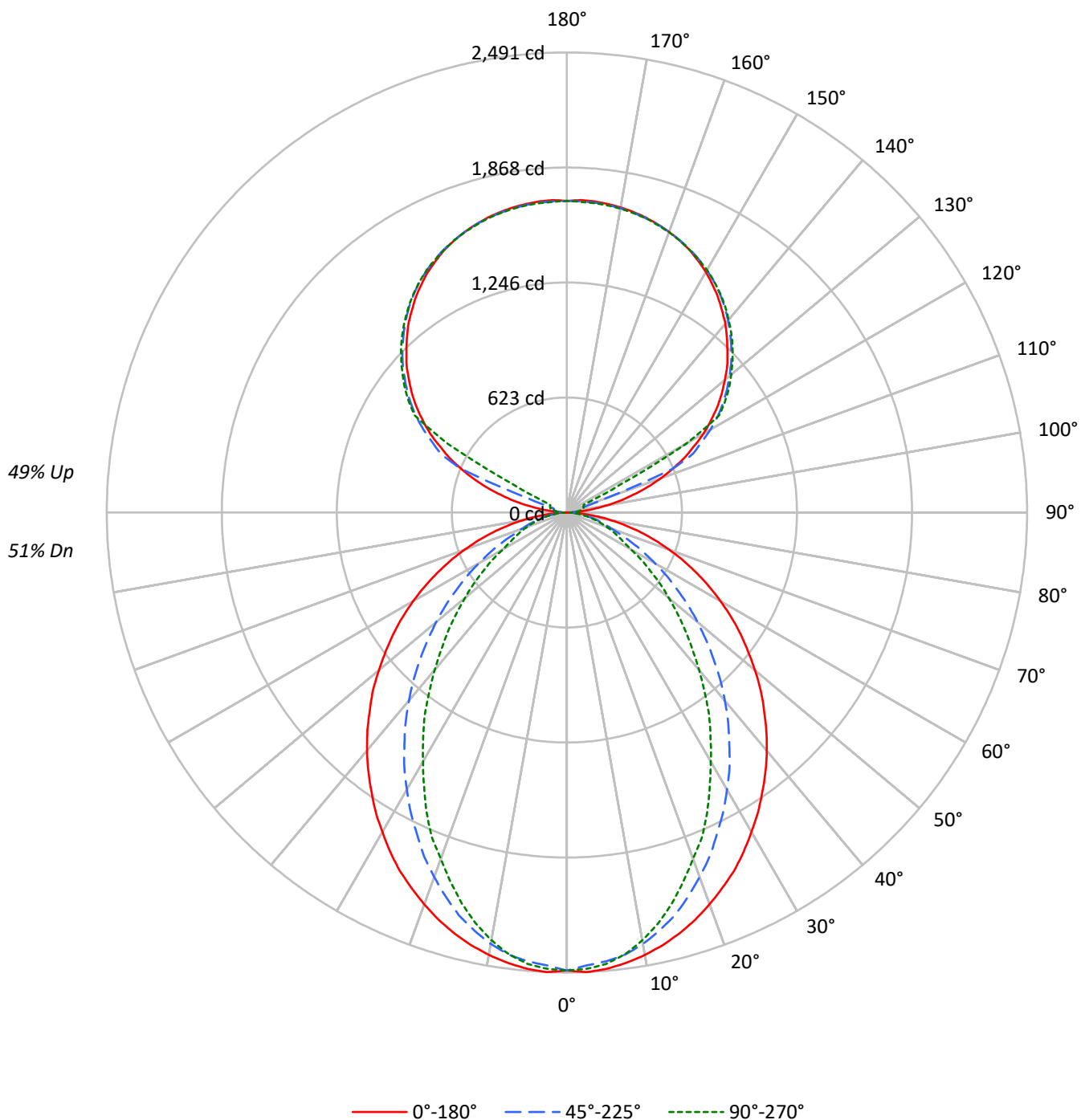
Lumens per Lamp: N/A
Luminaire Lumens: 10050.0 lumens
Efficiency: N/A
Efficacy: 109.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

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

TEST NUMBER: P927274

CATALOG NUMBER: DFN2DIP-HX4F0-060D050US835-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P927274

CATALOG NUMBER: DFN2DIP-HX4F0-060D050US835-RLLONL

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	50	30	10
RCR																				
0	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	57	57	57
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°	1844	1844	1844
5°	1847	1815	1826
10°	1829	1779	1767
15°	1804	1721	1675
20°	1771	1640	1563
25°	1737	1549	1454
30°	1691	1456	1316
35°	1646	1356	1194
40°	1601	1252	1055
45°	1548	1138	929
50°	1493	1022	806
55°	1436	898	688
60°	1370	768	566
65°	1294	636	510
70°	1202	513	462
75°	1087	453	420
80°	919	380	365
85°	643	255	275

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1548 cd/sqm

TEST NUMBER: P927274

CATALOG NUMBER: DFN2DIP-HX4F0-060D050US835-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.4	2.3
10°-20°	638.0	6.3
20°-30°	895.7	8.9
30°-40°	976.4	9.7
40°-50°	897.4	8.9
50°-60°	704.8	7.0
60°-70°	458.8	4.6
70°-80°	236.1	2.3
80°-90°	63.3	0.6
90°-100°	55.7	0.6
100°-110°	207.4	2.1
110°-120°	550.1	5.5
120°-130°	912.4	9.1
130°-140°	969.2	9.6
140°-150°	900.8	9.0
150°-160°	724.2	7.2
160°-170°	466.6	4.6
170°-180°	160.6	1.6
0°-30°	1766.2	17.6
0°-40°	2742.6	27.3
0°-60°	4344.8	43.2
0°-90°	5103.0	50.8
90°-120°	813.2	8.1
90°-150°	3595.6	35.8
90°-180°	4947.0	49.2
0°-180°	10050.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2480	2480	2480	2480	2480	
5°	2480	2469	2439	2460	2453	235
15°	2359	2334	2258	2215	2193	665
25°	2141	2069	1921	1829	1795	985
35°	1845	1730	1533	1391	1342	1155
45°	1508	1358	1122	963	909	1165
55°	1147	972	729	595	552	1025
65°	774	592	390	314	307	768
75°	413	256	180	164	162	437
85°	96	49	43	43	43	111
90°	1	15	24	31	33	9
95°	79	39	48	54	52	94
105°	371	408	74	88	93	397
115°	702	723	753	188	100	691
125°	993	1009	1032	1040	1044	885
135°	1228	1248	1259	1271	1269	949
145°	1425	1424	1444	1453	1447	891
155°	1569	1558	1573	1580	1570	723
165°	1653	1646	1650	1658	1650	467
175°	1691	1682	1685	1694	1681	161
180°	1687	1687	1687	1687	1687	



TEST NUMBER: P927274

CATALOG NUMBER: DFN2DIP-HX4F0-060D050US835-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2479.8	2479.8	2479.8	2479.8	2479.8
2.5°	2491.0	2479.8	2455.0	2477.6	2473.1
5°	2479.8	2468.6	2439.3	2459.6	2452.9
7.5°	2459.6	2446.2	2414.8	2423.6	2412.4
10°	2432.6	2416.9	2372.2	2365.3	2351.9
12.5°	2399.1	2378.8	2318.1	2304.8	2280.0
15°	2358.6	2333.8	2257.6	2215.0	2192.6
17.5°	2311.5	2275.5	2181.2	2131.9	2096.0
20°	2257.6	2212.6	2100.5	2044.5	1995.0
22.5°	2199.3	2147.6	2017.4	1941.2	1907.6
25°	2141.0	2069.1	1921.0	1829.1	1795.3
27.5°	2071.5	1995.0	1831.2	1725.7	1674.1
30°	1997.4	1911.9	1732.4	1618.1	1557.4
32.5°	1925.5	1822.2	1638.4	1503.6	1447.4
35°	1844.8	1730.3	1532.9	1391.4	1341.9
37.5°	1766.2	1642.6	1434.1	1279.1	1223.1
40°	1683.1	1548.6	1330.7	1171.4	1113.1
42.5°	1597.9	1454.3	1227.6	1061.4	1005.5
45°	1508.1	1357.6	1122.2	962.6	908.8
47.5°	1422.9	1263.6	1021.2	861.7	812.4
50°	1328.6	1169.3	922.4	767.4	720.5
52.5°	1236.4	1068.1	828.1	680.0	637.4
55°	1146.7	971.7	729.3	594.8	552.1
57.5°	1054.8	875.2	641.9	516.2	480.2
60°	960.5	781.0	549.8	435.5	399.5
62.5°	868.6	689.1	471.2	363.6	345.7
65°	774.3	592.4	390.5	314.3	307.4
67.5°	684.5	502.6	314.3	276.0	269.3
70°	590.2	415.2	260.2	237.9	228.8
72.5°	500.5	334.3	217.6	199.8	195.2
75°	412.9	255.7	179.5	163.8	161.7
77.5°	325.5	181.7	141.4	132.4	127.9
80°	244.5	130.2	107.6	98.8	98.8
82.5°	170.5	87.6	74.0	69.5	69.5
85°	96.4	49.3	42.6	42.6	42.6
87.5°	36.0	17.9	17.9	15.7	15.7
90°	1.2	14.6	24.4	30.6	32.9
92.5°	30.6	25.7	29.3	31.8	32.9
95°	79.3	39.0	47.6	53.8	52.5
97.5°	142.8	42.8	62.2	66.0	67.1
100°	216.2	48.9	69.6	79.3	81.8
102.5°	296.7	294.3	72.1	85.4	89.2
105°	371.2	407.9	74.5	87.9	92.8
107.5°	457.9	488.3	77.0	90.3	95.3
110°	541.0	566.5	213.7	91.6	96.4

TEST NUMBER: P927274

CATALOG NUMBER: DFN2DIP-HX4F0-060D050US835-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	619.1	641.0	620.3	94.0	97.7
115°	702.1	722.8	753.4	188.1	100.2
117.5°	774.1	798.5	819.4	644.6	324.8
120°	854.7	873.0	895.0	909.7	744.8
122.5°	923.0	942.6	967.1	974.4	975.7
125°	992.6	1008.6	1031.8	1040.3	1044.0
127.5°	1056.1	1073.2	1091.7	1103.8	1105.0
130°	1116.0	1135.6	1148.9	1162.4	1161.3
132.5°	1177.1	1193.0	1206.3	1217.4	1216.2
135°	1228.4	1248.0	1258.8	1271.2	1268.7
137.5°	1282.0	1296.7	1309.0	1321.2	1317.6
140°	1334.5	1344.4	1357.7	1368.7	1362.7
142.5°	1378.6	1387.2	1403.0	1412.7	1406.6
145°	1425.0	1423.7	1444.4	1453.0	1446.9
147.5°	1465.2	1461.5	1482.3	1488.4	1483.6
150°	1504.3	1495.8	1515.3	1522.6	1516.5
152.5°	1537.2	1527.5	1545.8	1553.2	1544.6
155°	1569.0	1558.1	1572.7	1580.0	1570.3
157.5°	1594.6	1584.9	1595.9	1604.5	1594.6
160°	1616.7	1609.3	1616.7	1623.9	1615.4
162.5°	1636.1	1628.9	1634.9	1643.5	1632.5
165°	1653.2	1646.0	1649.6	1658.1	1649.6
167.5°	1666.7	1659.3	1663.1	1671.6	1660.6
170°	1677.7	1670.3	1672.8	1681.3	1670.3
172.5°	1685.0	1677.7	1680.2	1688.7	1677.7
175°	1691.1	1682.5	1685.0	1693.5	1681.3
177.5°	1693.5	1685.0	1686.3	1694.8	1683.8
180°	1687.4	1687.4	1687.4	1687.4	1687.4

TEST NUMBER: P927274

CATALOG NUMBER: DFN2DIP-HX4F0-060D050US835-RLONL

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	9.35	10.18	10.30	11.15	12.41	5.32	6.16	6.28	7.12	8.39
	3H	11.02	11.77	11.99	12.75	14.04	6.51	7.26	7.48	8.24	9.52
	4H	11.63	12.34	12.62	13.32	14.62	6.96	7.67	7.95	8.65	9.94
	6H	12.06	12.71	13.05	13.69	15.00	7.29	7.94	8.28	8.92	10.23
	8H	12.18	12.80	13.18	13.81	15.11	7.38	8.00	8.38	9.00	10.30
	12H	12.25	12.84	13.25	13.83	15.16	7.42	8.01	8.43	9.01	10.33
4H	2H	9.37	10.07	10.35	11.05	12.35	5.92	6.62	6.90	7.60	8.90
	3H	11.20	11.78	12.19	12.79	14.10	7.27	7.86	8.27	8.87	10.17
	4H	11.89	12.43	12.90	13.43	14.76	7.82	8.36	8.82	9.36	10.69
	6H	12.41	12.87	13.42	13.89	15.22	8.24	8.70	9.26	9.73	11.06
	8H	12.58	13.01	13.60	14.03	15.38	8.37	8.80	9.39	9.82	11.16
	12H	12.68	13.07	13.71	14.10	15.45	8.44	8.83	9.47	9.86	11.21
8H	4H	11.86	12.29	12.88	13.31	14.65	8.10	8.53	9.12	9.55	10.89
	6H	12.43	12.78	13.47	13.84	15.18	8.62	8.98	9.66	10.04	11.38
	8H	12.64	12.96	13.69	14.00	15.36	8.81	9.13	9.86	10.17	11.53
	12H	12.78	13.06	13.84	14.10	15.50	8.93	9.21	9.99	10.25	11.65
12H	4H	11.81	12.20	12.85	13.23	14.58	8.11	8.49	9.14	9.53	10.88
	6H	12.40	12.71	13.45	13.76	15.12	8.67	8.98	9.72	10.03	11.39
	8H	12.62	12.90	13.68	13.94	15.34	8.88	9.16	9.94	10.20	11.60