

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: P913232

Luminaire Tested: DFN2DIP-4P4F0-040D080US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913232
REPORT IS A COMBINATION OF REPORTS P899142 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-040D080US927-RLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect
Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

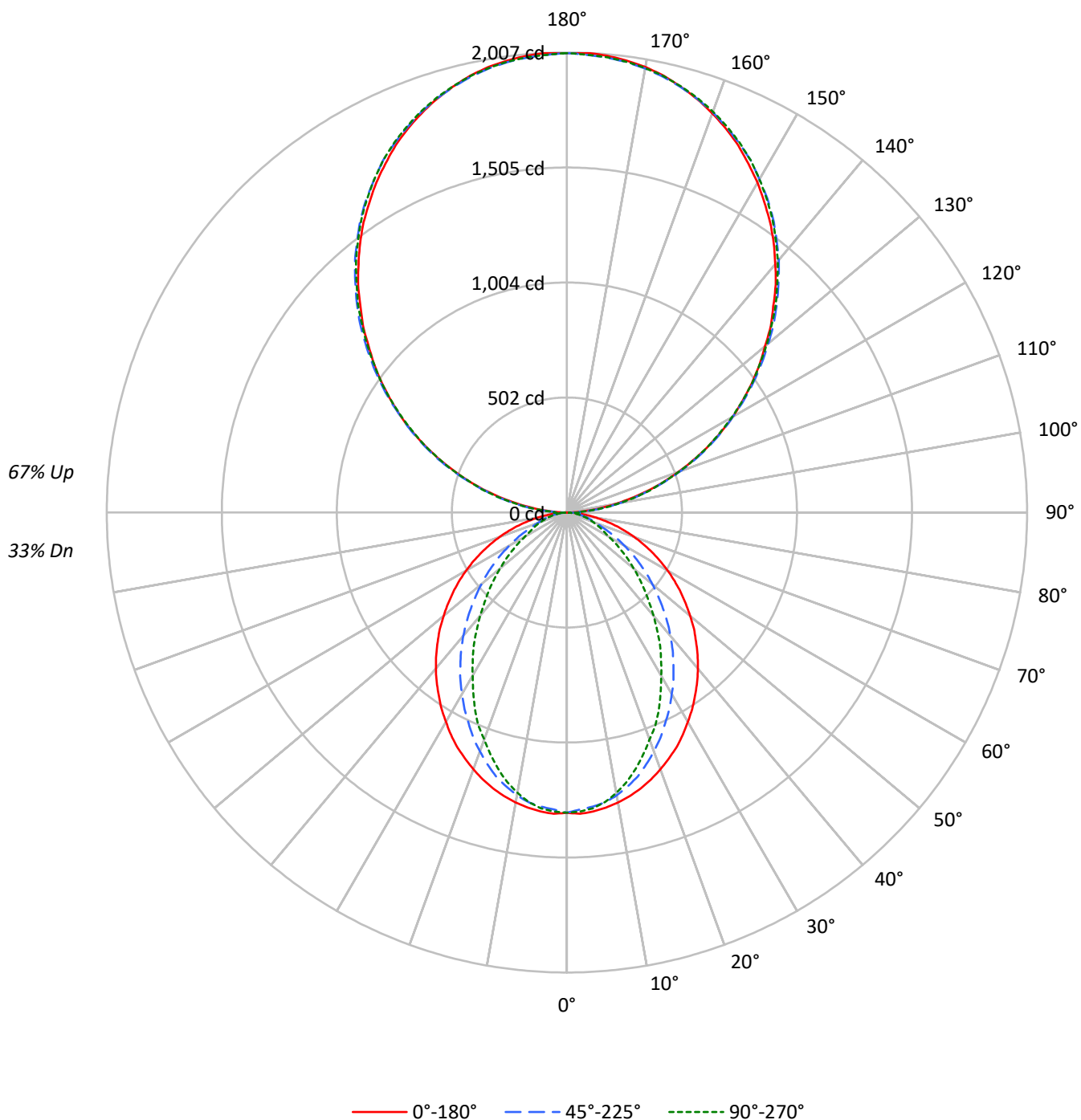
Lumens per Lamp: N/A
Luminaire Lumens: 8302.0 lumens
Efficiency: N/A
Efficacy: 73.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 112.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P913232

CATALOG NUMBER: DFN2DIP-4P4F0-040D080US927-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P913232

CATALOG NUMBER: DFN2DIP-4P4F0-040D080US927-RLLFLL

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
RCR																	
0	103	103	103	103	93	93	93	93	74	74	74		56	56	56		40
1	94	90	86	83	85	81	78	75	65	63	61		50	48	47		36
2	86	79	73	68	77	71	67	62	57	54	51		44	42	40		32
3	79	70	63	57	71	63	57	52	51	46	43		39	36	34		29
4	72	62	54	49	65	56	50	45	45	41	37		35	32	29		26
5	66	55	47	42	59	50	43	38	40	36	32		32	28	26		23
6	61	49	42	36	55	45	38	33	36	32	28		29	25	23		21
7	56	45	37	32	51	41	34	29	33	28	25		26	23	20		19
8	52	40	33	28	47	37	30	26	30	25	22		24	20	18		18
9	49	37	30	25	44	34	27	23	28	23	20		22	19	16		17
10	45	34	27	22	41	31	25	21	25	21	18		20	17	15		15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	850	850	850
5°	851	836	842
10°	843	820	815
15°	831	793	773
20°	816	756	721
25°	800	715	671
30°	779	672	608
35°	759	626	552
40°	738	578	488
45°	713	525	430
50°	688	472	373
55°	662	415	319
60°	631	355	263
65°	596	295	237
70°	554	238	215
75°	501	210	196
80°	423	177	171
85°	296	120	131

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1517 cd/sqm

TEST NUMBER: P913232

CATALOG NUMBER: DFN2DIP-4P4F0-040D080US927-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.7	1.5
10°-20°	336.9	4.1
20°-30°	473.1	5.7
30°-40°	515.7	6.2
40°-50°	473.9	5.7
50°-60°	372.2	4.5
60°-70°	242.3	2.9
70°-80°	124.7	1.5
80°-90°	37.5	0.5
90°-100°	124.0	1.5
100°-110°	394.1	4.7
110°-120°	674.4	8.1
120°-130°	886.9	10.7
130°-140°	995.5	12.0
140°-150°	976.2	11.8
150°-160°	818.9	9.9
160°-170°	543.1	6.5
170°-180°	189.8	2.3
0°-30°	932.7	11.2
0°-40°	1448.4	17.4
0°-60°	2294.6	27.6
0°-90°	2699.1	32.5
90°-120°	1192.5	14.4
90°-150°	4051.1	48.8
90°-180°	5603.0	67.5
0°-180°	8302.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1310	1310	1310	1310	1310	
5°	1310	1304	1288	1299	1296	124
15°	1246	1233	1192	1170	1158	351
25°	1131	1093	1014	966	948	520
35°	974	914	810	735	709	610
45°	796	717	593	508	480	615
55°	606	513	385	314	292	541
65°	409	313	206	166	162	405
75°	218	135	95	86	85	231
85°	51	26	22	22	22	58
90°	2	22	59	56	57	8
95°	88	105	108	108	105	98
105°	364	369	372	375	375	384
115°	677	686	683	682	677	669
125°	984	999	995	989	987	880
135°	1273	1292	1296	1294	1289	984
145°	1546	1558	1567	1569	1563	966
155°	1767	1772	1778	1786	1781	813
165°	1923	1921	1921	1933	1924	542
175°	2001	1996	1992	2004	1994	190
180°	2004	2004	2004	2004	2004	

TEST NUMBER: P913232

CATALOG NUMBER: DFN2DIP-4P4F0-040D080US927-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1309.6	1309.6	1309.6	1309.6	1309.6
2.5°	1315.6	1309.6	1296.6	1308.5	1306.1
5°	1309.6	1303.7	1288.2	1298.9	1295.5
7.5°	1298.9	1291.9	1275.3	1279.9	1274.1
10°	1284.8	1276.4	1252.8	1249.1	1242.1
12.5°	1267.0	1256.3	1224.2	1217.2	1204.1
15°	1245.6	1232.6	1192.3	1169.8	1158.0
17.5°	1220.8	1201.7	1151.9	1125.9	1106.9
20°	1192.3	1168.5	1109.3	1079.7	1053.6
22.5°	1161.5	1134.2	1065.4	1025.2	1007.5
25°	1130.7	1092.7	1014.5	966.0	948.1
27.5°	1094.0	1053.6	967.1	911.4	884.1
30°	1054.9	1009.7	914.9	854.5	822.5
32.5°	1016.9	962.3	865.2	794.1	764.4
35°	974.3	913.8	809.5	734.8	708.7
37.5°	932.8	867.5	757.3	675.5	645.9
40°	888.9	817.8	702.8	618.7	587.9
42.5°	843.8	768.0	648.3	560.5	531.0
45°	796.5	717.0	592.6	508.4	480.0
47.5°	751.5	667.3	539.3	455.1	429.0
50°	701.6	617.5	487.1	405.3	380.5
52.5°	653.0	564.1	437.4	359.1	336.6
55°	605.6	513.2	385.2	314.1	291.6
57.5°	557.1	462.2	339.0	272.6	253.7
60°	507.2	412.4	290.3	230.0	211.0
62.5°	458.8	363.9	248.8	192.0	182.6
65°	408.9	312.8	206.2	166.0	162.3
67.5°	361.6	265.5	166.0	145.8	142.2
70°	311.7	219.3	137.4	125.6	120.8
72.5°	264.4	176.6	114.9	105.5	103.1
75°	218.0	135.1	94.8	86.5	85.4
77.5°	171.9	95.9	74.7	69.9	67.5
80°	129.1	68.8	56.8	52.2	52.2
82.5°	90.1	46.3	39.1	36.7	36.7
85°	50.9	26.1	22.5	22.5	22.5
87.5°	19.0	9.4	9.4	8.3	8.3
90°	1.8	21.8	59.3	55.6	57.4
92.5°	37.5	50.8	52.6	54.3	54.3
95°	88.2	105.1	108.1	108.1	105.1
97.5°	146.9	162.6	169.2	169.2	169.2
100°	214.5	228.4	233.2	233.2	231.4
102.5°	285.8	296.1	302.7	304.5	302.7
105°	363.8	368.6	372.2	375.3	375.3
107.5°	441.1	448.4	448.4	449.6	441.1
110°	516.0	525.7	525.7	525.7	520.9

TEST NUMBER: P913232

CATALOG NUMBER: DFN2DIP-4P4F0-040D080US927-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	597.0	607.3	605.5	600.6	597.0
115°	676.8	686.4	683.4	681.6	676.8
117.5°	755.9	769.2	760.7	755.9	751.1
120°	835.7	849.0	835.7	835.7	830.2
122.5°	908.2	925.1	916.6	911.8	908.2
125°	984.3	999.4	994.6	989.1	987.4
127.5°	1058.7	1077.4	1070.7	1063.5	1058.7
130°	1128.1	1149.9	1146.8	1143.3	1136.6
132.5°	1206.1	1223.0	1224.2	1215.8	1210.9
135°	1273.1	1291.9	1295.5	1293.7	1288.9
137.5°	1348.1	1363.2	1366.2	1365.0	1357.7
140°	1414.0	1429.0	1437.5	1437.5	1430.8
142.5°	1481.6	1496.7	1501.6	1503.4	1496.7
145°	1545.7	1557.7	1567.4	1569.2	1562.6
147.5°	1603.1	1618.2	1625.4	1628.5	1621.8
150°	1662.3	1672.5	1679.2	1684.7	1679.2
152.5°	1714.8	1725.1	1733.6	1740.3	1733.6
155°	1767.4	1772.3	1777.7	1786.1	1780.7
157.5°	1812.7	1816.4	1819.4	1831.4	1823.0
160°	1853.2	1856.9	1858.7	1868.9	1861.7
162.5°	1890.7	1890.7	1892.5	1904.0	1895.5
165°	1922.7	1920.9	1920.9	1933.0	1924.5
167.5°	1951.7	1946.3	1946.3	1958.4	1949.9
170°	1973.5	1968.6	1966.8	1978.9	1968.6
172.5°	1988.6	1983.8	1982.0	1994.0	1983.8
175°	2000.7	1995.8	1992.2	2004.3	1994.0
177.5°	2007.3	2002.5	1998.8	2009.1	1998.8
180°	2004.3	2004.3	2004.3	2004.3	2004.3

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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	4.70	5.40	5.80	6.50	8.00	0.66	1.36	1.76	2.46	3.96
	3H	6.37	7.00	7.48	8.10	9.62	1.84	2.47	2.95	3.57	5.09
	4H	6.98	7.58	8.10	8.68	10.21	2.29	2.88	3.40	3.99	5.51
	6H	7.40	7.95	8.53	9.05	10.59	2.60	3.15	3.73	4.26	5.79
	8H	7.52	8.05	8.65	9.17	10.70	2.69	3.21	3.82	4.33	5.86
	12H	7.58	8.08	8.72	9.20	10.75	2.73	3.23	3.86	4.34	5.89
4H	2H	4.70	5.30	5.83	6.40	7.93	1.24	1.84	2.37	2.94	4.47
	3H	6.53	7.02	7.66	8.15	9.69	2.58	3.08	3.71	4.21	5.75
	4H	7.22	7.67	8.35	8.79	10.35	3.13	3.58	4.26	4.70	6.26
	6H	7.73	8.12	8.87	9.26	10.81	3.54	3.93	4.68	5.07	6.62
	8H	7.91	8.27	9.05	9.41	10.97	3.67	4.03	4.81	5.17	6.73
	12H	8.00	8.33	9.16	9.48	11.05	3.73	4.06	4.89	5.21	6.78
8H	4H	7.18	7.54	8.32	8.67	10.24	3.40	3.77	4.54	4.90	6.47
	6H	7.74	8.04	8.90	9.22	10.78	3.92	4.22	5.08	5.39	6.96
	8H	7.96	8.23	9.13	9.38	10.96	4.11	4.37	5.28	5.53	7.11
	12H	8.10	8.33	9.27	9.48	11.10	4.23	4.46	5.40	5.61	7.23
12H	4H	7.12	7.45	8.28	8.60	10.17	3.40	3.73	4.56	4.88	6.45
	6H	7.72	7.98	8.89	9.14	10.72	3.97	4.23	5.13	5.39	6.97
	8H	7.94	8.17	9.11	9.32	10.94	4.18	4.41	5.35	5.56	7.18

END OF REPORT