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: P912753

Luminaire Tested: DFN2DIP-TR4F0-040D100US850-RLLONL

Issue Date: 11/21/2024

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Scaled Data Report

Test Information

Test Method:	LM-79-2019
Report Number:	P912753
	REPORT IS A COMBINATION OF REPORTS P901998 AND P898849
Test Lab:	INNOVATION CENTER
Issue Date:	11/21/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	NEO-RAY
Catalog Number:	DFN2DIP-TR4F0-040D100US850-RLLONL
Description:	4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	14749.7 lumens
Efficiency:	N/A
Efficacy:	136.2 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):	108.3
Input Voltage (V):	
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.9952
Total Harmonic Distortion (THDi):	0.069
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

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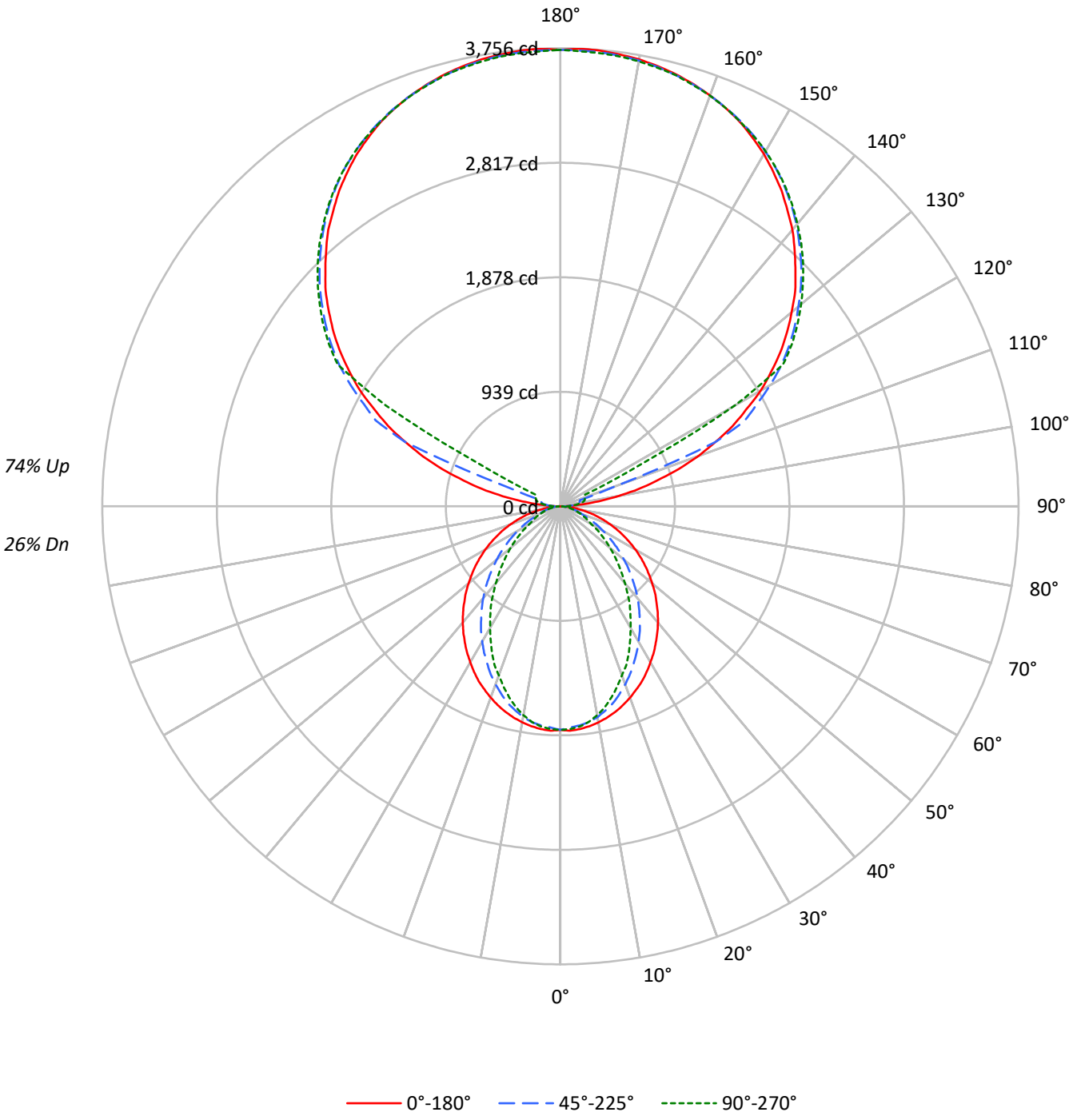
Luminous Intensity Polar Plot



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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	0
RCR																		
0	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34	26
1	93	88	85	82	82	79	76	73	61	59	58	45	44	43	30	29	29	22
2	84	77	72	67	75	69	65	60	54	51	48	40	38	36	27	26	25	19
3	77	68	61	56	69	61	55	51	48	44	41	35	33	31	24	23	21	16
4	71	60	53	47	63	54	48	43	43	38	35	32	29	26	22	20	19	14
5	65	54	46	41	58	48	42	37	38	33	30	28	25	23	19	18	16	12
6	60	48	41	35	53	43	37	32	34	30	26	26	23	20	18	16	14	11
7	55	43	36	31	49	39	33	28	31	26	23	23	20	18	16	14	13	10
8	51	39	32	27	45	36	29	25	28	24	20	21	18	16	15	13	12	9
9	47	36	29	24	42	32	26	22	26	21	18	20	16	14	14	12	10	8
10	44	33	26	21	39	30	24	20	24	19	16	18	15	13	13	11	10	7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1457	1457	1457
5°	1459	1433	1443
10°	1444	1405	1396
15°	1425	1359	1323
20°	1398	1295	1234
25°	1371	1223	1148
30°	1335	1149	1039
35°	1300	1070	943
40°	1264	988	833
45°	1222	897	733
50°	1178	806	636
55°	1133	708	543
60°	1081	605	447
65°	1021	501	402
70°	948	404	364
75°	856	356	331
80°	723	299	287
85°	504	199	215

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
Vertical Angle: 90°
Luminance: 1987 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	171.8	1.2
10°-20°	471.7	3.2
20°-30°	662.3	4.5
30°-40°	721.9	4.9
40°-50°	663.5	4.5
50°-60°	521.1	3.5
60°-70°	339.2	2.3
70°-80°	174.6	1.2
80°-90°	51.2	0.3
90°-100°	123.4	0.8
100°-110°	460.1	3.1
110°-120°	1220.2	8.3
120°-130°	2023.8	13.7
130°-140°	2149.7	14.6
140°-150°	1997.9	13.5
150°-160°	1606.3	10.9
160°-170°	1035.0	7.0
170°-180°	356.2	2.4
0°-30°	1305.8	8.9
0°-40°	2027.7	13.7
0°-60°	3212.2	21.8
0°-90°	3777.2	25.6
90°-120°	1803.7	12.2
90°-150°	7975.0	54.1
90°-180°	10973.0	74.4
0°-180°	14749.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1833	1833	1833	1833	1833	
5°	1833	1825	1804	1818	1814	174
15°	1744	1726	1669	1638	1621	491
25°	1583	1530	1420	1352	1327	728
35°	1364	1279	1133	1029	992	854
45°	1115	1004	830	712	672	861
55°	848	718	539	440	408	758
65°	572	438	289	232	227	568
75°	305	189	133	121	120	323
85°	71	36	32	32	32	82
90°	3	32	54	68	73	14
95°	176	86	106	119	116	208
105°	823	905	165	195	206	880
115°	1557	1603	1671	417	222	1533
125°	2202	2237	2288	2308	2316	1964
135°	2725	2768	2792	2819	2814	2105
145°	3161	3158	3204	3223	3209	1977
155°	3480	3456	3488	3504	3483	1604
165°	3667	3651	3659	3678	3659	1036
175°	3751	3732	3737	3756	3729	357
180°	3743	3743	3743	3743	3743	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1833.4	1833.4	1833.4	*1833.4*	1833.4
2.5°	1841.7	1833.4	1815.1	*1831.8*	1828.4
5°	1833.4	1825.1	1803.5	*1818.4*	1813.5
7.5°	1818.4	1808.6	1785.4	*1791.8*	1783.6
10°	1798.6	1786.9	1753.8	*1748.7*	1738.9
12.5°	1773.7	1758.8	1713.8	*1704.0*	1685.7
15°	1743.8	1725.5	1669.2	*1637.7*	1621.1
17.5°	1709.0	1682.4	1612.6	*1576.2*	1549.6
20°	1669.2	1635.9	1552.9	*1511.6*	1475.0
22.5°	1626.0	1587.9	1491.5	*1435.2*	1410.4
25°	1582.9	1529.8	1420.2	*1352.3*	1327.3
27.5°	1531.5	1475.0	1353.9	*1275.9*	1237.6
30°	1476.7	1413.5	1280.8	*1196.3*	1151.5
32.5°	1423.6	1347.2	1211.2	*1111.7*	1070.1
35°	1364.0	1279.2	1133.3	*1028.7*	992.1
37.5°	1305.8	1214.5	1060.2	*945.6*	904.3
40°	1244.4	1144.9	983.9	*866.1*	823.0
42.5°	1181.3	1075.2	907.6	*784.7*	743.4
45°	1115.0	1003.8	829.6	*711.8*	671.9
47.5°	1052.0	934.2	755.0	*637.1*	600.6
50°	982.2	864.5	681.9	*567.4*	532.7
52.5°	914.1	789.7	612.3	*502.7*	471.2
55°	847.8	718.4	539.2	*439.7*	408.2
57.5°	779.8	647.1	474.5	*381.6*	355.1
60°	710.1	577.3	406.4	*321.9*	295.4
62.5°	642.2	509.5	348.3	*268.8*	255.6
65°	572.5	437.9	288.7	*232.3*	227.2
67.5°	506.1	371.6	232.3	*204.1*	199.1
70°	436.4	307.0	192.4	*175.9*	169.1
72.5°	370.1	247.2	160.9	*147.7*	144.4
75°	305.2	189.1	132.7	*121.1*	119.6
77.5°	240.7	134.3	104.6	*97.9*	94.5
80°	180.8	96.3	79.5	*73.1*	73.1
82.5°	126.1	64.8	54.8	*51.3*	51.3
85°	71.3	36.5	31.5	*31.5*	31.5
87.5°	26.6	13.2	13.2	*11.6*	11.6
90°	2.6	32.5	54.0	*67.9*	73.0
92.5°	67.9	56.9	65.0	*70.4*	73.0
95°	175.9	86.5	105.5	*119.3*	116.4
97.5°	316.7	94.8	138.0	*146.3*	148.9
100°	479.5	108.3	154.4	*175.9*	181.4
102.5°	658.0	652.9	159.8	*189.4*	197.7
105°	823.3	904.6	165.4	*194.9*	205.8
107.5°	1015.6	1083.2	170.8	*200.4*	211.3
110°	1199.8	1256.5	474.0	*203.3*	213.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1373.2	1421.7	1375.8	*208.4*	216.8
115°	1557.1	1603.2	1671.0	*417.1*	222.2
117.5°	1717.0	1771.1	1817.3	*1429.8*	720.4
120°	1895.8	1936.3	1985.2	*2017.7*	1652.1
122.5°	2047.3	2090.7	2145.0	*2161.1*	2164.0
125°	2201.7	2237.1	2288.5	*2307.5*	2315.5
127.5°	2342.5	2380.5	2421.3	*2448.3*	2450.9
130°	2475.3	2518.8	2548.4	*2578.2*	2575.7
132.5°	2610.7	2646.1	2675.7	*2700.1*	2697.5
135°	2724.6	2768.0	2792.1	*2819.4*	2814.0
137.5°	2843.6	2876.1	2903.4	*2930.4*	2922.3
140°	2959.9	2981.9	3011.4	*3035.9*	3022.4
142.5°	3057.7	3076.7	3111.7	*3133.3*	3119.8
145°	3160.6	3157.8	3203.8	*3222.8*	3209.2
147.5°	3249.7	3241.7	3287.6	*3301.2*	3290.6
150°	3336.5	3317.6	3361.0	*3377.1*	3363.6
152.5°	3409.5	3388.0	3428.6	*3444.9*	3425.9
155°	3480.0	3455.9	3488.4	*3504.4*	3482.9
157.5°	3536.9	3515.4	3539.8	*3558.8*	3536.9
160°	3585.8	3569.4	3585.8	*3601.9*	3583.0
162.5°	3628.9	3612.8	3626.3	*3645.3*	3620.9
165°	3666.8	3650.7	3658.8	*3677.8*	3658.8
167.5°	3696.7	3680.3	3688.8	*3707.7*	3683.2
170°	3721.1	3704.8	3710.3	*3729.2*	3704.8
172.5°	3737.2	3721.1	3726.7	*3745.6*	3721.1
175°	3750.7	3731.8	3737.2	*3756.3*	3729.2
177.5°	*3756.3*	*3737.2*	*3740.2*	*3759.2*	*3734.7*
180°	3742.8	3742.8	3742.8	*3742.8*	3742.8

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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	5.57	6.24	6.72	7.37	8.95	1.55	2.21	2.69	3.34	4.93
	3H	7.24	7.83	8.39	8.97	10.57	2.72	3.32	3.88	4.46	6.06
	4H	7.84	8.40	9.00	9.54	11.15	3.17	3.73	4.33	4.87	6.47
	6H	8.25	8.77	9.42	9.91	11.53	3.48	4.00	4.65	5.14	6.76
	8H	8.37	8.87	9.55	10.02	11.63	3.57	4.06	4.74	5.22	6.82
	12H	8.43	8.90	9.61	10.05	11.68	3.60	4.07	4.78	5.22	6.85
4H	2H	5.57	6.13	6.74	7.28	8.88	2.12	2.68	3.29	3.83	5.43
	3H	7.38	7.85	8.56	9.02	10.64	3.46	3.93	4.63	5.09	6.71
	4H	8.07	8.50	9.25	9.66	11.29	4.00	4.43	5.18	5.59	7.22
	6H	8.58	8.95	9.76	10.12	11.75	4.41	4.78	5.59	5.96	7.58
	8H	8.75	9.09	9.93	10.26	11.90	4.54	4.88	5.72	6.05	7.69
	12H	8.84	9.15	10.03	10.33	11.97	4.59	4.91	5.79	6.09	7.73
8H	4H	8.03	8.37	9.21	9.54	11.18	4.27	4.61	5.45	5.78	7.42
	6H	8.59	8.87	9.78	10.08	11.72	4.78	5.06	5.98	6.28	7.91
	8H	8.80	9.05	10.01	10.24	11.90	4.97	5.22	6.18	6.41	8.06
	12H	8.93	9.15	10.14	10.34	12.03	5.08	5.30	6.29	6.49	8.18
12H	4H	7.97	8.28	9.17	9.46	11.11	4.26	4.58	5.46	5.76	7.40
	6H	8.56	8.81	9.76	10.00	11.65	4.83	5.08	6.03	6.26	7.92
	8H	8.77	8.99	9.98	10.18	11.87	5.03	5.25	6.24	6.44	8.13

END OF REPORT