

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: P923984

Luminaire Tested: DFN2DIP-4P2F0-030D040US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923984
REPORT IS A COMBINATION OF REPORTS P899026 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-030D040US950-RLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

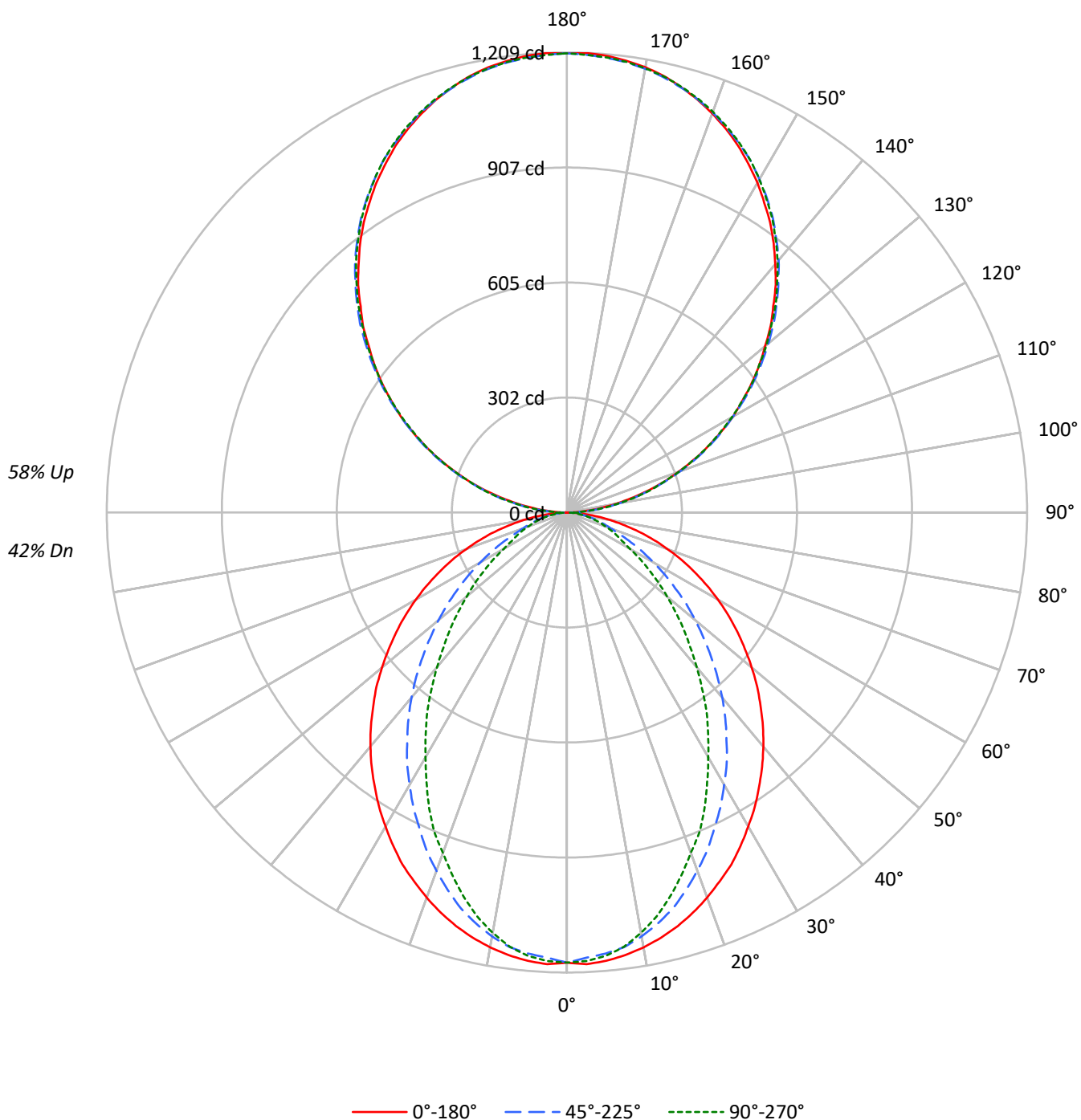
Lumens per Lamp: N/A
Luminaire Lumens: 5809.8 lumens
Efficiency: N/A
Efficacy: 96.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 60.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P923984

CATALOG NUMBER: DFN2DIP-4P2F0-030D040US950-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P923984

CATALOG NUMBER: DFN2DIP-4P2F0-030D040US950-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	30	10
RCR																	
0	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	44	43	42
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36
3	81	72	65	59	73	66	60	55	55	50	47	44	41	39	35	33	31
4	74	64	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24
6	63	51	43	38	57	47	40	35	40	34	30	33	29	26	26	23	21
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19
8	54	42	34	29	49	39	32	28	33	28	24	27	23	21	22	19	17
9	50	38	31	26	46	36	29	25	30	25	22	25	21	19	20	18	16
10	47	35	28	24	43	33	26	22	28	23	19	23	19	17	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2962	2962	2962
5°	2961	2907	2928
10°	2926	2843	2829
15°	2879	2742	2677
20°	2820	2605	2492
25°	2760	2454	2314
30°	2680	2299	2090
35°	2602	2133	1893
40°	2522	1963	1668
45°	2430	1775	1464
50°	2334	1585	1266
55°	2234	1384	1076
60°	2117	1175	881
65°	1983	962	787
70°	1820	765	705
75°	1614	661	632
80°	1321	533	533
85°	852	328	376

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2430 cd/sqm

TEST NUMBER: P923984

CATALOG NUMBER: DFN2DIP-4P2F0-030D040US950-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.9	1.9
10°-20°	304.3	5.2
20°-30°	427.3	7.4
30°-40°	465.7	8.0
40°-50°	428.1	7.4
50°-60°	336.2	5.8
60°-70°	218.8	3.8
70°-80°	112.6	1.9
80°-90°	32.2	0.6
90°-100°	74.7	1.3
100°-110°	237.3	4.1
110°-120°	406.1	7.0
120°-130°	534.0	9.2
130°-140°	599.4	10.3
140°-150°	587.8	10.1
150°-160°	493.1	8.5
160°-170°	327.0	5.6
170°-180°	114.3	2.0
0°-30°	842.5	14.5
0°-40°	1308.2	22.5
0°-60°	2072.5	35.7
0°-90°	2436.1	41.9
90°-120°	718.0	12.4
90°-150°	2439.3	42.0
90°-180°	3374.0	58.1
0°-180°	5809.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1183	1183	1183	1183	1183	
5°	1183	1178	1164	1173	1170	112
15°	1125	1113	1077	1057	1046	317
25°	1021	987	916	872	856	470
35°	880	825	731	664	640	551
45°	719	648	535	459	434	556
55°	547	464	348	284	263	489
65°	369	283	186	150	147	366
75°	197	122	86	78	77	208
85°	46	24	20	20	20	53
90°	1	13	36	34	34	6
95°	53	63	65	65	63	59
105°	219	222	224	226	226	231
115°	408	413	412	410	408	403
125°	593	602	599	596	594	530
135°	767	778	780	779	776	593
145°	931	938	944	945	941	582
155°	1064	1067	1070	1076	1072	490
165°	1158	1157	1157	1164	1159	327
175°	1205	1202	1200	1207	1201	114
180°	1207	1207	1207	1207	1207	

TEST NUMBER: P923984

CATALOG NUMBER: DFN2DIP-4P2F0-030D040US950-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1182.9	1182.9	1182.9	1182.9	1182.9
2.5°	1188.2	1182.9	1171.0	1181.8	1179.7
5°	1182.9	1177.5	1163.6	1173.2	1170.0
7.5°	1173.2	1166.8	1151.9	1156.1	1150.7
10°	1160.4	1152.9	1131.5	1128.2	1121.9
12.5°	1144.3	1134.7	1105.8	1099.4	1087.6
15°	1125.1	1113.2	1076.9	1056.6	1045.9
17.5°	1102.5	1085.5	1040.4	1017.0	999.8
20°	1076.9	1055.4	1001.9	975.3	951.6
22.5°	1049.1	1024.4	962.3	926.0	909.9
25°	1021.3	986.9	916.3	872.4	856.3
27.5°	988.1	951.6	873.5	823.2	798.5
30°	952.8	912.0	826.4	771.9	742.9
32.5°	918.4	869.2	781.5	717.2	690.4
35°	880.0	825.3	731.1	663.7	640.1
37.5°	842.5	783.5	684.0	610.1	583.5
40°	802.9	738.7	634.8	558.8	531.0
42.5°	762.2	693.7	585.6	506.3	479.6
45°	719.4	647.6	535.3	459.2	433.5
47.5°	678.7	602.7	487.1	411.0	387.5
50°	633.7	557.7	440.0	366.0	343.6
52.5°	589.8	509.5	395.1	324.4	304.0
55°	546.9	463.5	347.8	283.7	263.4
57.5°	503.1	417.5	306.2	246.2	229.1
60°	458.1	372.5	262.3	207.7	190.6
62.5°	414.3	328.7	224.8	173.4	164.9
65°	369.3	282.6	186.2	149.9	146.6
67.5°	326.6	239.7	149.9	131.7	128.4
70°	281.5	198.1	124.1	113.4	109.1
72.5°	238.7	159.4	103.8	95.3	93.1
75°	196.9	122.0	85.7	78.1	77.1
77.5°	155.2	86.6	67.4	63.2	61.0
80°	116.7	62.1	51.3	47.1	47.1
82.5°	81.3	41.8	35.3	33.2	33.2
85°	46.0	23.5	20.3	20.3	20.3
87.5°	17.2	8.5	8.5	7.5	7.5
90°	1.0	13.1	35.7	33.5	34.5
92.5°	22.5	30.5	31.7	32.7	32.7
95°	53.1	63.3	65.2	65.2	63.3
97.5°	88.4	97.9	101.9	101.9	101.9
100°	129.2	137.6	140.4	140.4	139.4
102.5°	172.1	178.3	182.3	183.4	182.3
105°	219.0	221.9	224.1	225.9	225.9
107.5°	265.6	270.0	270.0	270.6	265.6
110°	310.7	316.5	316.5	316.5	313.7

TEST NUMBER: P923984

CATALOG NUMBER: DFN2DIP-4P2F0-030D040US950-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	359.5	365.7	364.5	361.7	359.5
115°	407.5	413.4	411.5	410.4	407.5
117.5°	455.2	463.2	458.1	455.2	452.3
120°	503.2	511.2	503.2	503.2	499.9
122.5°	546.8	557.0	552.0	549.0	546.8
125°	592.7	601.8	598.9	595.6	594.5
127.5°	637.5	648.7	644.7	640.3	637.5
130°	679.2	692.4	690.6	688.4	684.4
132.5°	726.2	736.4	737.2	732.0	729.1
135°	766.6	777.9	780.1	778.9	776.1
137.5°	811.8	820.8	822.6	821.9	817.6
140°	851.3	860.5	865.6	865.6	861.6
142.5°	892.2	901.2	904.1	905.3	901.2
145°	930.7	938.0	943.8	944.9	940.9
147.5°	965.3	974.3	978.7	980.5	976.5
150°	1000.9	1007.1	1011.1	1014.4	1011.1
152.5°	1032.6	1038.7	1043.9	1047.9	1043.9
155°	1064.2	1067.1	1070.4	1075.5	1072.2
157.5°	1091.6	1093.7	1095.5	1102.8	1097.7
160°	1115.9	1118.1	1119.1	1125.3	1121.0
162.5°	1138.4	1138.4	1139.6	1146.4	1141.4
165°	1157.8	1156.6	1156.6	1163.9	1158.8
167.5°	1175.2	1171.9	1171.9	1179.2	1174.1
170°	1188.3	1185.3	1184.3	1191.5	1185.3
172.5°	1197.4	1194.5	1193.4	1200.7	1194.5
175°	1204.7	1201.8	1199.6	1206.8	1200.7
177.5°	1208.7	1205.8	1203.6	1209.8	1203.6
180°	1206.8	1206.8	1206.8	1206.8	1206.8

TEST NUMBER: P923984

CATALOG NUMBER: DFN2DIP-4P2F0-030D040US950-RLLFLL

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	9.98	10.75	11.01	11.78	13.17	5.94	6.71	6.97	7.74	9.13
	3H	11.63	12.32	12.67	13.36	14.76	7.10	7.79	8.14	8.83	10.24
	4H	12.22	12.87	13.27	13.91	15.33	7.54	8.19	8.59	9.23	10.64
	6H	12.62	13.22	13.68	14.27	15.69	7.84	8.43	8.90	9.48	10.91
	8H	12.73	13.30	13.80	14.37	15.79	7.91	8.48	8.98	9.55	10.97
	12H	12.79	13.33	13.86	14.38	15.83	7.95	8.49	9.02	9.54	10.99
4H	2H	9.99	10.64	11.04	11.68	13.09	6.52	7.17	7.57	8.21	9.62
	3H	11.78	12.32	12.85	13.40	14.82	7.84	8.38	8.90	9.45	10.87
	4H	12.45	12.95	13.53	14.01	15.46	8.36	8.86	9.43	9.92	11.37
	6H	12.94	13.37	14.02	14.45	15.90	8.76	9.18	9.84	10.27	11.71
	8H	13.11	13.50	14.19	14.58	16.04	8.87	9.27	9.95	10.35	11.80
	12H	13.18	13.54	14.28	14.64	16.10	8.92	9.28	10.02	10.37	11.83
8H	4H	12.41	12.81	13.49	13.89	15.34	8.63	9.02	9.71	10.10	11.56
	6H	12.95	13.28	14.05	14.40	15.85	9.11	9.44	10.22	10.56	12.01
	8H	13.15	13.44	14.26	14.54	16.01	9.29	9.58	10.40	10.68	12.15
	12H	13.27	13.52	14.38	14.62	16.13	9.39	9.64	10.50	10.74	12.25
12H	4H	12.36	12.72	13.46	13.81	15.27	8.62	8.98	9.72	10.07	11.53
	6H	12.92	13.21	14.03	14.31	15.79	9.16	9.44	10.27	10.55	12.02
	8H	13.13	13.38	14.24	14.48	15.99	9.35	9.60	10.46	10.70	12.21

END OF REPORT