

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: P921334

Luminaire Tested: DFN2DIP-4P3F0-050D030US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921334
REPORT IS A COMBINATION OF REPORTS P899045 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-050D030US940-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

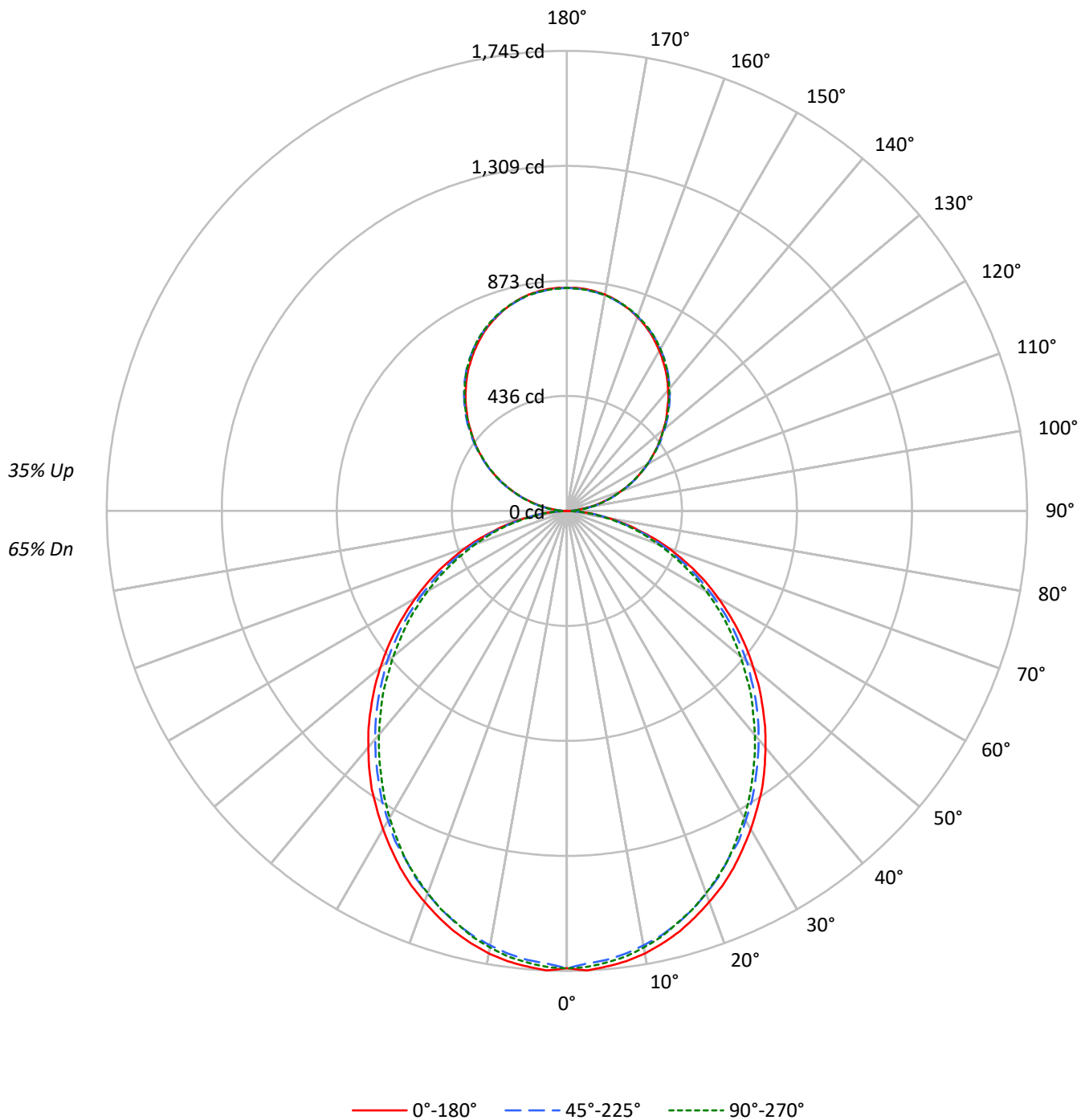
Lumens per Lamp: N/A
Luminaire Lumens: 6781.5 lumens
Efficiency: N/A
Efficacy: 95.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 71.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
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				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	111	111	111	111	104	104	104	104	92	92	92	80	80	80	70	70	70
1	101	97	93	89	95	91	88	84	81	78	75	71	69	67	62	60	59
2	92	85	78	73	86	80	74	69	71	66	63	62	59	56	55	52	50
3	84	74	67	61	79	70	63	58	62	57	53	55	51	47	48	45	42
4	77	66	58	52	72	62	55	49	55	50	45	49	44	41	43	40	37
5	71	59	50	44	66	56	48	42	50	44	39	44	39	35	39	35	32
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	35	31	28
7	60	48	40	34	57	45	38	33	41	35	30	36	31	28	32	28	25
8	56	44	36	30	53	41	34	29	37	31	27	33	28	25	30	26	22
9	52	40	32	27	49	38	31	26	34	28	24	31	26	22	27	23	20
10	49	37	29	24	46	35	28	23	32	26	22	28	24	20	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1977	1977	1977
5°	1979	1948	1962
10°	1962	1921	1935
15°	1931	1888	1893
20°	1891	1843	1850
25°	1851	1789	1800
30°	1801	1739	1737
35°	1754	1680	1670
40°	1696	1620	1607
45°	1638	1560	1541
50°	1574	1497	1466
55°	1508	1424	1397
60°	1432	1338	1317
65°	1350	1249	1224
70°	1245	1140	1123
75°	1100	1009	1029
80°	925	842	850
85°	651	558	557

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1638 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	163.3	2.4
10°-20°	459.4	6.8
20°-30°	675.2	10.0
30°-40°	784.2	11.6
40°-50°	783.2	11.5
50°-60°	682.9	10.1
60°-70°	504.8	7.4
70°-80°	285.6	4.2
80°-90°	77.8	1.1
90°-100°	52.3	0.8
100°-110°	166.3	2.5
110°-120°	284.7	4.2
120°-130°	374.4	5.5
130°-140°	420.2	6.2
140°-150°	412.1	6.1
150°-160°	345.7	5.1
160°-170°	229.2	3.4
170°-180°	80.1	1.2
0°-30°	1297.9	19.1
0°-40°	2082.0	30.7
0°-60°	3548.1	52.3
0°-90°	4416.4	65.1
90°-120°	503.4	7.4
90°-150°	1710.0	25.2
90°-180°	2365.0	34.9
0°-180°	6781.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1735	1735	1735	1735	1735	
5°	1735	1728	1710	1723	1720	165
15°	1651	1642	1620	1627	1618	465
25°	1495	1481	1453	1456	1453	688
35°	1290	1273	1246	1236	1228	805
45°	1049	1038	1012	994	988	810
55°	794	784	764	744	736	710
65°	536	526	509	494	485	530
75°	280	277	268	259	262	299
85°	68	67	65	60	58	76
90°	1	9	25	24	24	7
95°	37	44	46	46	44	41
105°	154	156	157	158	158	162
115°	286	290	288	288	286	283
125°	416	422	420	418	417	371
135°	537	545	547	546	544	415
145°	652	658	662	662	660	408
155°	746	748	750	754	752	343
165°	812	811	811	816	812	229
175°	844	842	841	846	842	80
180°	846	846	846	846	846	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1734.8	1734.8	1734.8	1734.8	1734.8
2.5°	1744.9	1736.6	1718.2	1734.8	1731.7
5°	1734.8	1728.3	1709.9	1723.1	1720.0
7.5°	1723.1	1713.2	1694.9	1708.3	1705.0
10°	1705.0	1693.3	1673.3	1686.5	1681.6
12.5°	1679.8	1669.9	1649.9	1658.2	1654.8
15°	1651.4	1641.5	1619.8	1626.6	1618.2
17.5°	1616.4	1606.5	1584.7	1593.0	1584.7
20°	1578.1	1568.2	1544.8	1549.7	1543.2
22.5°	1539.8	1524.7	1503.0	1503.0	1499.6
25°	1494.7	1481.4	1453.0	1456.3	1453.0
27.5°	1444.6	1432.9	1411.3	1406.3	1398.0
30°	1394.6	1381.3	1356.3	1351.3	1344.6
32.5°	1341.2	1331.3	1304.6	1294.5	1287.8
35°	1289.5	1272.9	1246.2	1236.1	1227.8
37.5°	1231.1	1216.1	1189.4	1177.7	1169.4
40°	1171.2	1157.7	1131.0	1116.1	1109.4
42.5°	1112.8	1099.3	1072.7	1055.9	1046.0
45°	1049.4	1037.7	1012.5	994.3	987.6
47.5°	987.6	975.9	949.2	930.8	920.9
50°	922.5	914.2	890.8	867.5	859.1
52.5°	859.1	847.4	825.8	807.4	795.8
55°	794.2	784.1	764.0	744.0	735.8
57.5°	729.0	720.7	698.9	678.9	672.2
60°	663.9	657.4	634.0	615.5	610.6
62.5°	600.6	588.9	572.2	555.5	548.8
65°	535.6	525.5	508.8	493.8	485.4
67.5°	468.9	460.4	445.5	433.8	427.0
70°	407.1	400.4	385.3	373.6	367.1
72.5°	343.8	337.0	328.7	317.0	312.0
75°	280.2	277.0	268.5	258.6	262.0
77.5°	223.6	216.8	213.5	208.5	203.6
80°	166.9	165.1	161.8	156.9	153.5
82.5°	113.4	113.4	111.8	105.1	105.1
85°	68.3	66.7	65.1	60.0	58.4
87.5°	30.1	26.8	23.4	18.4	16.7
90°	0.8	9.2	25.0	23.5	24.3
92.5°	15.8	21.4	22.2	22.9	22.9
95°	37.3	44.4	45.7	45.7	44.4
97.5°	62.0	68.6	71.4	71.4	71.4
100°	90.5	96.4	98.4	98.4	97.7
102.5°	120.6	125.0	127.8	128.6	127.8
105°	153.6	155.6	157.1	158.4	158.4
107.5°	186.2	189.2	189.2	189.8	186.2
110°	217.8	221.9	221.9	221.9	219.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	252.0	256.4	255.6	253.5	252.0
115°	285.7	289.7	288.5	287.8	285.7
117.5°	319.1	324.7	321.1	319.1	317.0
120°	352.8	358.4	352.8	352.8	350.4
122.5°	383.3	390.5	386.9	384.9	383.3
125°	415.5	421.9	419.8	417.5	416.8
127.5°	446.8	454.8	452.0	448.9	446.8
130°	476.2	485.4	484.1	482.6	479.7
132.5°	509.1	516.2	516.7	513.2	511.1
135°	537.4	545.3	546.9	546.1	544.0
137.5°	569.0	575.4	576.7	576.2	573.1
140°	596.8	603.2	606.8	606.8	604.0
142.5°	625.4	631.8	633.8	634.6	631.8
145°	652.5	657.5	661.6	662.4	659.6
147.5°	676.7	683.1	686.1	687.4	684.6
150°	701.7	706.1	708.8	711.1	708.8
152.5°	723.9	728.2	731.7	734.6	731.7
155°	746.1	748.1	750.4	753.9	751.7
157.5°	765.2	766.7	768.0	773.1	769.5
160°	782.3	783.8	784.6	788.9	785.9
162.5°	798.1	798.1	798.9	803.7	800.1
165°	811.6	810.8	810.8	815.9	812.3
167.5°	823.9	821.5	821.5	826.6	823.0
170°	833.0	831.0	830.3	835.4	831.0
172.5°	839.4	837.4	836.6	841.7	837.4
175°	844.5	842.5	841.0	846.1	841.7
177.5°	847.3	845.3	843.7	848.1	843.7
180°	846.1	846.1	846.1	846.1	846.1

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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	10.90	11.91	11.71	12.75	13.79	10.45	11.47	11.27	12.30	13.34
	3H	12.56	13.48	13.39	14.32	15.39	12.07	12.98	12.90	13.83	14.90
	4H	13.15	14.02	14.00	14.87	15.95	12.66	13.52	13.51	14.38	15.45
	6H	13.56	14.35	14.42	15.22	16.31	13.06	13.85	13.92	14.72	15.81
	8H	13.67	14.42	14.53	15.31	16.39	13.16	13.92	14.03	14.80	15.89
	12H	13.72	14.44	14.59	15.31	16.43	13.21	13.93	14.08	14.81	15.92
4H	2H	11.37	12.23	12.22	13.09	14.16	11.02	11.88	11.87	12.73	13.81
	3H	13.25	13.97	14.11	14.85	15.95	12.84	13.56	13.70	14.44	15.54
	4H	13.96	14.62	14.84	15.50	16.62	13.54	14.19	14.41	15.08	16.20
	6H	14.48	15.05	15.37	15.96	17.08	14.05	14.62	14.94	15.53	16.65
	8H	14.63	15.16	15.53	16.07	17.20	14.20	14.73	15.09	15.63	16.76
	12H	14.71	15.19	15.62	16.11	17.25	14.26	14.74	15.17	15.66	16.80
8H	4H	14.17	14.70	15.06	15.60	16.74	13.79	14.32	14.68	15.22	16.36
	6H	14.80	15.24	15.72	16.18	17.32	14.42	14.85	15.33	15.80	16.93
	8H	15.02	15.41	15.95	16.34	17.50	14.63	15.01	15.55	15.95	17.10
	12H	15.15	15.50	16.09	16.43	17.63	14.74	15.09	15.68	16.02	17.22
12H	4H	14.16	14.64	15.07	15.56	16.70	13.79	14.27	14.70	15.19	16.33
	6H	14.83	15.22	15.76	16.16	17.31	14.46	14.85	15.39	15.78	16.93
	8H	15.07	15.42	16.01	16.35	17.55	14.69	15.04	15.63	15.97	17.17