

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: P904597

Luminaire Tested: DFN2DIP-TR4F0-050D080US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904597
REPORT IS A COMBINATION OF REPORTS P901964 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D080US830-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

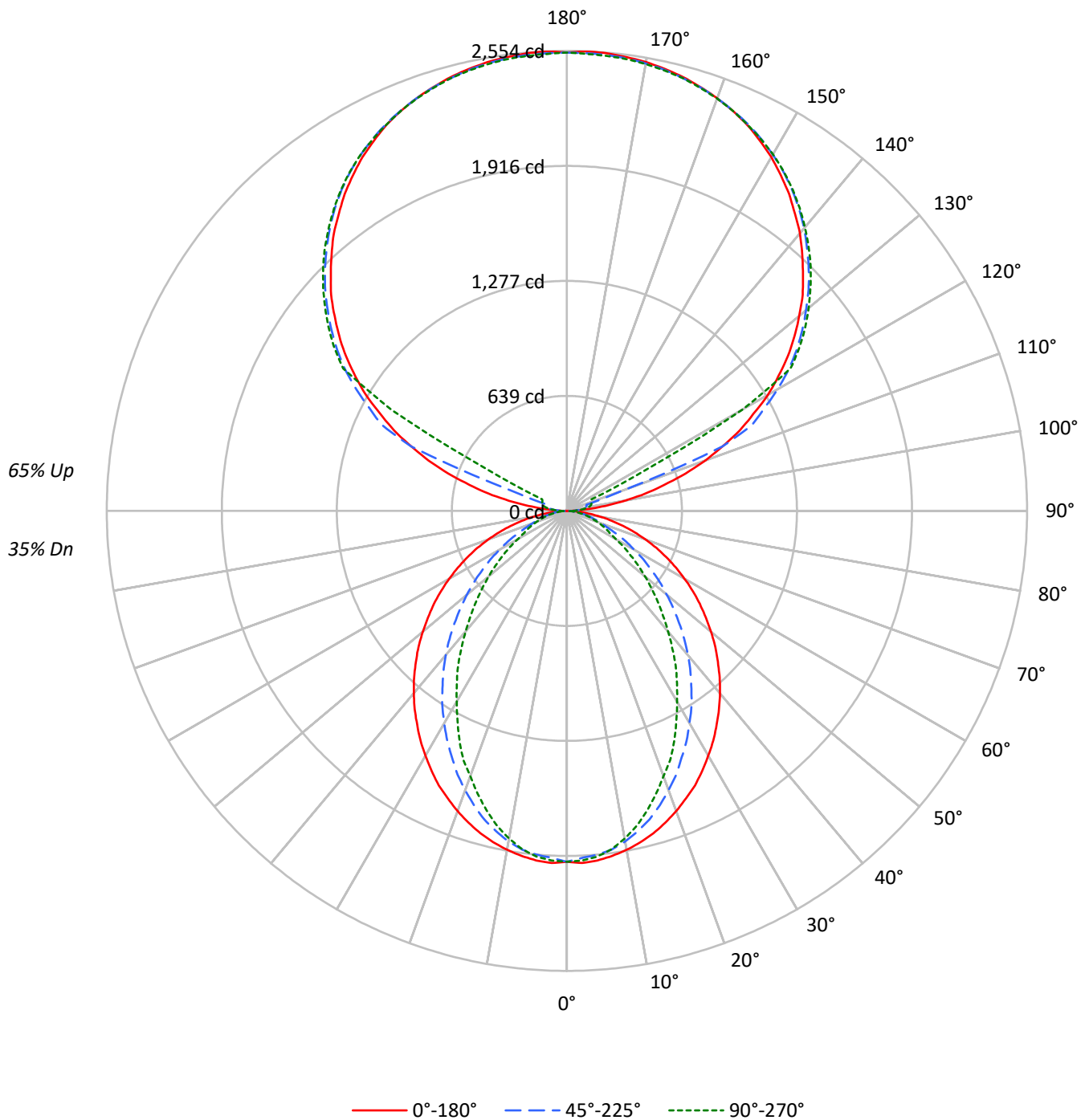
Lumens per Lamp: N/A
Luminaire Lumens: 11470.8 lumens
Efficiency: N/A
Efficacy: 113.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 101.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	42	42	42
1	95	91	87	84	86	82	79	76	66	64	62	51	50	49	38	37	36
2	87	80	74	69	78	72	67	63	58	55	52	46	43	41	34	32	31
3	79	70	63	58	71	64	58	53	52	47	44	41	38	35	30	28	27
4	72	62	55	49	65	57	50	45	46	41	38	36	33	30	27	25	23
5	67	56	48	42	60	51	44	39	41	36	33	33	29	27	25	22	21
6	61	50	42	37	55	45	39	34	37	32	29	30	26	23	22	20	18
7	57	45	37	32	51	41	34	30	34	29	25	27	23	21	21	18	16
8	53	41	33	28	48	37	31	26	31	26	22	25	21	19	19	17	15
9	49	37	30	25	44	34	28	23	28	23	20	23	19	17	18	15	13
10	46	34	27	23	41	31	25	21	26	21	18	21	18	15	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1547	1547	1547
5°	1550	1523	1533
10°	1534	1493	1483
15°	1513	1444	1405
20°	1486	1375	1311
25°	1457	1299	1219
30°	1418	1221	1103
35°	1381	1137	1002
40°	1343	1050	885
45°	1298	954	779
50°	1252	856	676
55°	1204	752	577
60°	1148	643	475
65°	1084	533	427
70°	1007	429	386
75°	910	378	352
80°	769	317	305
85°	536	212	229

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1353 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.5	1.6
10°-20°	501.1	4.4
20°-30°	703.6	6.1
30°-40°	766.9	6.7
40°-50°	704.9	6.1
50°-60°	553.6	4.8
60°-70°	360.3	3.1
70°-80°	185.5	1.6
80°-90°	51.8	0.5
90°-100°	83.9	0.7
100°-110°	312.8	2.7
110°-120°	829.6	7.2
120°-130°	1376.0	12.0
130°-140°	1461.6	12.7
140°-150°	1358.4	11.8
150°-160°	1092.1	9.5
160°-170°	703.7	6.1
170°-180°	242.2	2.1
0°-30°	1387.2	12.1
0°-40°	2154.2	18.8
0°-60°	3412.7	29.8
0°-90°	4010.3	35.0
90°-120°	1226.4	10.7
90°-150°	5422.4	47.3
90°-180°	7460.0	65.0
0°-180°	11470.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1948	1948	1948	1948	1948	
5°	1948	1939	1916	1932	1927	185
15°	1853	1833	1773	1740	1722	522
25°	1682	1625	1509	1437	1410	773
35°	1449	1359	1204	1093	1054	907
45°	1185	1066	881	756	714	915
55°	901	763	573	467	434	805
65°	608	465	307	247	242	603
75°	324	201	141	129	127	343
85°	76	39	34	34	34	87
90°	2	22	37	46	50	11
95°	120	59	72	81	79	142
105°	560	615	112	132	140	598
115°	1059	1090	1136	284	151	1042
125°	1497	1521	1556	1569	1574	1335
135°	1852	1882	1898	1917	1913	1431
145°	2149	2147	2178	2191	2182	1344
155°	2366	2350	2372	2383	2368	1090
165°	2493	2482	2488	2501	2488	704
175°	2550	2537	2541	2554	2536	243
180°	2545	2545	2545	2545	2545	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1947.8	1947.8	1947.8	1947.8	1947.8
2.5°	1956.5	1947.8	1928.3	1946.1	1942.5
5°	1947.8	1939.0	1916.0	1931.8	1926.7
7.5°	1931.8	1921.4	1896.7	1903.7	1894.8
10°	1910.7	1898.4	1863.2	1857.8	1847.3
12.5°	1884.3	1868.5	1820.8	1810.3	1790.8
15°	1852.6	1833.2	1773.3	1739.8	1722.2
17.5°	1815.5	1787.3	1713.3	1674.5	1646.2
20°	1773.3	1738.0	1649.8	1605.9	1567.0
22.5°	1727.5	1686.9	1584.6	1524.8	1498.4
25°	1681.6	1625.1	1508.8	1436.6	1410.0
27.5°	1627.0	1567.0	1438.3	1355.5	1314.9
30°	1568.9	1501.8	1360.7	1270.9	1223.2
32.5°	1512.4	1431.3	1286.9	1181.0	1136.9
35°	1449.0	1359.1	1204.0	1092.9	1054.0
37.5°	1387.2	1290.2	1126.4	1004.7	960.7
40°	1322.0	1216.4	1045.2	920.1	874.3
42.5°	1255.1	1142.3	964.2	833.7	789.8
45°	1184.6	1066.4	881.4	756.1	713.8
47.5°	1117.6	992.5	802.1	676.8	638.1
50°	1043.6	918.4	724.5	602.8	565.9
52.5°	971.2	839.0	650.4	534.1	500.7
55°	900.7	763.2	572.8	467.1	433.7
57.5°	828.5	687.5	504.2	405.5	377.2
60°	754.4	613.4	431.8	342.0	313.8
62.5°	682.2	541.2	370.1	285.6	271.5
65°	608.1	465.3	306.7	246.9	241.5
67.5°	537.6	394.8	246.9	216.8	211.5
70°	463.6	326.1	204.4	186.8	179.7
72.5°	393.1	262.6	171.0	156.9	153.4
75°	324.3	200.9	141.0	128.7	127.0
77.5°	255.6	142.7	111.1	104.0	100.4
80°	192.1	102.3	84.5	77.6	77.6
82.5°	133.9	68.8	58.2	54.6	54.6
85°	75.8	38.7	33.5	33.5	33.5
87.5°	28.3	14.0	14.0	12.3	12.3
90°	1.8	22.1	36.8	46.1	49.7
92.5°	46.1	38.7	44.2	47.9	49.7
95°	119.6	58.8	71.7	81.2	79.2
97.5°	215.4	64.5	93.8	99.5	101.2
100°	326.0	73.7	105.0	119.6	123.3
102.5°	447.4	443.8	108.7	128.8	134.5
105°	559.8	615.1	112.4	132.5	140.0
107.5°	690.5	736.4	116.1	136.2	143.6
110°	815.9	854.3	322.3	138.2	145.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	933.7	966.7	935.5	141.7	147.4
115°	1058.8	1090.1	1136.1	283.6	151.1
117.5°	1167.4	1204.2	1235.7	972.1	489.8
120°	1289.0	1316.5	1349.8	1371.9	1123.2
122.5°	1391.9	1421.5	1458.5	1469.4	1471.4
125°	1496.9	1521.0	1555.9	1568.9	1574.3
127.5°	1592.7	1618.5	1646.3	1664.6	1666.4
130°	1683.0	1712.5	1732.7	1753.0	1751.2
132.5°	1775.1	1799.1	1819.3	1835.9	1834.1
135°	1852.5	1882.0	1898.4	1917.0	1913.3
137.5°	1933.4	1955.5	1974.1	1992.4	1987.0
140°	2012.5	2027.4	2047.6	2064.2	2054.9
142.5°	2079.1	2091.9	2115.7	2130.4	2121.2
145°	2149.0	2147.0	2178.3	2191.2	2182.0
147.5°	2209.6	2204.1	2235.3	2244.6	2237.3
150°	2268.6	2255.7	2285.2	2296.1	2287.0
152.5°	2318.3	2303.6	2331.1	2342.3	2329.4
155°	2366.2	2349.8	2371.8	2382.7	2368.1
157.5°	2404.8	2390.2	2406.8	2419.7	2404.8
160°	2438.1	2427.0	2438.1	2449.0	2436.1
162.5°	2467.4	2456.5	2465.6	2478.5	2461.9
165°	2493.2	2482.3	2487.7	2500.6	2487.7
167.5°	2513.5	2502.4	2508.0	2520.9	2504.3
170°	2530.2	2518.9	2522.7	2535.6	2518.9
172.5°	2541.1	2530.2	2533.8	2546.7	2530.2
175°	2550.2	2537.3	2541.1	2553.9	2535.6
177.5°	2553.9	2541.1	2543.0	2555.9	2539.3
180°	2544.8	2544.8	2544.8	2544.8	2544.8

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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	7.07	7.79	8.15	8.87	10.34	3.04	3.76	4.12	4.84	6.31
	3H	8.74	9.38	9.83	10.47	11.96	4.22	4.87	5.31	5.95	7.44
	4H	9.34	9.95	10.44	11.04	12.53	4.67	5.28	5.77	6.37	7.86
	6H	9.75	10.32	10.86	11.41	12.92	4.98	5.55	6.09	6.64	8.15
	8H	9.88	10.41	10.99	11.52	13.02	5.07	5.61	6.19	6.71	8.22
	12H	9.94	10.44	11.05	11.54	13.07	5.11	5.62	6.23	6.72	8.25
4H	2H	7.07	7.68	8.18	8.77	10.27	3.62	4.23	4.73	5.32	6.82
	3H	8.89	9.40	10.01	10.51	12.02	4.96	5.47	6.08	6.59	8.10
	4H	9.58	10.04	10.70	11.15	12.68	5.51	5.97	6.63	7.08	8.61
	6H	10.09	10.49	11.21	11.61	13.14	5.92	6.32	7.05	7.45	8.97
	8H	10.26	10.63	11.39	11.75	13.29	6.05	6.42	7.17	7.54	9.08
	12H	10.35	10.69	11.49	11.82	13.36	6.11	6.45	7.25	7.58	9.12
8H	4H	9.54	9.91	10.66	11.03	12.57	5.78	6.15	6.91	7.27	8.81
	6H	10.10	10.41	11.25	11.57	13.10	6.30	6.60	7.44	7.76	9.30
	8H	10.32	10.58	11.47	11.73	13.28	6.49	6.76	7.64	7.90	9.45
	12H	10.45	10.69	11.61	11.82	13.42	6.60	6.84	7.76	7.98	9.57
12H	4H	9.49	9.82	10.63	10.95	12.50	5.78	6.12	6.92	7.25	8.79
	6H	10.08	10.34	11.23	11.49	13.04	6.34	6.61	7.50	7.75	9.31
	8H	10.29	10.53	11.45	11.67	13.26	6.55	6.79	7.71	7.92	9.52

END OF REPORT