

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: P926515

Luminaire Tested: DFN2DIP-TR4F0-080D050US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926515
REPORT IS A COMBINATION OF REPORTS P901915 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-080D050US950-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

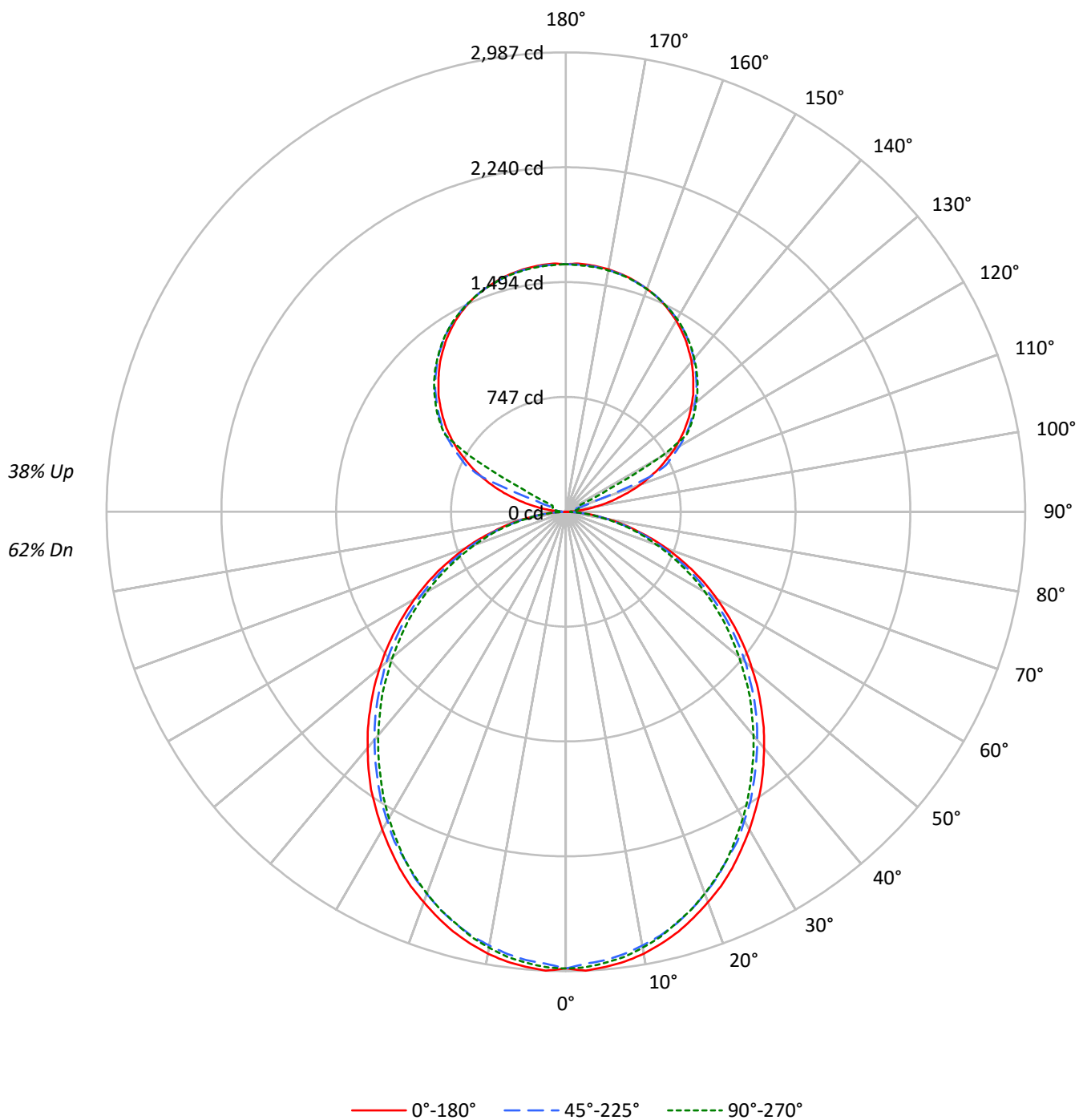
Lumens per Lamp: N/A
Luminaire Lumens: 12278.0 lumens
Efficiency: N/A
Efficacy: 108.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 112.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
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
RCR																					
0	110	110	110	110		103	103	103	103		90	90	90		78	78	78		67	67	67
1	100	96	92	88		94	90	87	83		79	76	74		69	67	65		59	58	56
2	91	84	78	72		85	79	73	69		69	65	61		60	57	54		52	50	48
3	83	74	66	60		78	69	63	57		61	56	51		53	49	46		46	43	40
4	76	65	57	51		71	61	54	49		54	48	44		47	43	39		41	38	35
5	70	58	50	44		65	55	47	42		49	43	38		43	38	34		37	33	30
6	65	52	44	38		60	49	42	36		44	38	33		39	34	30		34	30	27
7	60	47	39	34		56	45	37	32		40	34	29		35	30	27		31	27	24
8	56	43	35	30		52	41	34	29		36	30	26		32	27	24		28	24	21
9	52	39	32	27		49	37	30	26		33	28	23		30	25	21		26	22	19
10	49	36	29	24		45	34	28	23		31	25	21		27	23	19		24	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2359	2359	2359
5°	2363	2326	2342
10°	2344	2295	2310
15°	2309	2257	2261
20°	2263	2205	2210
25°	2217	2142	2151
30°	2159	2083	2076
35°	2104	2014	1997
40°	2036	1945	1922
45°	1968	1875	1846
50°	1895	1802	1756
55°	1817	1717	1675
60°	1730	1616	1581
65°	1635	1512	1470
70°	1513	1385	1351
75°	1345	1233	1241
80°	1143	1040	1031
85°	827	706	683

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1968 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	279.5	2.3
10°-20°	786.4	6.4
20°-30°	1155.7	9.4
30°-40°	1342.3	10.9
40°-50°	1340.6	10.9
50°-60°	1169.0	9.5
60°-70°	864.1	7.0
70°-80°	488.9	4.0
80°-90°	131.9	1.1
90°-100°	53.1	0.4
100°-110°	197.9	1.6
110°-120°	524.8	4.3
120°-130°	870.4	7.1
130°-140°	924.6	7.5
140°-150°	859.3	7.0
150°-160°	690.9	5.6
160°-170°	445.2	3.6
170°-180°	153.2	1.2
0°-30°	2221.6	18.1
0°-40°	3563.9	29.0
0°-60°	6073.6	49.5
0°-90°	7558.5	61.6
90°-120°	775.8	6.3
90°-150°	3430.2	27.9
90°-180°	4719.0	38.4
0°-180°	12278.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2970	2970	2970	2970	2970	
5°	2970	2958	2927	2950	2944	282
15°	2827	2810	2773	2784	2770	796
25°	2558	2536	2487	2493	2487	1177
35°	2207	2179	2133	2116	2102	1378
45°	1796	1776	1733	1702	1691	1386
55°	1359	1342	1308	1274	1259	1215
65°	917	900	871	845	831	906
75°	480	474	460	443	448	512
85°	117	114	112	103	100	130
90°	1	14	23	29	31	11
95°	76	37	45	51	50	90
105°	354	389	71	84	88	378
115°	670	690	719	179	96	659
125°	947	962	984	992	996	845
135°	1172	1191	1201	1213	1210	905
145°	1359	1358	1378	1386	1380	850
155°	1497	1486	1500	1507	1498	690
165°	1577	1570	1574	1582	1574	446
175°	1613	1605	1608	1616	1604	154
180°	1610	1610	1610	1610	1610	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2969.6	2969.6	2969.6	2969.6	2969.6
2.5°	2986.9	2972.7	2941.2	2969.6	2964.2
5°	2969.6	2958.4	2927.0	2949.7	2944.2
7.5°	2949.7	2932.7	2901.2	2924.2	2918.5
10°	2918.5	2898.4	2864.2	2886.9	2878.5
12.5°	2875.5	2858.5	2824.2	2838.4	2832.7
15°	2827.0	2810.0	2772.7	2784.2	2770.0
17.5°	2767.0	2750.0	2712.7	2727.0	2712.7
20°	2701.3	2684.3	2644.3	2652.8	2641.5
22.5°	2635.8	2610.0	2572.7	2572.7	2567.0
25°	2558.5	2535.8	2487.4	2492.8	2487.4
27.5°	2472.8	2452.8	2415.8	2407.3	2393.1
30°	2387.4	2364.3	2321.7	2313.2	2301.6
32.5°	2295.9	2278.9	2233.1	2215.9	2204.4
35°	2207.4	2178.9	2133.1	2115.9	2101.7
37.5°	2107.4	2081.6	2035.9	2015.9	2001.7
40°	2004.7	1981.6	1936.0	1910.5	1898.9
42.5°	1904.8	1881.7	1836.3	1807.4	1790.6
45°	1796.3	1776.3	1733.2	1702.0	1690.6
47.5°	1690.6	1670.5	1624.8	1593.3	1576.3
50°	1579.1	1564.8	1524.8	1484.8	1470.6
52.5°	1470.6	1450.6	1413.6	1382.2	1362.1
55°	1359.4	1342.1	1307.9	1273.7	1259.4
57.5°	1247.9	1233.7	1196.4	1162.2	1150.6
60°	1136.4	1125.2	1085.2	1053.7	1045.2
62.5°	1027.9	1008.0	979.5	951.0	939.5
65°	916.8	899.5	871.0	845.2	831.0
67.5°	802.5	788.0	762.5	742.6	731.1
70°	696.8	685.3	659.6	639.6	628.3
72.5°	588.3	576.9	562.6	542.6	534.1
75°	479.6	474.1	459.6	442.7	448.4
77.5°	382.6	371.1	365.4	356.9	348.4
80°	285.7	282.7	276.9	268.5	262.6
82.5°	194.2	194.2	191.5	179.9	179.9
85°	117.0	114.2	111.5	102.7	100.0
87.5°	51.5	45.8	40.0	31.5	28.5
90°	1.1	13.9	23.3	29.2	31.4
92.5°	29.2	24.5	28.0	30.3	31.4
95°	75.7	37.2	45.4	51.3	50.1
97.5°	136.2	40.8	59.3	63.0	64.0
100°	206.3	46.7	66.4	75.7	78.0
102.5°	283.1	280.8	68.8	81.5	85.1
105°	354.1	389.1	71.1	83.9	88.5
107.5°	436.8	465.8	73.5	86.1	90.9
110°	516.1	540.4	203.9	87.4	92.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	590.6	611.5	591.8	89.7	93.2
115°	669.8	689.6	718.7	179.4	95.6
117.5°	738.5	761.8	781.7	614.9	309.9
120°	815.4	832.8	853.8	867.9	710.5
122.5°	880.5	899.2	922.6	929.6	930.8
125°	946.9	962.2	984.3	992.4	996.0
127.5°	1007.5	1023.8	1041.5	1053.0	1054.2
130°	1064.7	1083.4	1096.1	1108.9	1107.9
132.5°	1123.0	1138.1	1150.8	1161.4	1160.3
135°	1171.9	1190.6	1200.9	1212.7	1210.3
137.5°	1223.0	1237.1	1248.8	1260.4	1257.0
140°	1273.1	1282.6	1295.2	1305.7	1300.0
142.5°	1315.2	1323.4	1338.5	1347.7	1341.9
145°	1359.4	1358.2	1378.0	1386.2	1380.3
147.5°	1397.8	1394.3	1414.1	1419.9	1415.4
150°	1435.1	1427.0	1445.6	1452.6	1446.7
152.5°	1466.5	1457.2	1474.7	1481.8	1473.5
155°	1496.8	1486.4	1500.4	1507.3	1498.1
157.5°	1521.2	1512.0	1522.5	1530.7	1521.2
160°	1542.3	1535.3	1542.3	1549.2	1541.1
162.5°	1560.8	1554.0	1559.7	1567.9	1557.4
165°	1577.2	1570.3	1573.7	1581.8	1573.7
167.5°	1590.0	1583.0	1586.6	1594.7	1584.2
170°	1600.5	1593.5	1595.9	1604.0	1593.5
172.5°	1607.5	1600.5	1602.9	1611.0	1600.5
175°	1613.3	1605.1	1607.5	1615.6	1604.0
177.5°	1615.6	1607.5	1608.7	1616.8	1606.3
180°	1609.8	1609.8	1609.8	1609.8	1609.8

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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	11.25	12.23	12.10	13.10	14.20	10.82	11.80	11.67	12.67	13.77
	3H	12.92	13.80	13.78	14.68	15.80	12.45	13.32	13.31	14.21	15.33
	4H	13.51	14.34	14.39	15.23	16.36	13.04	13.87	13.92	14.76	15.89
	6H	13.92	14.68	14.81	15.58	16.72	13.44	14.21	14.34	15.10	16.25
	8H	14.03	14.75	14.93	15.67	16.81	13.55	14.28	14.45	15.19	16.34
	12H	14.08	14.77	14.98	15.68	16.85	13.60	14.29	14.50	15.20	16.37
4H	2H	11.73	12.56	12.61	13.44	14.58	11.38	12.21	12.27	13.10	14.23
	3H	13.60	14.29	14.50	15.22	16.36	13.21	13.90	14.11	14.82	15.97
	4H	14.32	14.95	15.23	15.87	17.04	13.92	14.55	14.82	15.46	16.64
	6H	14.84	15.39	15.77	16.33	17.50	14.44	14.98	15.36	15.92	17.09
	8H	15.00	15.50	15.92	16.44	17.63	14.58	15.09	15.51	16.03	17.22
	12H	15.07	15.53	16.02	16.49	17.68	14.65	15.11	15.60	16.06	17.26
8H	4H	14.53	15.04	15.45	15.97	17.16	14.17	14.68	15.09	15.61	16.80
	6H	15.16	15.59	16.12	16.56	17.75	14.80	15.22	15.75	16.20	17.39
	8H	15.39	15.76	16.35	16.73	17.93	15.02	15.39	15.98	16.36	17.56
	12H	15.52	15.85	16.49	16.81	18.07	15.14	15.47	16.10	16.43	17.68
12H	4H	14.52	14.98	15.46	15.93	17.13	14.17	14.63	15.11	15.58	16.77
	6H	15.20	15.57	16.16	16.54	17.74	14.84	15.22	15.80	16.18	17.39
	8H	15.44	15.77	16.41	16.73	17.99	15.09	15.41	16.05	16.37	17.63