

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: P914322

Luminaire Tested: DFN2DIP-PN4F0-110D070US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914322
REPORT IS A COMBINATION OF REPORTS P899678 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-110D070US927-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

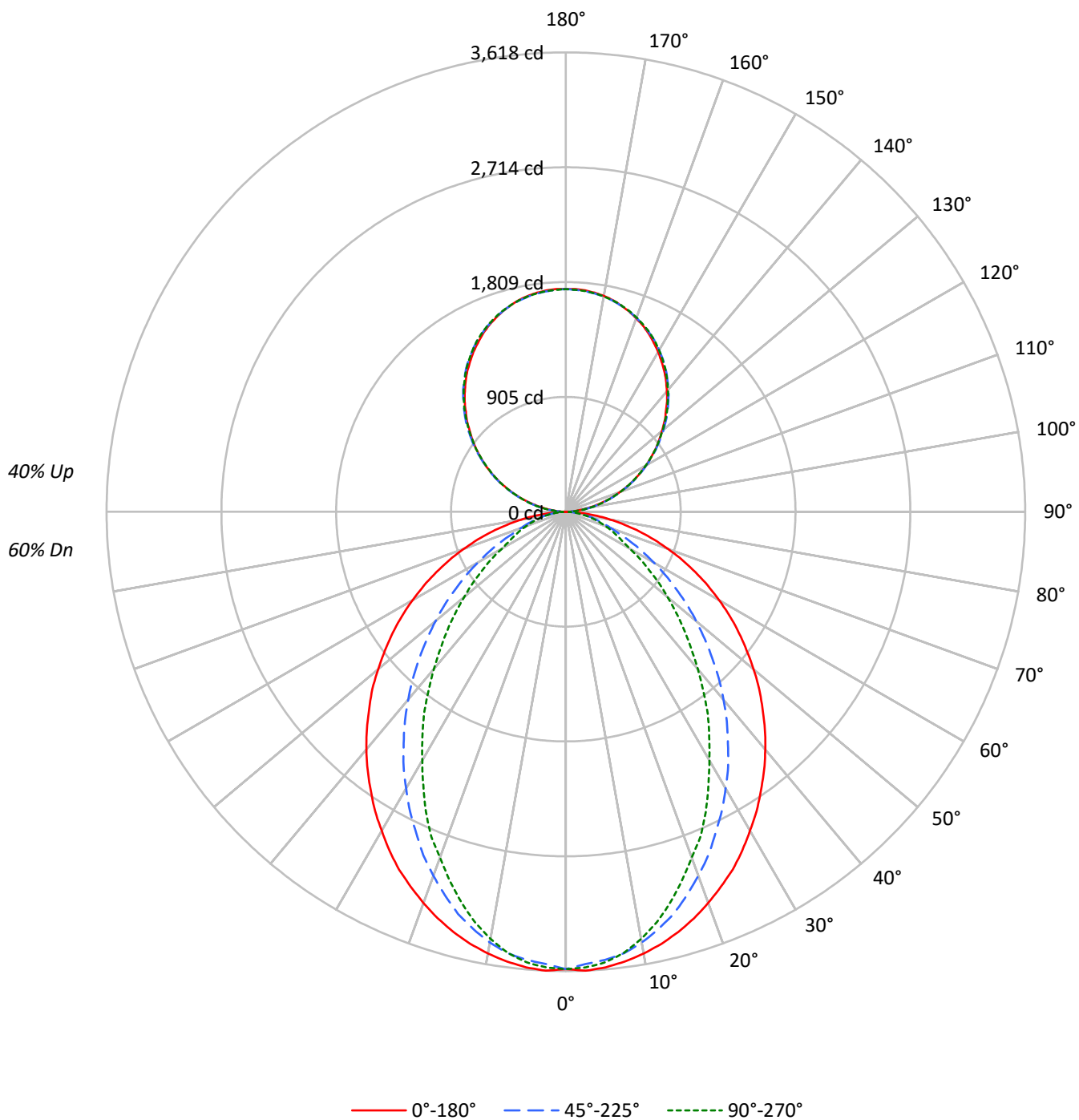
Lumens per Lamp: N/A
Luminaire Lumens: 12314.5 lumens
Efficiency: N/A
Efficacy: 73.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 166.8
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	110	110	110	110	102	102	102	102	89	89	89	77	77	77	65	65	65
1	101	96	93	89	94	90	87	84	79	77	74	68	67	65	59	58	56
2	92	85	79	74	86	80	74	70	70	66	63	61	58	55	52	50	48
3	84	75	68	62	79	71	64	59	62	57	53	54	51	47	47	44	42
4	78	67	59	53	72	63	56	51	56	50	46	49	45	41	42	39	37
5	71	60	52	46	67	57	49	44	50	44	40	44	40	36	38	35	32
6	66	54	46	40	62	51	44	39	45	40	35	40	36	32	35	32	29
7	61	49	41	36	57	46	39	34	41	36	31	37	32	29	32	29	26
8	57	45	37	32	53	42	36	31	38	32	28	34	29	26	30	26	23
9	53	41	34	29	50	39	32	28	35	29	25	31	27	23	28	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2629	2629	2629
5°	2633	2588	2604
10°	2607	2537	2520
15°	2571	2454	2389
20°	2524	2338	2229
25°	2475	2209	2074
30°	2410	2077	1877
35°	2346	1934	1705
40°	2281	1786	1507
45°	2205	1623	1327
50°	2127	1457	1152
55°	2045	1280	983
60°	1951	1096	810
65°	1842	908	729
70°	1710	732	661
75°	1545	646	602
80°	1305	543	524
85°	909	365	397

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2205 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	337.5	2.7
10°-20°	926.6	7.5
20°-30°	1300.9	10.6
30°-40°	1418.1	11.5
40°-50°	1303.4	10.6
50°-60°	1023.6	8.3
60°-70°	666.3	5.4
70°-80°	343.0	2.8
80°-90°	92.5	0.8
90°-100°	108.5	0.9
100°-110°	344.8	2.8
110°-120°	590.1	4.8
120°-130°	776.1	6.3
130°-140°	871.1	7.1
140°-150°	854.2	6.9
150°-160°	716.6	5.8
160°-170°	475.2	3.9
170°-180°	166.1	1.3
0°-30°	2565.1	20.8
0°-40°	3983.1	32.3
0°-60°	6310.1	51.2
0°-90°	7411.9	60.2
90°-120°	1043.4	8.5
90°-150°	3544.8	28.8
90°-180°	4903.0	39.8
0°-180°	12314.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3602	3602	3602	3602	3602	
5°	3602	3585	3543	3572	3562	341
15°	3426	3390	3279	3217	3184	965
25°	3109	3005	2790	2656	2607	1430
35°	2679	2513	2226	2021	1949	1677
45°	2190	1972	1630	1398	1320	1691
55°	1665	1411	1059	864	802	1488
65°	1124	860	567	456	446	1115
75°	600	371	261	238	235	634
85°	140	72	62	62	62	161
90°	2	19	52	49	50	12
95°	77	92	95	95	92	86
105°	318	322	326	328	328	336
115°	592	601	598	596	592	586
125°	861	874	870	866	864	770
135°	1114	1130	1134	1132	1128	861
145°	1352	1363	1372	1373	1367	845
155°	1546	1551	1556	1563	1558	712
165°	1682	1681	1681	1691	1684	475
175°	1751	1746	1743	1754	1745	166
180°	1754	1754	1754	1754	1754	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3601.5	3601.5	3601.5	3601.5	3601.5
2.5°	3617.7	3601.5	3565.5	3598.4	3591.8
5°	3601.5	3585.3	3542.7	3572.1	3562.4
7.5°	3572.1	3552.7	3507.1	3519.9	3503.6
10°	3533.0	3510.2	3445.2	3435.1	3415.8
12.5°	3484.3	3454.9	3366.7	3347.3	3311.3
15°	3425.5	3389.5	3278.8	3217.0	3184.4
17.5°	3357.0	3304.8	3167.9	3096.2	3044.0
20°	3278.8	3213.5	3050.6	2969.3	2897.4
22.5°	3194.2	3119.1	2930.0	2819.3	2770.5
25°	3109.4	3005.0	2789.9	2656.4	2607.3
27.5°	3008.5	2897.4	2659.5	2506.3	2431.3
30°	2900.9	2776.8	2516.0	2350.0	2261.8
32.5°	2796.5	2646.4	2379.4	2183.7	2102.1
35°	2679.2	2512.9	2226.3	2020.9	1948.9
37.5°	2565.2	2385.7	2082.7	1857.6	1776.4
40°	2444.4	2249.1	1932.7	1701.3	1616.6
42.5°	2320.6	2112.1	1783.0	1541.6	1460.3
45°	2190.3	1971.7	1629.8	1398.0	1319.9
47.5°	2066.5	1835.2	1483.1	1251.4	1179.9
50°	1929.5	1698.2	1339.7	1114.5	1046.4
52.5°	1795.7	1551.2	1202.7	987.6	925.7
55°	1665.3	1411.2	1059.1	863.8	801.9
57.5°	1531.9	1271.1	932.2	749.7	697.4
60°	1395.0	1134.2	798.4	632.5	580.3
62.5°	1261.5	1000.8	684.4	528.1	502.1
65°	1124.5	860.3	567.1	456.5	446.4
67.5°	994.2	730.0	456.5	400.8	391.1
70°	857.2	603.1	377.9	345.5	332.3
72.5°	726.8	485.5	316.1	290.1	283.5
75°	599.6	371.4	260.7	237.9	234.8
77.5°	472.7	263.9	205.4	192.3	185.7
80°	355.1	189.2	156.3	143.5	143.5
82.5°	247.6	127.2	107.6	101.0	101.0
85°	140.1	71.6	61.9	61.9	61.9
87.5°	52.2	25.9	25.9	22.8	22.8
90°	1.6	19.0	51.8	48.6	50.2
92.5°	32.8	44.4	46.0	47.6	47.6
95°	77.2	92.0	94.7	94.7	92.0
97.5°	128.5	142.2	148.1	148.1	148.1
100°	187.7	199.9	204.1	204.1	202.5
102.5°	250.1	259.0	264.9	266.5	264.9
105°	318.3	322.5	325.7	328.4	328.4
107.5°	386.0	392.3	392.3	393.4	386.0
110°	451.5	460.0	460.0	460.0	455.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	522.4	531.4	529.8	525.5	522.4
115°	592.2	600.6	598.0	596.4	592.2
117.5°	661.4	673.0	665.7	661.4	657.2
120°	731.2	742.8	731.2	731.2	726.4
122.5°	794.6	809.5	802.1	797.8	794.6
125°	861.3	874.5	870.3	865.5	864.0
127.5°	926.3	942.7	936.9	930.6	926.3
130°	987.1	1006.1	1003.5	1000.4	994.5
132.5°	1055.3	1070.2	1071.2	1063.8	1059.5
135°	1114.0	1130.4	1133.6	1131.9	1127.7
137.5°	1179.6	1192.8	1195.4	1194.4	1188.0
140°	1237.2	1250.5	1257.8	1257.8	1252.0
142.5°	1296.4	1309.6	1313.8	1315.4	1309.6
145°	1352.5	1363.0	1371.5	1373.1	1367.3
147.5°	1402.7	1415.9	1422.3	1424.9	1419.1
150°	1454.5	1463.5	1469.3	1474.1	1469.3
152.5°	1500.5	1509.5	1516.9	1522.7	1516.9
155°	1546.5	1550.7	1555.5	1562.9	1558.1
157.5°	1586.2	1589.4	1592.0	1602.6	1595.1
160°	1621.6	1624.8	1626.3	1635.3	1629.0
162.5°	1654.4	1654.4	1656.0	1666.0	1658.6
165°	1682.4	1680.8	1680.8	1691.4	1683.9
167.5°	1707.8	1703.0	1703.0	1713.6	1706.2
170°	1726.8	1722.6	1721.0	1731.5	1722.6
172.5°	1740.0	1735.7	1734.2	1744.8	1735.7
175°	1750.6	1746.4	1743.2	1753.7	1744.8
177.5°	1756.4	1752.1	1749.0	1758.0	1749.0
180°	1753.7	1753.7	1753.7	1753.7	1753.7

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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	11.41	12.33	12.28	13.22	14.34	7.38	8.30	8.25	9.19	10.31
	3H	13.10	13.92	13.98	14.82	15.97	8.57	9.40	9.46	10.29	11.44
	4H	13.71	14.49	14.61	15.40	16.55	9.03	9.81	9.93	10.71	11.87
	6H	14.14	14.86	15.05	15.77	16.94	9.36	10.07	10.27	10.98	12.15
	8H	14.27	14.95	15.19	15.88	17.05	9.45	10.13	10.37	11.06	12.23
	12H	14.34	14.99	15.26	15.91	17.10	9.50	10.14	10.42	11.06	12.26
4H	2H	11.44	12.22	12.35	13.12	14.28	7.99	8.76	8.89	9.67	10.82
	3H	13.28	13.93	14.20	14.86	16.03	9.35	9.99	10.26	10.93	12.10
	4H	13.98	14.57	14.91	15.50	16.70	9.90	10.49	10.82	11.42	12.61
	6H	14.50	15.01	15.44	15.96	17.16	10.32	10.83	11.26	11.78	12.98
	8H	14.68	15.15	15.62	16.10	17.31	10.45	10.93	11.40	11.87	13.09
	12H	14.78	15.21	15.74	16.17	17.39	10.52	10.95	11.48	11.91	13.13
8H	4H	13.96	14.43	14.90	15.38	16.59	10.19	10.66	11.13	11.61	12.82
	6H	14.53	14.92	15.50	15.91	17.12	10.71	11.10	11.68	12.09	13.30
	8H	14.75	15.09	15.72	16.07	17.30	10.90	11.25	11.88	12.23	13.45
	12H	14.89	15.20	15.87	16.17	17.44	11.03	11.33	12.00	12.30	13.58
12H	4H	13.91	14.34	14.87	15.30	16.52	10.20	10.62	11.16	11.59	12.80
	6H	14.50	14.85	15.48	15.83	17.06	10.76	11.10	11.74	12.08	13.31
	8H	14.73	15.03	15.71	16.01	17.28	10.98	11.28	11.95	12.25	13.53