

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: P923546

Luminaire Tested: DFN2DIP-TR3F0-060D060US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923546
REPORT IS A COMBINATION OF REPORTS P900319 AND P897195
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-060D060US940-FLLFLL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

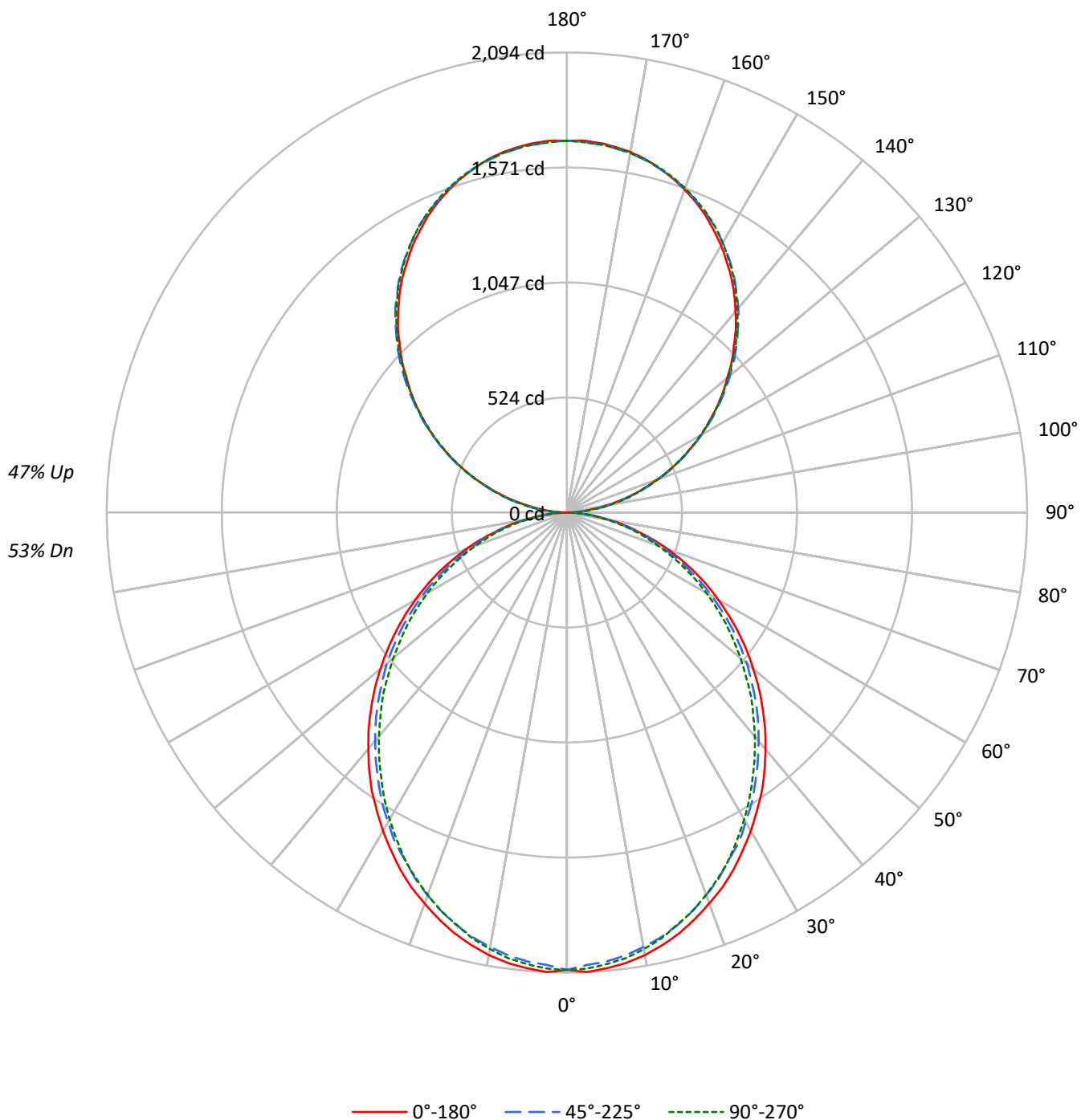
Lumens per Lamp: N/A
Luminaire Lumens: 10031.8 lumens
Efficiency: N/A
Efficacy: 97.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 102.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2594	2594	2594
5°	2597	2556	2574
10°	2574	2519	2537
15°	2535	2476	2481
20°	2482	2416	2423
25°	2430	2345	2357
30°	2365	2278	2274
35°	2303	2200	2185
40°	2227	2122	2101
45°	2151	2043	2015
50°	2068	1960	1915
55°	1981	1864	1823
60°	1882	1750	1717
65°	1775	1632	1593
70°	1637	1488	1458
75°	1448	1315	1332
80°	1219	1094	1094
85°	860	720	707

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2151 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.9	2.0
10°-20°	551.3	5.5
20°-30°	810.2	8.1
30°-40°	941.0	9.4
40°-50°	939.8	9.4
50°-60°	819.5	8.2
60°-70°	605.8	6.0
70°-80°	342.7	3.4
80°-90°	95.3	0.9
90°-100°	104.7	1.0
100°-110°	332.7	3.3
110°-120°	569.3	5.7
120°-130°	748.8	7.5
130°-140°	840.5	8.4
140°-150°	824.2	8.2
150°-160°	691.4	6.9
160°-170°	458.5	4.6
170°-180°	160.3	1.6
0°-30°	1557.4	15.5
0°-40°	2498.4	24.9
0°-60°	4257.8	42.4
0°-90°	5301.6	52.8
90°-120°	1006.7	10.0
90°-150°	3420.1	34.1
90°-180°	4730.0	47.2
0°-180°	10031.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2082	2082	2082	2082	2082	
5°	2082	2074	2052	2068	2064	198
15°	1982	1970	1944	1952	1942	558
25°	1794	1778	1744	1748	1744	825
35°	1548	1528	1495	1483	1473	966
45°	1259	1245	1215	1193	1185	972
55°	953	941	917	893	883	852
65°	643	631	611	592	583	635
75°	336	332	322	310	314	359
85°	82	80	78	72	70	91
90°	2	18	50	47	48	10
95°	74	89	91	91	89	83
105°	307	311	314	317	317	324
115°	571	580	577	575	571	565
125°	831	844	840	835	834	743
135°	1075	1091	1094	1092	1088	831
145°	1305	1315	1323	1325	1319	815
155°	1492	1496	1501	1508	1503	687
165°	1623	1622	1622	1632	1625	458
175°	1689	1685	1682	1692	1683	160
180°	1692	1692	1692	1692	1692	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2081.8	2081.8	2081.8	2081.8	2081.8
2.5°	2093.9	2083.9	2061.8	2081.8	2078.0
5°	2081.8	2073.9	2051.8	2067.8	2064.0
7.5°	2067.8	2055.9	2033.8	2050.0	2045.9
10°	2045.9	2031.9	2007.9	2023.8	2017.9
12.5°	2015.8	2003.9	1979.9	1989.9	1985.8
15°	1981.7	1969.9	1943.8	1951.9	1941.9
17.5°	1939.7	1927.9	1901.8	1911.6	1901.8
20°	1893.6	1881.8	1853.7	1859.7	1851.8
22.5°	1847.8	1829.7	1803.6	1803.6	1799.6
25°	1793.6	1777.7	1743.7	1747.5	1743.7
27.5°	1733.5	1719.5	1693.5	1687.7	1677.7
30°	1673.7	1657.4	1627.5	1621.6	1613.5
32.5°	1609.4	1597.6	1565.5	1553.4	1545.3
35°	1547.5	1527.5	1495.4	1483.3	1473.3
37.5°	1477.4	1459.3	1427.3	1413.2	1403.2
40°	1405.3	1389.2	1357.2	1339.3	1331.2
42.5°	1335.2	1319.1	1287.3	1267.1	1255.2
45°	1259.3	1245.2	1215.0	1193.2	1185.1
47.5°	1185.1	1171.1	1139.1	1117.0	1105.0
50°	1107.0	1097.0	1069.0	1040.9	1030.9
52.5°	1030.9	1016.9	991.0	968.9	954.9
55°	953.0	940.8	916.9	892.9	882.9
57.5°	874.9	864.9	838.7	814.8	806.6
60°	796.7	788.8	760.8	738.7	732.7
62.5°	720.6	706.6	686.6	666.6	658.6
65°	642.7	630.6	610.6	592.5	582.6
67.5°	562.6	552.4	534.6	520.6	512.5
70°	488.5	480.5	462.4	448.4	440.5
72.5°	412.4	404.4	394.4	380.4	374.4
75°	336.2	332.4	322.2	310.3	314.3
77.5°	268.2	260.2	256.1	250.2	244.2
80°	200.3	198.1	194.1	188.2	184.1
82.5°	136.2	136.2	134.2	126.2	126.2
85°	81.9	80.1	78.1	72.0	70.1
87.5°	36.1	32.1	28.0	22.1	20.0
90°	1.5	18.4	50.0	46.9	48.4
92.5°	31.7	42.9	44.4	45.9	45.9
95°	74.5	88.7	91.3	91.3	88.7
97.5°	123.9	137.2	142.9	142.9	142.9
100°	181.1	192.8	196.9	196.9	195.4
102.5°	241.3	249.9	255.6	257.1	255.6
105°	307.1	311.2	314.2	316.8	316.8
107.5°	372.4	378.5	378.5	379.5	372.4
110°	435.7	443.8	443.8	443.8	439.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	504.0	512.6	511.1	507.0	504.0
115°	571.3	579.5	576.9	575.4	571.3
117.5°	638.2	649.4	642.2	638.2	634.1
120°	705.5	716.8	705.5	705.5	700.9
122.5°	766.7	781.0	773.8	769.8	766.7
125°	831.0	843.7	839.6	835.1	833.6
127.5°	893.8	909.5	903.9	897.9	893.8
130°	952.4	970.8	968.2	965.2	959.6
132.5°	1018.2	1032.5	1033.5	1026.4	1022.3
135°	1074.9	1090.7	1093.7	1092.2	1088.1
137.5°	1138.1	1150.8	1153.4	1152.4	1146.3
140°	1193.7	1206.5	1213.6	1213.6	1208.0
142.5°	1250.8	1263.6	1267.7	1269.2	1263.6
145°	1304.9	1315.1	1323.3	1324.8	1319.2
147.5°	1353.3	1366.1	1372.3	1374.7	1369.1
150°	1403.4	1412.0	1417.6	1422.2	1417.6
152.5°	1447.7	1456.4	1463.6	1469.2	1463.6
155°	1492.1	1496.2	1500.7	1508.0	1503.3
157.5°	1530.4	1533.5	1536.0	1546.2	1539.1
160°	1564.6	1567.6	1569.1	1577.8	1571.7
162.5°	1596.2	1596.2	1597.7	1607.4	1600.3
165°	1623.2	1621.7	1621.7	1631.9	1624.8
167.5°	1647.7	1643.2	1643.2	1653.3	1646.2
170°	1666.1	1662.0	1660.5	1670.6	1662.0
172.5°	1678.8	1674.7	1673.2	1683.4	1674.7
175°	1689.0	1685.0	1681.9	1692.1	1683.4
177.5°	1694.6	1690.6	1687.5	1696.1	1687.5
180°	1692.1	1692.1	1692.1	1692.1	1692.1

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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	10.79	11.68	11.72	12.63	13.86	10.36	11.25	11.29	12.20	13.43
	3H	12.44	13.24	13.39	14.20	15.45	11.98	12.77	12.92	13.73	14.98
	4H	13.03	13.78	13.98	14.74	16.01	12.56	13.31	13.52	14.28	15.54
	6H	13.42	14.11	14.39	15.08	16.36	12.95	13.65	13.92	14.61	15.89
	8H	13.52	14.18	14.50	15.17	16.44	13.05	13.71	14.03	14.70	15.97
	12H	13.57	14.20	14.55	15.18	16.47	13.09	13.72	14.08	14.70	16.00
4H	2H	11.25	12.01	12.22	12.97	14.23	10.91	11.66	11.87	12.63	13.89
	3H	13.11	13.74	14.08	14.73	16.01	12.72	13.35	13.69	14.34	15.62
	4H	13.82	14.39	14.80	15.38	16.68	13.42	13.99	14.40	14.98	16.28
	6H	14.33	14.82	15.32	15.83	17.13	13.92	14.42	14.92	15.43	16.73
	8H	14.47	14.93	15.47	15.94	17.25	14.06	14.53	15.06	15.53	16.84
	12H	14.54	14.96	15.56	15.98	17.30	14.13	14.54	15.14	15.56	16.88
8H	4H	14.01	14.48	15.01	15.48	16.79	13.66	14.12	14.65	15.12	16.43
	6H	14.63	15.02	15.65	16.06	17.37	14.28	14.66	15.30	15.70	17.01
	8H	14.85	15.19	15.88	16.22	17.55	14.48	14.82	15.51	15.85	17.18
	12H	14.97	15.27	16.01	16.30	17.67	14.60	14.89	15.63	15.92	17.29
12H	4H	14.00	14.42	15.01	15.44	16.75	13.65	14.07	14.66	15.09	16.41
	6H	14.66	15.00	15.69	16.03	17.36	14.31	14.65	15.34	15.68	17.01
	8H	14.90	15.20	15.93	16.22	17.60	14.55	14.84	15.58	15.87	17.24