

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: P907324

Luminaire Tested: DFN2DIP-TR4F0-050D080US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907324
REPORT IS A COMBINATION OF REPORTS P900444 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D080US835-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

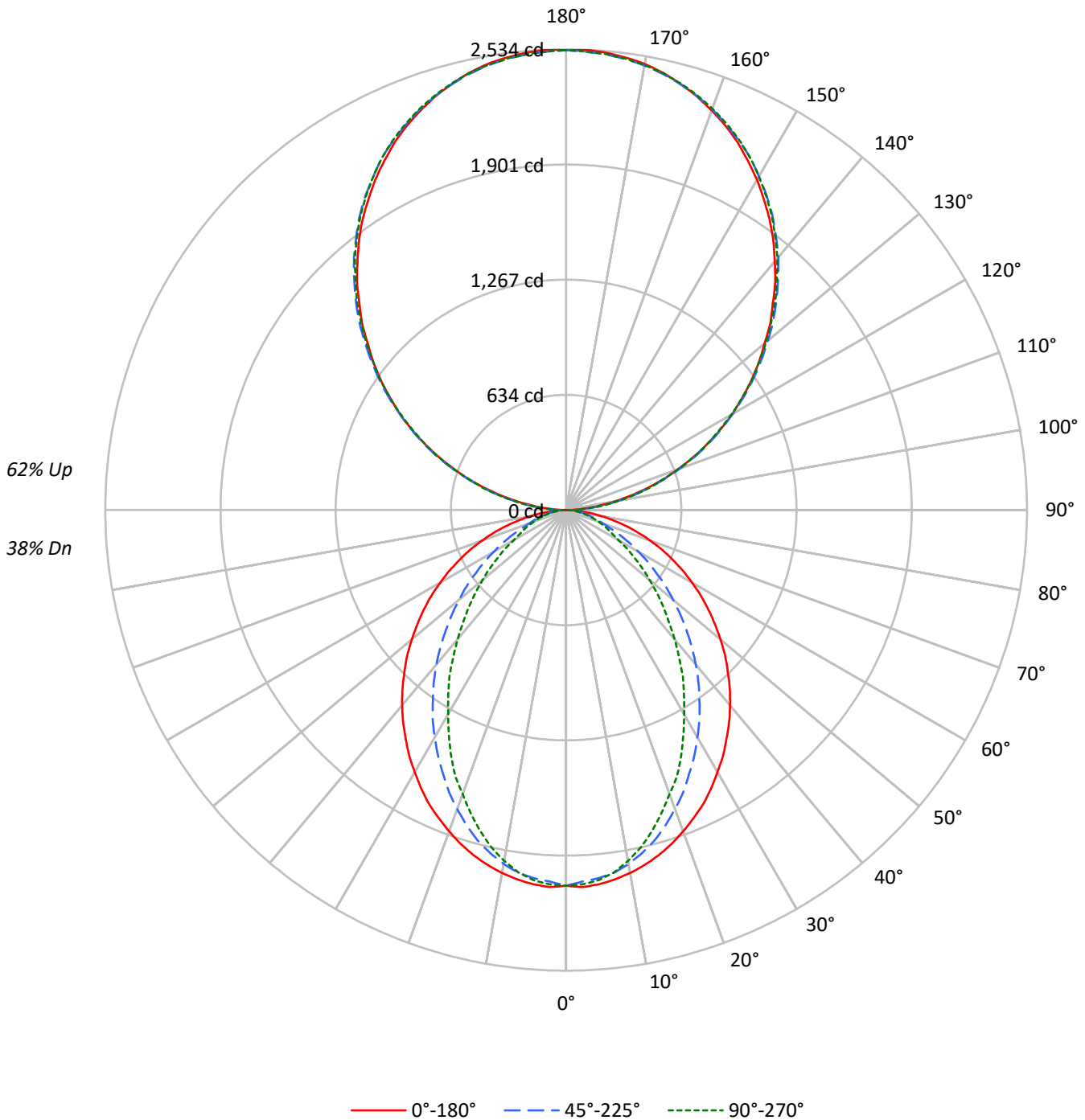
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11330.0 lumens
Efficiency: N/A
Efficacy: 112.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 101.1
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				20	
RC	80				70				50				30				10				0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	104	104	104	104	95	95	95	95	76	76	76	60	60	60	45	45	45	38				38
1	95	91	88	84	86	83	80	77	67	65	63	53	52	50	40	39	38	32				32
2	87	80	74	69	79	73	68	64	59	56	53	47	45	43	36	34	33	28				28
3	80	71	64	58	72	64	58	54	53	48	45	42	39	37	32	30	28	24				24
4	73	63	55	49	66	57	51	46	47	42	39	38	34	32	29	27	25	21				21
5	67	56	48	42	61	51	44	39	42	37	33	34	30	28	26	24	22	18				18
6	62	50	42	37	56	46	39	34	38	33	29	31	27	24	24	21	19	16				16
7	57	45	38	32	52	42	35	30	35	30	26	28	24	22	22	19	17	15				15
8	53	41	34	29	48	38	31	27	32	27	23	26	22	19	20	18	16	13				13
9	49	38	30	26	45	35	28	24	29	24	21	24	20	17	19	16	14	12				12
10	46	35	28	23	42	32	26	21	27	22	19	22	18	16	17	15	13	11				11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1642	1642	1642
5°	1644	1616	1626
10°	1628	1584	1573
15°	1606	1532	1491
20°	1576	1459	1391
25°	1546	1378	1294
30°	1505	1296	1171
35°	1465	1206	1063
40°	1424	1114	939
45°	1377	1012	827
50°	1328	908	717
55°	1277	798	612
60°	1218	682	503
65°	1150	565	453
70°	1068	456	410
75°	965	401	373
80°	815	337	323
85°	569	225	243

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1973 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	193.7	1.7
10°-20°	531.7	4.7
20°-30°	746.5	6.6
30°-40°	813.7	7.2
40°-50°	747.9	6.6
50°-60°	587.3	5.2
60°-70°	382.3	3.4
70°-80°	196.8	1.7
80°-90°	57.4	0.5
90°-100°	156.6	1.4
100°-110°	497.5	4.4
110°-120°	851.3	7.5
120°-130°	1119.6	9.9
130°-140°	1256.7	11.1
140°-150°	1232.3	10.9
150°-160°	1033.7	9.1
160°-170°	685.6	6.1
170°-180°	239.6	2.1
0°-30°	1471.8	13.0
0°-40°	2285.5	20.2
0°-60°	3620.7	32.0
0°-90°	4257.2	37.6
90°-120°	1505.3	13.3
90°-150°	5113.9	45.1
90°-180°	7073.0	62.4
0°-180°	11330.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2066	2066	2066	2066	2066	
5°	2066	2057	2033	2050	2044	196
15°	1966	1945	1881	1846	1827	554
25°	1784	1724	1601	1524	1496	821
35°	1537	1442	1277	1160	1118	962
45°	1257	1131	935	802	757	971
55°	956	810	608	496	460	854
65°	645	494	325	262	256	640
75°	344	213	150	136	135	364
85°	80	41	36	36	36	92
90°	2	28	75	70	72	11
95°	111	133	136	136	133	124
105°	459	465	470	474	474	485
115°	854	866	863	860	854	845
125°	1242	1262	1256	1249	1246	1110
135°	1607	1631	1635	1633	1627	1242
145°	1951	1966	1979	1981	1972	1219
155°	2231	2237	2244	2255	2248	1027
165°	2427	2425	2425	2440	2429	685
175°	2526	2519	2515	2530	2517	240
180°	2530	2530	2530	2530	2530	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2066.5	2066.5	2066.5	2066.5	2066.5
2.5°	2075.8	2066.5	2045.9	2064.7	2060.9
5°	2066.5	2057.2	2032.8	2049.6	2044.1
7.5°	2049.6	2038.5	2012.3	2019.7	2010.3
10°	2027.2	2014.1	1976.8	1971.1	1959.9
12.5°	1999.2	1982.4	1931.8	1920.7	1900.0
15°	1965.5	1944.9	1881.4	1845.9	1827.2
17.5°	1926.2	1896.3	1817.7	1776.6	1746.6
20°	1881.4	1843.9	1750.4	1703.8	1662.5
22.5°	1832.8	1789.7	1681.2	1617.7	1589.7
25°	1784.1	1724.2	1600.8	1524.2	1496.0
27.5°	1726.2	1662.5	1526.0	1438.1	1395.1
30°	1664.5	1593.3	1443.7	1348.4	1297.8
32.5°	1604.6	1518.5	1365.3	1253.0	1206.2
35°	1537.3	1441.9	1277.4	1159.5	1118.3
37.5°	1471.8	1368.9	1195.1	1065.9	1019.3
40°	1402.6	1290.5	1108.9	976.2	927.6
42.5°	1331.6	1211.9	1023.0	884.5	837.9
45°	1256.8	1131.4	935.1	802.2	757.3
47.5°	1185.7	1053.0	851.0	718.1	677.0
50°	1107.2	974.4	768.7	639.5	600.4
52.5°	1030.4	890.1	690.1	566.7	531.2
55°	955.6	809.7	607.7	495.6	460.1
57.5°	879.0	729.4	534.9	430.2	400.2
60°	800.4	650.8	458.1	362.9	332.9
62.5°	723.8	574.2	392.7	303.0	288.1
65°	645.2	493.7	325.4	261.9	256.2
67.5°	570.4	418.9	261.9	230.0	224.4
70°	491.9	346.0	216.9	198.2	190.7
72.5°	417.1	278.6	181.4	166.5	162.7
75°	344.1	213.1	149.6	136.5	134.7
77.5°	271.2	151.4	117.9	110.3	106.5
80°	203.8	108.5	89.7	82.3	82.3
82.5°	142.1	73.0	61.7	57.9	57.9
85°	80.4	41.1	35.5	35.5	35.5
87.5°	30.0	14.9	14.9	13.1	13.1
90°	2.3	27.5	74.8	70.2	72.5
92.5°	47.3	64.1	66.4	68.6	68.6
95°	111.4	132.7	136.5	136.5	132.7
97.5°	185.4	205.2	213.6	213.6	213.6
100°	270.8	288.3	294.4	294.4	292.1
102.5°	360.8	373.8	382.1	384.4	382.1
105°	459.2	465.3	469.9	473.7	473.7
107.5°	556.8	566.0	566.0	567.5	556.8
110°	651.4	663.6	663.6	663.6	657.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	753.6	766.6	764.3	758.2	753.6
115°	854.3	866.5	862.7	860.4	854.3
117.5°	954.2	971.0	960.3	954.2	948.1
120°	1054.9	1071.7	1054.9	1054.9	1048.0
122.5°	1146.4	1167.8	1157.1	1151.0	1146.4
125°	1242.5	1261.6	1255.5	1248.6	1246.4
127.5°	1336.4	1360.0	1351.6	1342.5	1336.4
130°	1424.1	1451.5	1447.7	1443.2	1434.8
132.5°	1522.5	1543.8	1545.4	1534.7	1528.6
135°	1607.1	1630.8	1635.4	1633.1	1627.0
137.5°	1701.7	1720.8	1724.6	1723.1	1713.9
140°	1784.9	1803.9	1814.6	1814.6	1806.2
142.5°	1870.3	1889.4	1895.5	1897.8	1889.4
145°	1951.2	1966.4	1978.6	1980.9	1972.5
147.5°	2023.6	2042.7	2051.8	2055.7	2047.3
150°	2098.4	2111.3	2119.7	2126.6	2119.7
152.5°	2164.7	2177.7	2188.4	2196.8	2188.4
155°	2231.1	2237.2	2244.1	2254.7	2247.9
157.5°	2288.3	2292.9	2296.7	2311.9	2301.3
160°	2339.4	2344.0	2346.3	2359.2	2350.1
162.5°	2386.7	2386.7	2389.0	2403.5	2392.8
165°	2427.1	2424.8	2424.8	2440.1	2429.4
167.5°	2463.7	2456.9	2456.9	2472.1	2461.4
170°	2491.2	2485.1	2482.8	2498.1	2485.1
172.5°	2510.3	2504.2	2501.9	2517.1	2504.2
175°	2525.5	2519.4	2514.8	2530.1	2517.1
177.5°	2533.9	2527.8	2523.2	2536.2	2523.2
180°	2530.1	2530.1	2530.1	2530.1	2530.1



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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	7.58	8.32	8.64	9.38	10.82	3.55	4.29	4.62	5.35	6.79
	3H	9.25	9.91	10.32	10.98	12.44	4.73	5.39	5.81	6.47	7.92
	4H	9.85	10.48	10.94	11.55	13.02	5.18	5.81	6.26	6.88	8.34
	6H	10.27	10.84	11.36	11.92	13.40	5.50	6.07	6.59	7.15	8.63
	8H	10.39	10.94	11.49	12.03	13.50	5.59	6.13	6.68	7.22	8.70
	12H	10.45	10.97	11.55	12.06	13.55	5.63	6.15	6.73	7.23	8.73
4H	2H	7.59	8.21	8.68	9.28	10.75	4.14	4.76	5.23	5.83	7.30
	3H	9.41	9.93	10.50	11.03	12.50	5.48	6.00	6.58	7.10	8.58
	4H	10.09	10.57	11.20	11.66	13.16	6.02	6.50	7.13	7.59	9.09
	6H	10.60	11.01	11.71	12.13	13.62	6.44	6.85	7.55	7.96	9.45
	8H	10.78	11.16	11.89	12.26	13.77	6.57	6.95	7.68	8.05	9.56
	12H	10.87	11.21	11.99	12.33	13.84	6.63	6.97	7.75	8.09	9.60
8H	4H	10.06	10.44	11.16	11.54	13.05	6.30	6.68	7.41	7.78	9.29
	6H	10.62	10.93	11.75	12.08	13.58	6.81	7.13	7.94	8.27	9.78
	8H	10.83	11.11	11.97	12.24	13.76	7.00	7.28	8.14	8.41	9.93
	12H	10.97	11.21	12.11	12.34	13.90	7.12	7.36	8.26	8.49	10.05
12H	4H	10.00	10.35	11.13	11.47	12.98	6.30	6.64	7.42	7.76	9.27
	6H	10.59	10.87	11.73	12.00	13.52	6.86	7.14	8.00	8.26	9.79
	8H	10.81	11.05	11.95	12.18	13.74	7.07	7.31	8.21	8.43	10.00