

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: P904997

Luminaire Tested: DFN2DIP-4P3F0-060D050US835-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904997
REPORT IS A COMBINATION OF REPORTS P900588 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-060D050US835-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open
No Lens
Light Source: -
Ballast/Driver: -

Summary

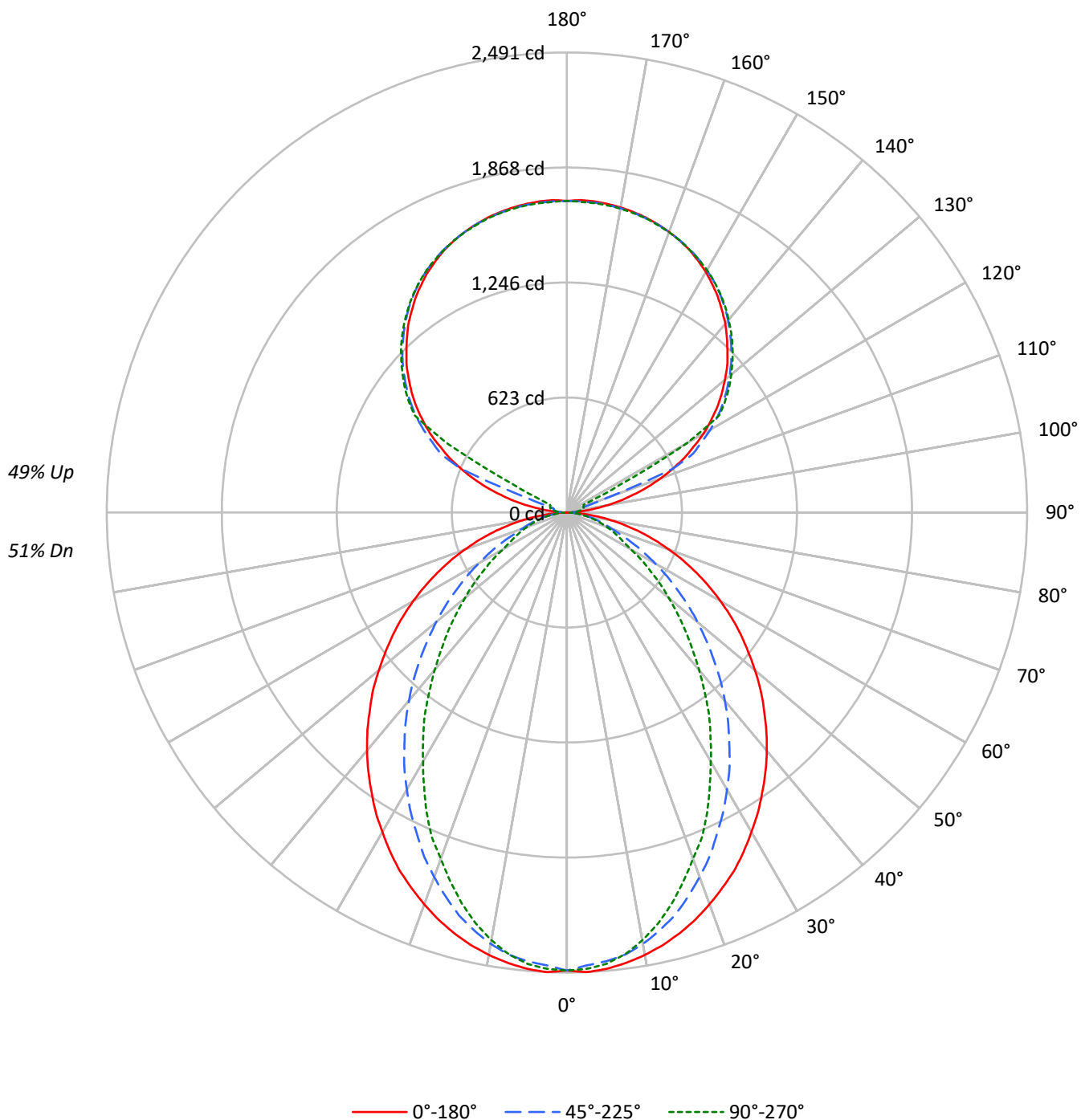
Lumens per Lamp: N/A
Luminaire Lumens: 10050.0 lumens
Efficiency: N/A
Efficacy: 100.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 100.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
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	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57
1	98	94	91	87	91	87	84	81	74	72	70	62	61	59	51	50	49
2	90	83	77	72	83	77	72	67	66	62	59	55	52	50	45	44	42
3	82	73	66	61	76	68	62	57	58	54	50	49	46	43	41	38	36
4	76	65	58	52	70	61	54	49	52	47	43	44	40	37	37	34	32
5	70	58	50	45	64	54	47	42	47	41	37	40	36	33	33	30	28
6	64	53	45	39	59	49	42	37	42	37	33	36	32	29	30	27	25
7	60	48	40	34	55	45	38	33	39	33	29	33	29	26	28	25	22
8	55	43	36	31	51	41	34	29	35	30	26	30	26	23	26	23	20
9	52	40	32	27	48	37	31	26	32	27	23	28	24	21	24	21	18
10	48	36	29	25	45	34	28	24	30	25	21	26	22	19	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2826	2826	2826
5°	2829	2779	2798
10°	2799	2723	2706
15°	2759	2631	2564
20°	2706	2505	2391
25°	2652	2365	2224
30°	2580	2221	2012
35°	2509	2066	1825
40°	2437	1906	1612
45°	2354	1729	1418
50°	2268	1550	1230
55°	2177	1360	1048
60°	2072	1161	862
65°	1952	958	775
70°	1805	770	700
75°	1621	675	635
80°	1355	560	547
85°	919	365	406

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2354 cd/sqm

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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	

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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



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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

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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	10.80	11.63	11.75	12.60	13.86	6.76	7.59	7.71	8.56	9.82
	3H	12.47	13.22	13.44	14.19	15.48	7.94	8.69	8.91	9.66	10.95
	4H	13.07	13.78	14.06	14.76	16.06	8.39	9.09	9.37	10.07	11.37
	6H	13.49	14.14	14.49	15.13	16.44	8.70	9.35	9.69	10.34	11.64
	8H	13.62	14.24	14.62	15.24	16.54	8.79	9.41	9.79	10.41	11.71
	12H	13.68	14.27	14.68	15.26	16.59	8.83	9.42	9.83	10.41	11.74
4H	2H	10.81	11.52	11.80	12.50	13.79	7.35	8.06	8.34	9.04	10.33
	3H	12.64	13.22	13.63	14.24	15.54	8.69	9.28	9.69	10.29	11.60
	4H	13.33	13.86	14.33	14.87	16.20	9.24	9.77	10.24	10.78	12.11
	6H	13.84	14.30	14.85	15.32	16.65	9.65	10.11	10.67	11.14	12.47
	8H	14.01	14.44	15.03	15.46	16.80	9.77	10.21	10.79	11.22	12.57
	12H	14.10	14.49	15.14	15.53	16.87	9.84	10.22	10.87	11.26	12.61
8H	4H	13.29	13.72	14.31	14.74	16.09	9.51	9.94	10.53	10.96	12.31
	6H	13.85	14.21	14.90	15.27	16.61	10.02	10.38	11.07	11.44	12.78
	8H	14.07	14.38	15.12	15.43	16.79	10.21	10.52	11.26	11.57	12.93
	12H	14.20	14.48	15.25	15.52	16.92	10.32	10.60	11.38	11.64	13.04
12H	4H	13.24	13.63	14.28	14.67	16.02	9.52	9.91	10.55	10.94	12.29
	6H	13.83	14.14	14.88	15.19	16.55	10.07	10.39	11.12	11.43	12.79
	8H	14.05	14.32	15.10	15.36	16.77	10.28	10.55	11.33	11.59	13.00