

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: P904431

Luminaire Tested: DFN2DIP-TR3F0-050D070US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904431
REPORT IS A COMBINATION OF REPORTS P901852 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-050D070US830-RLLONL
Description: 3 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

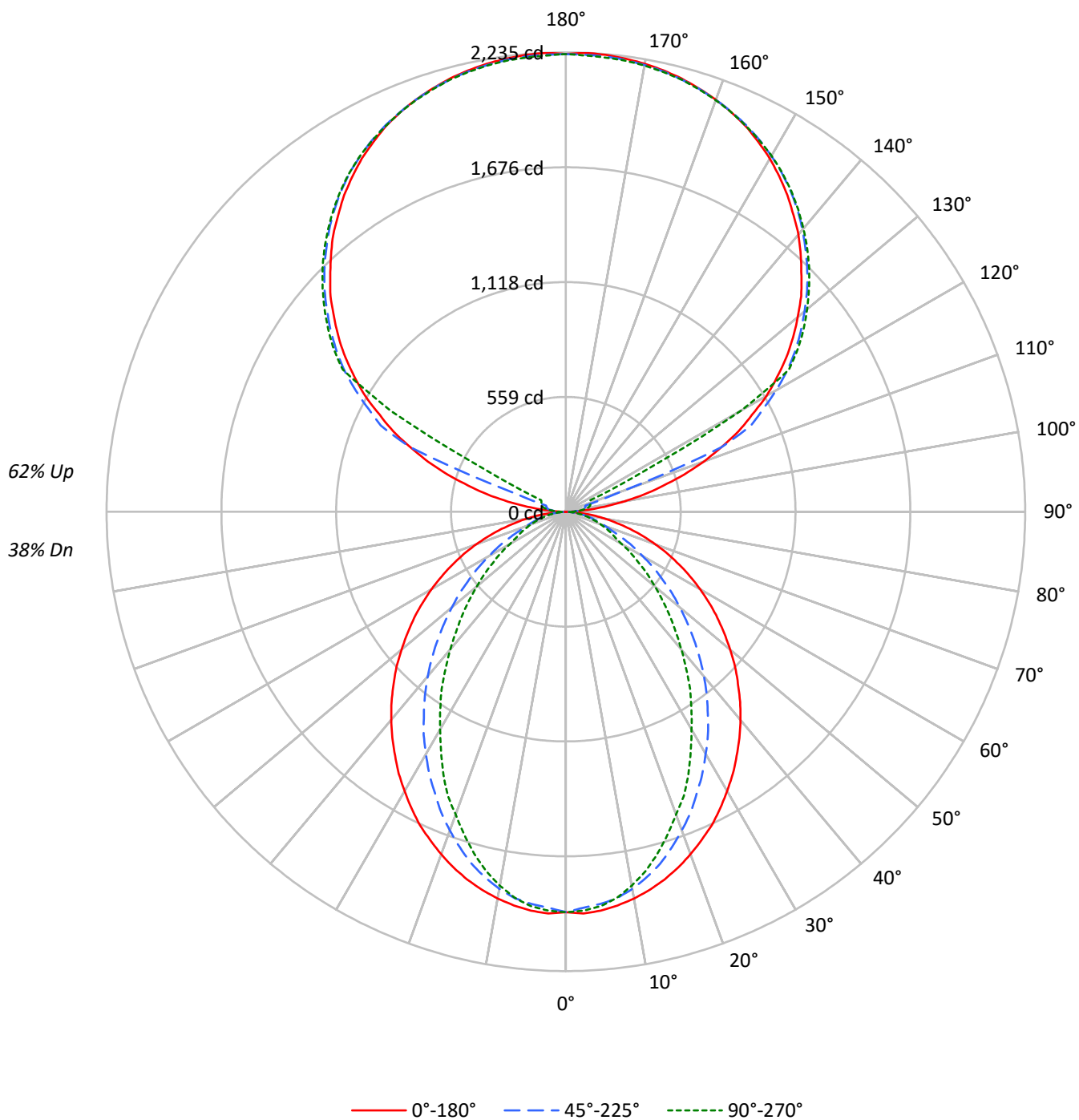
Lumens per Lamp: N/A
Luminaire Lumens: 10537.6 lumens
Efficiency: N/A
Efficacy: 106.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 98.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45	33	33	33
1	95	91	88	84	87	83	80	77	68	66	64	54	52	51	40	40	39	33	33	33
2	87	80	74	69	79	73	68	64	60	56	53	47	45	43	36	35	33	28	28	28
3	80	71	64	58	72	65	59	54	53	49	45	42	39	37	32	30	29	24	24	24
4	73	63	55	50	66	57	51	46	47	42	39	38	34	32	29	27	25	21	21	21
5	67	56	48	43	61	51	45	40	42	37	34	34	31	28	26	24	22	19	19	19
6	62	50	43	37	56	46	39	34	38	33	29	31	27	24	24	22	20	16	16	16
7	57	45	38	32	52	42	35	30	35	30	26	28	24	22	22	19	18	15	15	15
8	53	41	34	29	48	38	31	27	32	27	23	26	22	19	20	18	16	13	13	13
9	50	38	31	26	45	35	28	24	29	24	21	24	20	18	19	16	14	12	12	12
10	46	35	28	23	42	32	26	22	27	22	19	22	18	16	17	15	13	11	11	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2427	2427	2427
5°	2430	2387	2402
10°	2404	2338	2322
15°	2370	2258	2200
20°	2325	2150	2051
25°	2278	2029	1906
30°	2217	1905	1724
35°	2156	1772	1563
40°	2095	1634	1380
45°	2024	1482	1214
50°	1950	1328	1051
55°	1872	1164	895
60°	1782	993	735
65°	1679	820	660
70°	1554	658	595
75°	1396	575	538
80°	1169	476	461
85°	796	309	338

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2024 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.5	1.7
10°-20°	501.1	4.8
20°-30°	703.6	6.7
30°-40°	766.9	7.3
40°-50°	704.9	6.7
50°-60°	553.6	5.3
60°-70°	360.3	3.4
70°-80°	185.5	1.8
80°-90°	51.3	0.5
90°-100°	73.4	0.7
100°-110°	273.7	2.6
110°-120°	725.9	6.9
120°-130°	1204.0	11.4
130°-140°	1278.9	12.1
140°-150°	1188.6	11.3
150°-160°	955.6	9.1
160°-170°	615.8	5.8
170°-180°	211.9	2.0
0°-30°	1387.2	13.2
0°-40°	2154.2	20.4
0°-60°	3412.7	32.4
0°-90°	4009.7	38.1
90°-120°	1073.0	10.2
90°-150°	4744.6	45.0
90°-180°	6528.0	61.9
0°-180°	10537.6	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	19	32	40	44	10
95°	105	52	63	71	69	124
105°	490	538	98	116	122	523
115°	926	954	994	248	132	912
125°	1310	1331	1362	1373	1378	1168
135°	1621	1647	1661	1677	1674	1252
145°	1880	1879	1906	1917	1909	1176
155°	2070	2056	2075	2085	2072	954
165°	2182	2172	2177	2188	2177	616
175°	2232	2220	2224	2235	2219	212
180°	2227	2227	2227	2227	2227	

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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°	1.5	19.3	32.1	40.3	43.5
92.5°	40.3	33.8	38.6	41.9	43.5
95°	104.6	51.5	62.8	71.0	69.3
97.5°	188.4	56.5	82.1	87.1	88.6
100°	285.3	64.5	91.8	104.6	107.9
102.5°	391.4	388.4	95.1	112.7	117.6
105°	489.8	538.2	98.3	115.9	122.4
107.5°	604.2	644.4	101.6	119.2	125.7
110°	713.9	747.5	282.0	120.9	127.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	817.0	845.8	818.5	123.9	128.9
115°	926.4	953.8	994.1	248.2	132.2
117.5°	1021.5	1053.7	1081.2	850.6	428.6
120°	1127.8	1152.0	1181.1	1200.4	982.9
122.5°	1218.0	1243.8	1276.2	1285.7	1287.4
125°	1309.9	1330.9	1361.5	1372.8	1377.5
127.5°	1393.6	1416.2	1440.5	1456.6	1458.1
130°	1472.6	1498.5	1516.1	1533.9	1532.4
132.5°	1553.2	1574.2	1591.9	1606.4	1604.9
135°	1620.9	1646.7	1661.1	1677.3	1674.1
137.5°	1691.7	1711.1	1727.3	1743.4	1738.6
140°	1761.0	1774.0	1791.6	1806.1	1798.1
142.5°	1819.1	1830.4	1851.2	1864.1	1856.1
145°	1880.4	1878.7	1906.0	1917.3	1909.3
147.5°	1933.3	1928.6	1956.0	1964.0	1957.7
150°	1985.0	1973.8	1999.6	2009.1	2001.1
152.5°	2028.4	2015.6	2039.8	2049.5	2038.2
155°	2070.4	2056.0	2075.3	2084.9	2072.1
157.5°	2104.2	2091.4	2105.9	2117.2	2104.2
160°	2133.4	2123.5	2133.4	2142.9	2131.6
162.5°	2159.0	2149.4	2157.4	2168.7	2154.2
165°	2181.5	2172.0	2176.7	2188.0	2176.7
167.5°	2199.3	2189.5	2194.5	2205.8	2191.3
170°	2213.8	2204.1	2207.3	2218.7	2204.1
172.5°	2223.5	2213.8	2217.1	2228.4	2213.8
175°	2231.5	2220.2	2223.5	2234.7	2218.7
177.5°	2234.7	2223.5	2225.2	2236.5	2221.9
180°	2226.7	2226.7	2226.7	2226.7	2226.7

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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	8.95	9.69	10.01	10.75	12.18	4.92	5.67	5.98	6.72	8.16
	3H	10.61	11.27	11.68	12.34	13.79	6.10	6.76	7.17	7.83	9.28
	4H	11.21	11.83	12.29	12.90	14.36	6.54	7.17	7.62	8.24	9.70
	6H	11.62	12.19	12.71	13.27	14.74	6.86	7.43	7.94	8.51	9.98
	8H	11.74	12.29	12.83	13.37	14.84	6.94	7.49	8.03	8.58	10.04
	12H	11.79	12.31	12.89	13.39	14.88	6.98	7.50	8.08	8.58	10.07
4H	2H	8.95	9.58	10.04	10.65	12.11	5.50	6.13	6.59	7.20	8.66
	3H	10.76	11.29	11.86	12.38	13.85	6.84	7.36	7.93	8.46	9.93
	4H	11.45	11.92	12.54	13.01	14.50	7.38	7.86	8.48	8.94	10.44
	6H	11.95	12.36	13.05	13.47	14.95	7.79	8.20	8.89	9.31	10.79
	8H	12.12	12.50	13.22	13.60	15.10	7.91	8.29	9.02	9.40	10.90
	12H	12.20	12.55	13.32	13.66	15.17	7.97	8.32	9.09	9.43	10.94
8H	4H	11.41	11.79	12.51	12.89	14.39	7.65	8.03	8.75	9.13	10.63
	6H	11.96	12.27	13.09	13.42	14.92	8.15	8.47	9.28	9.61	11.11
	8H	12.17	12.44	13.30	13.57	15.09	8.34	8.62	9.47	9.74	11.26
	12H	12.30	12.54	13.43	13.66	15.22	8.45	8.69	9.59	9.81	11.37
12H	4H	11.35	11.70	12.48	12.81	14.32	7.65	7.99	8.77	9.11	10.61
	6H	11.93	12.21	13.07	13.33	14.85	8.20	8.48	9.33	9.60	11.12
	8H	12.14	12.39	13.28	13.51	15.06	8.40	8.64	9.54	9.77	11.32

END OF REPORT