

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: P910402

Luminaire Tested: DFN2DIP-4P3F0-040D030US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910402
REPORT IS A COMBINATION OF REPORTS P899043 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-040D030US850-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

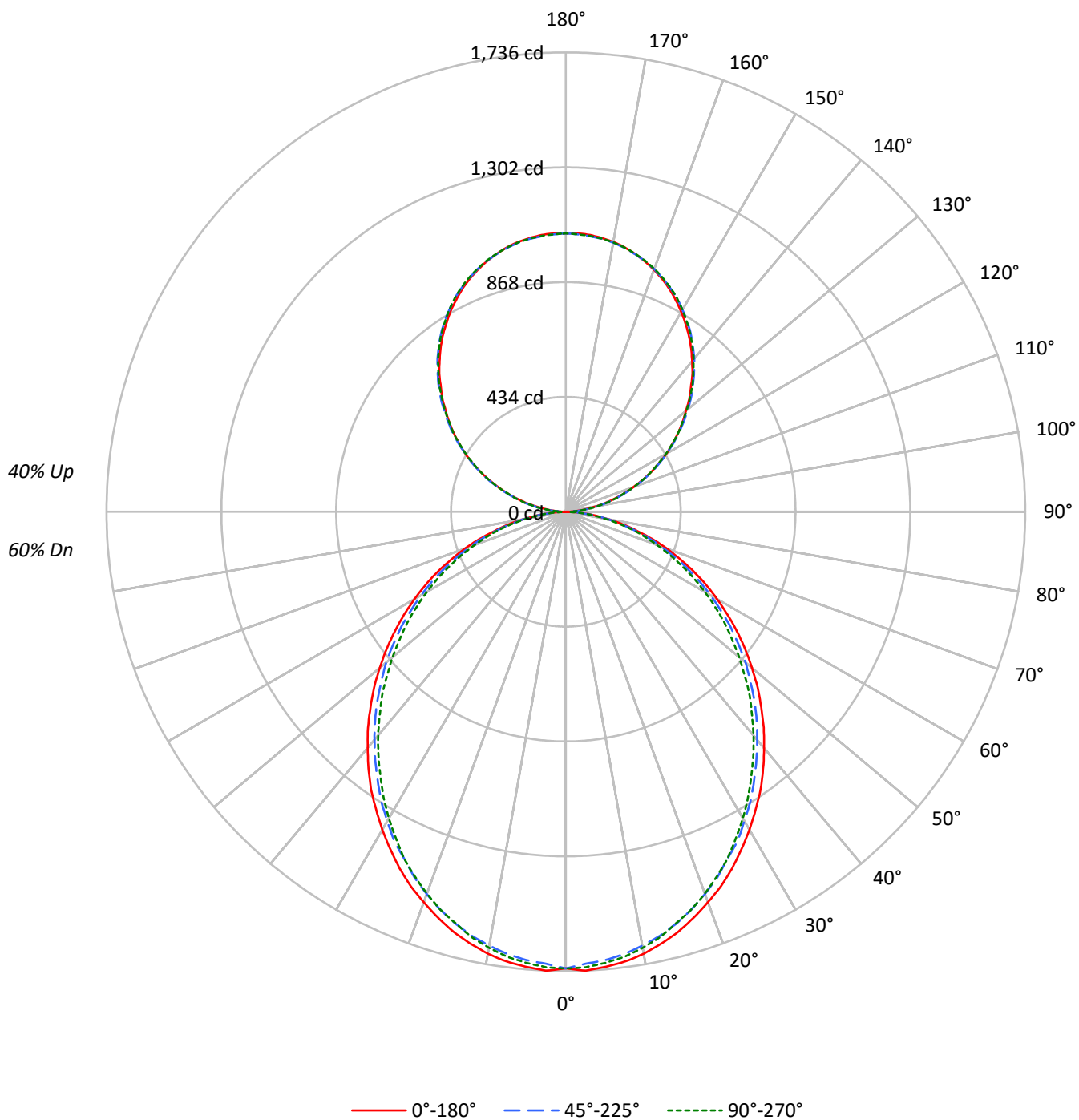
Lumens per Lamp: N/A
Luminaire Lumens: 7336.0 lumens
Efficiency: N/A
Efficacy: 122.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 59.9
Input Voltage (V):
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	110	110	110	110		102	102	102	102		89	89	89		77	77	77		65	65	65
1	100	96	92	88		93	89	86	83		78	75	73		67	66	64		58	56	55
2	91	84	77	72		85	78	73	68		68	64	61		59	56	53		51	48	46
3	83	73	66	60		77	69	62	57		60	55	51		52	48	45		45	42	40
4	76	65	57	51		71	61	54	48		54	48	43		47	42	39		40	37	34
5	70	58	50	44		65	55	47	42		48	42	38		42	37	34		36	33	30
6	64	52	44	38		60	49	42	36		43	37	33		38	33	29		33	29	26
7	60	47	39	33		56	44	37	32		39	33	29		35	30	26		30	26	23
8	55	43	35	30		52	40	33	28		36	30	26		32	27	23		28	24	21
9	52	39	32	26		48	37	30	25		33	27	23		29	24	21		26	22	19
10	48	36	29	24		45	34	27	23		30	25	21		27	22	19		24	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1967	1967	1967
5°	1969	1938	1952
10°	1952	1911	1925
15°	1922	1878	1883
20°	1882	1833	1840
25°	1842	1780	1791
30°	1792	1730	1728
35°	1745	1671	1662
40°	1687	1612	1598
45°	1630	1552	1534
50°	1566	1490	1459
55°	1500	1417	1390
60°	1425	1332	1311
65°	1343	1243	1218
70°	1239	1134	1117
75°	1095	1004	1023
80°	920	837	846
85°	648	555	554

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1630 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	162.5	2.2
10°-20°	457.1	6.2
20°-30°	671.7	9.2
30°-40°	780.2	10.6
40°-50°	779.2	10.6
50°-60°	679.5	9.3
60°-70°	502.3	6.8
70°-80°	284.2	3.9
80°-90°	78.0	1.1
90°-100°	65.1	0.9
100°-110°	206.9	2.8
110°-120°	354.0	4.8
120°-130°	465.6	6.3
130°-140°	522.6	7.1
140°-150°	512.5	7.0
150°-160°	429.9	5.9
160°-170°	285.1	3.9
170°-180°	99.7	1.4
0°-30°	1291.3	17.6
0°-40°	2071.5	28.2
0°-60°	3530.2	48.1
0°-90°	4394.6	59.9
90°-120°	626.0	8.5
90°-150°	2126.7	29.0
90°-180°	2941.0	40.1
0°-180°	7336.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1726	1726	1726	1726	1726	
5°	1726	1720	1701	1714	1711	164
15°	1643	1633	1612	1618	1610	463
25°	1487	1474	1446	1449	1446	684
35°	1283	1266	1240	1230	1222	801
45°	1044	1032	1007	989	983	806
55°	790	780	760	740	732	706
65°	533	523	506	491	483	527
75°	279	276	267	257	261	298
85°	68	66	65	60	58	76
90°	1	11	31	29	30	7
95°	46	55	57	57	55	52
105°	191	194	195	197	197	202
115°	355	360	359	358	355	351
125°	517	525	522	519	518	462
135°	668	678	680	679	677	517
145°	812	818	823	824	820	507
155°	928	930	933	938	935	427
165°	1009	1008	1008	1015	1010	285
175°	1050	1048	1046	1052	1047	100
180°	1052	1052	1052	1052	1052	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1726.0	1726.0	1726.0	1726.0	1726.0
2.5°	1736.1	1727.8	1709.5	1726.0	1722.9
5°	1726.0	1719.5	1701.2	1714.4	1711.3
7.5°	1714.4	1704.5	1686.2	1699.7	1696.3
10°	1696.3	1684.7	1664.8	1678.0	1673.0
12.5°	1671.3	1661.4	1641.5	1649.9	1646.4
15°	1643.1	1633.2	1611.6	1618.3	1610.0
17.5°	1608.3	1598.4	1576.8	1585.0	1576.8
20°	1570.0	1560.1	1537.0	1541.8	1535.4
22.5°	1532.0	1517.0	1495.4	1495.4	1492.0
25°	1487.1	1473.9	1445.7	1448.9	1445.7
27.5°	1437.3	1425.6	1404.2	1399.2	1391.0
30°	1387.6	1374.3	1349.4	1344.4	1337.8
32.5°	1334.5	1324.6	1298.0	1288.0	1281.2
35°	1283.0	1266.5	1239.9	1229.9	1221.6
37.5°	1224.9	1209.9	1183.3	1171.8	1163.5
40°	1165.2	1151.8	1125.2	1110.4	1103.8
42.5°	1107.1	1093.7	1067.3	1050.6	1040.7
45°	1044.0	1032.5	1007.4	989.3	982.6
47.5°	982.6	970.9	944.4	926.1	916.3
50°	917.8	909.5	886.3	863.0	854.7
52.5°	854.7	843.2	821.7	803.4	791.7
55°	790.2	780.1	760.2	740.3	732.1
57.5°	725.3	717.1	695.3	675.5	668.8
60°	660.5	654.0	630.8	612.5	607.5
62.5°	597.5	585.9	569.4	552.7	546.1
65°	532.9	522.8	506.3	491.3	483.1
67.5°	466.4	458.0	443.3	431.6	425.0
70°	405.0	398.4	383.4	371.7	365.2
72.5°	342.0	335.3	327.0	315.4	310.4
75°	278.8	275.6	267.2	257.3	260.6
77.5°	222.4	215.7	212.4	207.4	202.5
80°	166.0	164.2	160.9	156.0	152.7
82.5°	112.9	112.9	111.3	104.6	104.6
85°	68.0	66.4	64.8	59.7	58.1
87.5°	29.9	26.6	23.3	18.3	16.5
90°	1.0	11.4	31.1	29.2	30.2
92.5°	19.6	26.6	27.6	28.5	28.5
95°	46.4	55.2	56.8	56.8	55.2
97.5°	77.1	85.3	88.8	88.8	88.8
100°	112.6	119.9	122.4	122.4	121.5
102.5°	150.0	155.5	158.9	159.9	158.9
105°	191.0	193.5	195.4	197.0	197.0
107.5°	231.6	235.3	235.3	236.0	231.6
110°	270.9	276.0	276.0	276.0	273.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	313.4	318.8	317.8	315.3	313.4
115°	355.3	360.3	358.8	357.9	355.3
117.5°	396.8	403.8	399.4	396.8	394.2
120°	438.7	445.7	438.7	438.7	435.8
122.5°	476.8	485.6	481.2	478.6	476.8
125°	516.8	524.7	522.1	519.2	518.3
127.5°	555.7	565.6	562.2	558.3	555.7
130°	592.2	603.6	602.1	600.2	596.6
132.5°	633.1	642.0	642.7	638.2	635.7
135°	668.4	678.2	680.1	679.2	676.6
137.5°	707.7	715.6	717.2	716.6	712.8
140°	742.3	750.2	754.7	754.7	751.1
142.5°	777.9	785.7	788.3	789.3	785.7
145°	811.5	817.8	822.9	823.8	820.3
147.5°	841.6	849.5	853.3	854.9	851.4
150°	872.7	878.1	881.5	884.4	881.5
152.5°	900.3	905.6	910.0	913.6	910.0
155°	927.9	930.3	933.2	937.7	934.9
157.5°	951.6	953.5	955.2	961.5	957.1
160°	972.9	974.8	975.8	981.1	977.4
162.5°	992.6	992.6	993.6	999.5	995.1
165°	1009.4	1008.4	1008.4	1014.7	1010.3
167.5°	1024.6	1021.7	1021.7	1028.0	1023.6
170°	1036.0	1033.5	1032.6	1038.9	1033.5
172.5°	1043.9	1041.5	1040.5	1046.8	1041.5
175°	1050.3	1047.8	1045.9	1052.2	1046.8
177.5°	1053.8	1051.2	1049.3	1054.8	1049.3
180°	1052.2	1052.2	1052.2	1052.2	1052.2

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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	10.46	11.41	11.32	12.30	13.42	10.01	10.97	10.88	11.86	12.98
	3H	12.12	12.98	13.00	13.88	15.02	11.63	12.49	12.51	13.39	14.53
	4H	12.71	13.52	13.60	14.42	15.58	12.21	13.03	13.11	13.93	15.09
	6H	13.11	13.86	14.02	14.77	15.94	12.61	13.36	13.52	14.27	15.44
	8H	13.21	13.93	14.13	14.86	16.03	12.71	13.43	13.63	14.35	15.53
	12H	13.26	13.94	14.18	14.87	16.06	12.75	13.43	13.68	14.36	15.55
4H	2H	10.92	11.74	11.82	12.64	13.80	10.57	11.38	11.47	12.29	13.44
	3H	12.79	13.47	13.70	14.41	15.58	12.39	13.06	13.30	14.00	15.17
	4H	13.51	14.13	14.43	15.06	16.26	13.08	13.70	14.01	14.63	15.83
	6H	14.02	14.56	14.96	15.51	16.71	13.59	14.13	14.53	15.08	16.28
	8H	14.17	14.67	15.11	15.62	16.83	13.74	14.24	14.67	15.18	16.40
	12H	14.25	14.70	15.21	15.67	16.88	13.80	14.25	14.76	15.22	16.44
8H	4H	13.71	14.21	14.65	15.16	16.37	13.33	13.83	14.27	14.78	15.99
	6H	14.34	14.75	15.30	15.74	16.95	13.95	14.37	14.92	15.36	16.57
	8H	14.56	14.92	15.53	15.90	17.13	14.16	14.53	15.14	15.51	16.74
	12H	14.69	15.01	15.67	15.98	17.26	14.28	14.60	15.25	15.57	16.85
12H	4H	13.70	14.15	14.66	15.11	16.33	13.33	13.78	14.29	14.75	15.96
	6H	14.37	14.73	15.34	15.71	16.94	13.99	14.36	14.97	15.34	16.57
	8H	14.61	14.93	15.59	15.90	17.18	14.23	14.55	15.21	15.52	16.80

END OF REPORT