

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: P914244

Luminaire Tested: DFN2DIP-PN4F0-090D060US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914244
REPORT IS A COMBINATION OF REPORTS P899655 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-090D060US927-FLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

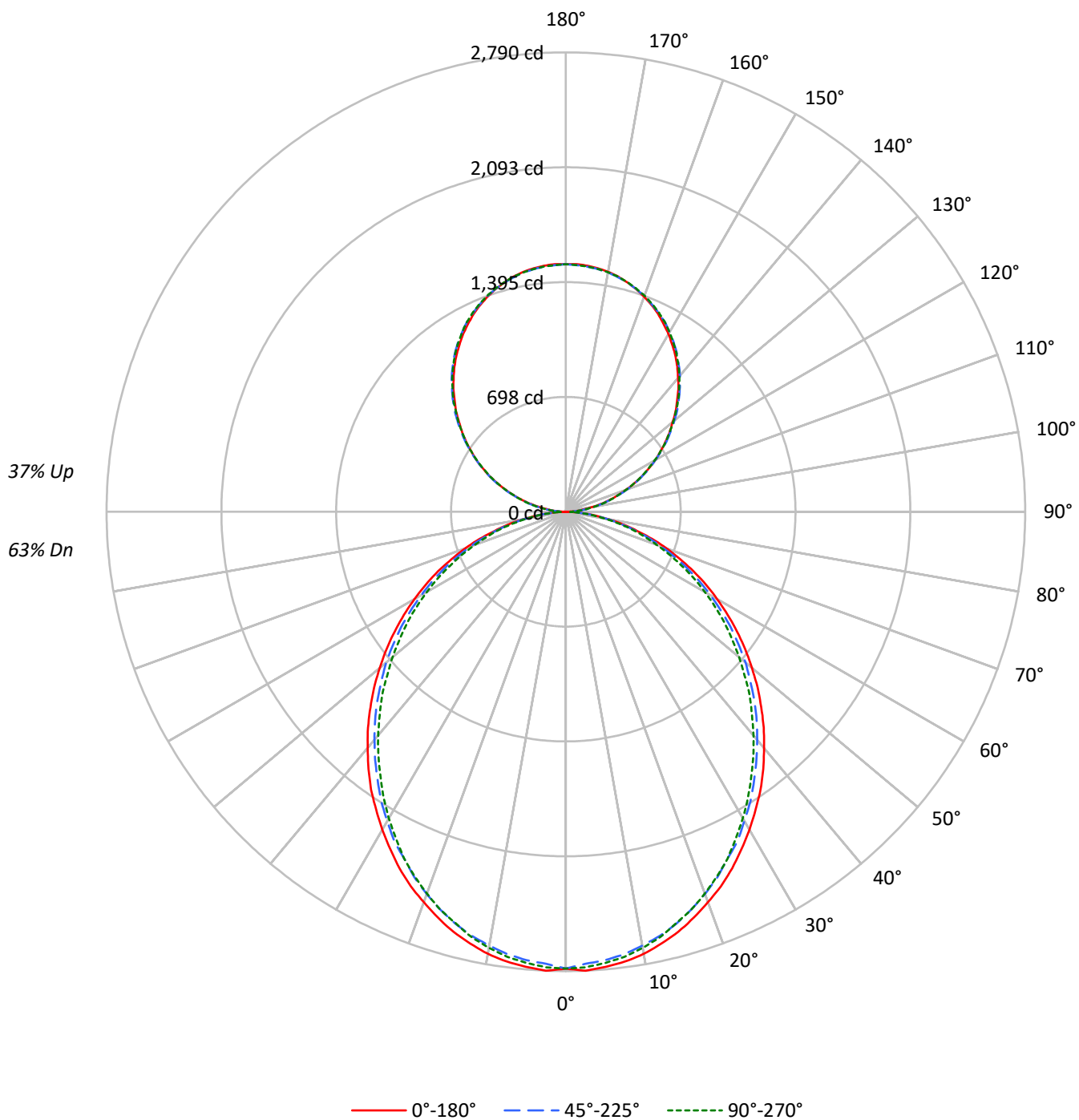
Lumens per Lamp: N/A
Luminaire Lumens: 11264.8 lumens
Efficiency: N/A
Efficacy: 84.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 133.5
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	110	110	110	110	103	103	103	103	90	90	90	79	79	79	68	68	68
1	101	96	92	89	94	90	87	84	79	77	74	69	67	66	60	59	57
2	92	84	78	72	86	79	73	69	70	65	62	61	58	55	53	50	48
3	84	74	66	60	78	70	63	58	61	56	52	54	50	46	47	44	41
4	77	66	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35
5	70	58	50	44	66	55	48	42	49	43	38	43	38	35	38	34	31
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27
7	60	48	39	34	56	45	38	32	40	34	30	36	31	27	31	27	24
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22
9	52	40	32	27	49	38	30	26	34	28	24	30	25	22	27	23	20
10	49	36	29	24	46	35	28	23	31	25	21	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2025	2025	2025
5°	2028	1997	2011
10°	2012	1970	1984
15°	1982	1938	1942
20°	1942	1893	1898
25°	1903	1840	1848
30°	1853	1790	1785
35°	1805	1731	1717
40°	1747	1672	1653
45°	1689	1612	1588
50°	1626	1550	1512
55°	1560	1477	1442
60°	1485	1391	1362
65°	1403	1302	1268
70°	1299	1194	1167
75°	1154	1065	1074
80°	981	899	896
85°	709	614	599

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1689 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	261.1	2.3
10°-20°	734.7	6.5
20°-30°	1079.6	9.6
30°-40°	1253.9	11.1
40°-50°	1252.4	11.1
50°-60°	1092.1	9.7
60°-70°	807.3	7.2
70°-80°	456.7	4.1
80°-90°	124.8	1.1
90°-100°	93.0	0.8
100°-110°	295.6	2.6
110°-120°	505.8	4.5
120°-130°	665.2	5.9
130°-140°	746.6	6.6
140°-150°	732.2	6.5
150°-160°	614.2	5.5
160°-170°	407.3	3.6
170°-180°	142.4	1.3
0°-30°	2075.4	18.4
0°-40°	3329.4	29.6
0°-60°	5673.8	50.4
0°-90°	7062.6	62.7
90°-120°	894.4	7.9
90°-150°	3038.4	27.0
90°-180°	4202.0	37.3
0°-180°	11264.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2774	2774	2774	2774	2774	
5°	2774	2764	2734	2756	2750	263
15°	2641	2625	2590	2601	2588	744
25°	2390	2369	2324	2329	2324	1100
35°	2062	2036	1993	1977	1963	1288
45°	1678	1659	1619	1590	1579	1295
55°	1270	1254	1222	1190	1176	1135
65°	856	840	814	790	776	847
75°	448	443	429	414	419	478
85°	109	107	104	96	93	122
90°	1	16	44	42	43	11
95°	66	79	81	81	79	74
105°	273	276	279	282	282	288
115°	508	515	512	511	508	502
125°	738	750	746	742	740	660
135°	955	969	972	970	967	738
145°	1159	1168	1176	1177	1172	724
155°	1326	1329	1333	1340	1336	610
165°	1442	1441	1441	1450	1443	407
175°	1500	1497	1494	1503	1496	143
180°	1503	1503	1503	1503	1503	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2774.1	2774.1	2774.1	2774.1	2774.1
2.5°	2790.3	2777.0	2747.6	2774.1	2769.1
5°	2774.1	2763.7	2734.3	2755.5	2750.4
7.5°	2755.5	2739.7	2710.2	2731.8	2726.4
10°	2726.4	2707.7	2675.7	2696.9	2689.0
12.5°	2686.1	2670.3	2638.4	2651.6	2646.3
15°	2640.9	2625.1	2590.2	2601.0	2587.7
17.5°	2584.8	2569.0	2534.2	2547.5	2534.2
20°	2523.4	2507.6	2470.2	2478.1	2467.6
22.5°	2462.3	2438.3	2403.4	2403.4	2398.0
25°	2390.1	2368.9	2323.6	2328.7	2323.6
27.5°	2310.0	2291.3	2256.8	2248.9	2235.6
30°	2230.2	2208.7	2168.8	2160.8	2150.1
32.5°	2144.8	2128.9	2086.1	2070.0	2059.3
35°	2062.1	2035.5	1992.7	1976.7	1963.3
37.5°	1968.7	1944.6	1901.9	1883.3	1869.9
40°	1872.7	1851.2	1808.5	1784.7	1774.0
42.5°	1779.3	1757.8	1715.4	1688.5	1672.7
45°	1678.0	1659.4	1619.1	1590.0	1579.3
47.5°	1579.3	1560.6	1517.8	1488.4	1472.6
50°	1475.1	1461.8	1424.4	1387.1	1373.8
52.5°	1373.8	1355.1	1320.6	1291.2	1272.5
55°	1269.9	1253.8	1221.8	1189.9	1176.5
57.5°	1165.8	1152.5	1117.7	1085.7	1074.9
60°	1061.6	1051.1	1013.8	984.4	976.4
62.5°	960.3	941.6	915.0	888.4	877.7
65°	856.4	840.3	813.6	789.6	776.3
67.5°	749.7	736.2	712.3	693.7	682.9
70°	650.9	640.2	616.2	597.5	587.0
72.5°	549.6	538.8	525.5	506.9	499.0
75°	448.1	442.9	429.4	413.5	418.9
77.5°	357.4	346.7	341.4	333.4	325.5
80°	266.9	264.0	258.6	250.7	245.4
82.5°	181.4	181.4	178.9	168.1	168.1
85°	109.2	106.7	104.2	95.9	93.4
87.5°	48.1	42.7	37.4	29.5	26.6
90°	1.3	16.3	44.4	41.7	43.0
92.5°	28.1	38.1	39.5	40.8	40.8
95°	66.1	78.8	81.1	81.1	78.8
97.5°	110.1	121.9	126.9	126.9	126.9
100°	160.9	171.3	174.9	174.9	173.6
102.5°	214.4	222.0	227.0	228.4	227.0
105°	272.8	276.5	279.2	281.5	281.5
107.5°	330.8	336.3	336.3	337.2	330.8
110°	387.1	394.3	394.3	394.3	390.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	447.7	455.4	454.1	450.4	447.7
115°	507.6	514.8	512.5	511.2	507.6
117.5°	567.0	576.9	570.5	567.0	563.3
120°	626.8	636.8	626.8	626.8	622.7
122.5°	681.1	693.8	687.5	683.9	681.1
125°	738.2	749.6	745.9	741.9	740.5
127.5°	794.0	808.0	803.0	797.6	794.0
130°	846.1	862.4	860.2	857.5	852.5
132.5°	904.6	917.3	918.1	911.8	908.2
135°	954.9	968.9	971.6	970.3	966.6
137.5°	1011.1	1022.4	1024.7	1023.7	1018.3
140°	1060.5	1071.8	1078.2	1078.2	1073.2
142.5°	1111.2	1122.5	1126.2	1127.5	1122.5
145°	1159.3	1168.3	1175.6	1176.9	1172.0
147.5°	1202.3	1213.6	1219.1	1221.3	1216.3
150°	1246.7	1254.4	1259.4	1263.4	1259.4
152.5°	1286.1	1293.9	1300.2	1305.2	1300.2
155°	1325.6	1329.2	1333.2	1339.7	1335.5
157.5°	1359.5	1362.3	1364.5	1373.6	1367.3
160°	1390.0	1392.7	1394.0	1401.7	1396.3
162.5°	1418.0	1418.0	1419.4	1428.0	1421.6
165°	1442.0	1440.7	1440.7	1449.8	1443.4
167.5°	1463.8	1459.8	1459.8	1468.8	1462.4
170°	1480.1	1476.5	1475.1	1484.2	1476.5
172.5°	1491.4	1487.8	1486.4	1495.5	1487.8
175°	1500.5	1496.9	1494.1	1503.2	1495.5
177.5°	1505.5	1501.9	1499.1	1506.8	1499.1
180°	1503.2	1503.2	1503.2	1503.2	1503.2

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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	10.83	11.81	11.66	12.68	13.75	10.38	11.37	11.22	12.24	13.31
	3H	12.50	13.38	13.35	14.26	15.36	12.01	12.90	12.87	13.77	14.88
	4H	13.09	13.93	13.96	14.81	15.92	12.61	13.44	13.47	14.32	15.44
	6H	13.50	14.27	14.38	15.16	16.29	13.01	13.78	13.89	14.67	15.80
	8H	13.61	14.35	14.50	15.25	16.38	13.12	13.86	14.01	14.76	15.89
	12H	13.66	14.37	14.56	15.26	16.42	13.17	13.87	14.06	14.76	15.92
4H	2H	11.30	12.14	12.18	13.02	14.13	10.95	11.79	11.82	12.67	13.78
	3H	13.18	13.88	14.07	14.79	15.92	12.78	13.48	13.66	14.39	15.52
	4H	13.90	14.54	14.80	15.45	16.61	13.49	14.12	14.38	15.03	16.19
	6H	14.43	14.98	15.34	15.91	17.07	14.00	14.56	14.92	15.49	16.64
	8H	14.58	15.10	15.50	16.02	17.20	14.15	14.67	15.07	15.59	16.77
	12H	14.66	15.13	15.60	16.07	17.25	14.22	14.69	15.16	15.63	16.81
8H	4H	14.11	14.63	15.02	15.55	16.72	13.74	14.26	14.65	15.18	16.35
	6H	14.75	15.18	15.69	16.14	17.32	14.37	14.80	15.32	15.77	16.94
	8H	14.97	15.35	15.93	16.31	17.50	14.59	14.97	15.54	15.93	17.11
	12H	15.11	15.45	16.07	16.40	17.64	14.71	15.05	15.67	16.00	17.23
12H	4H	14.10	14.57	15.04	15.51	16.69	13.74	14.21	14.67	15.15	16.33
	6H	14.78	15.16	15.73	16.12	17.31	14.42	14.80	15.37	15.75	16.94
	8H	15.03	15.37	15.99	16.32	17.55	14.66	14.99	15.61	15.94	17.18

END OF REPORT