

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: P924026

Luminaire Tested: DFN2DIP-4P3F0-030D040US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924026
REPORT IS A COMBINATION OF REPORTS P899051 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D040US950-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

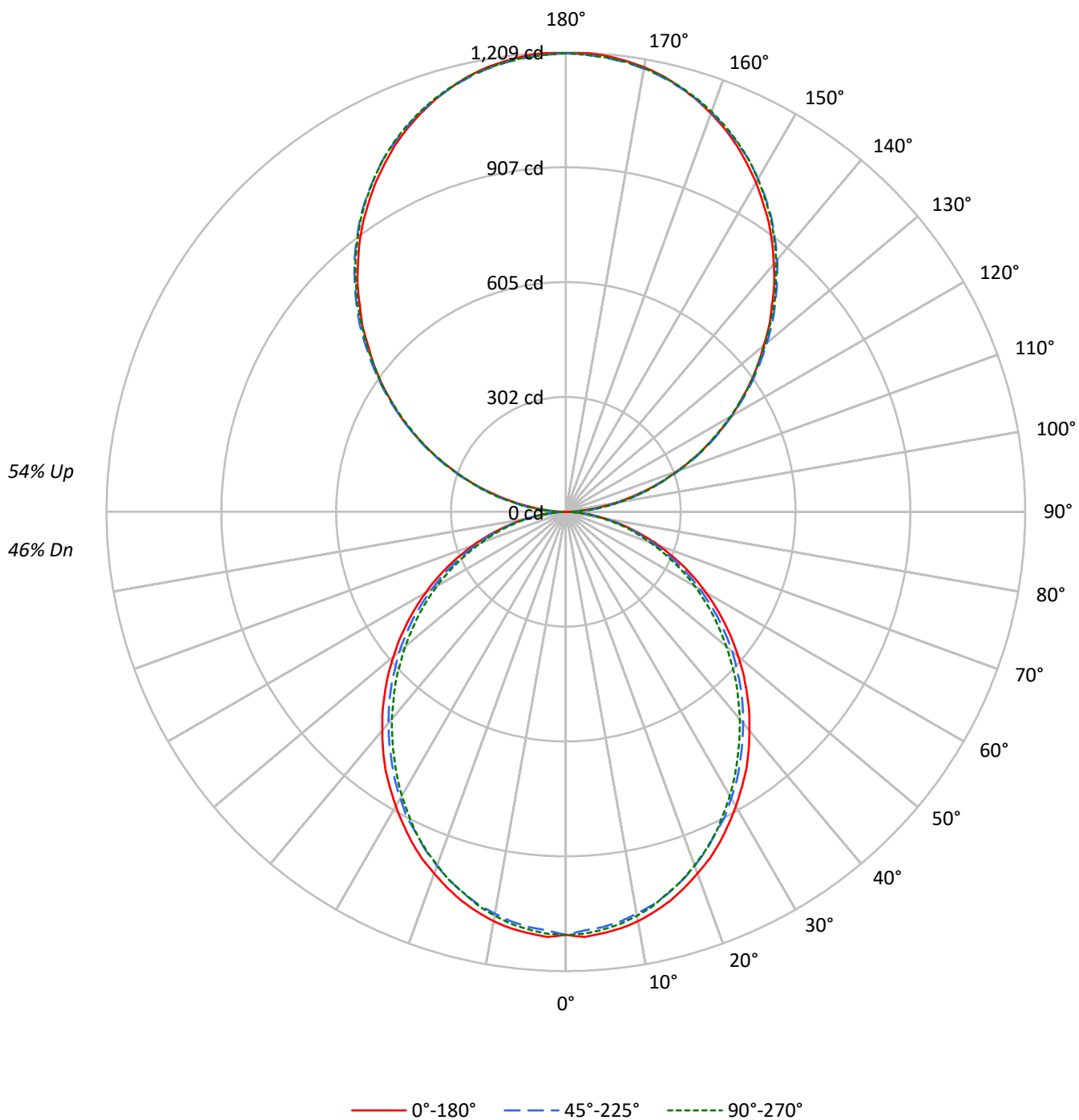
Lumens per Lamp: N/A
Luminaire Lumens: 6210.5 lumens
Efficiency: N/A
Efficacy: 111.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 55.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P924026

CATALOG NUMBER: DFN2DIP-4P3F0-030D040US950-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P924026

CATALOG NUMBER: DFN2DIP-4P3F0-030D040US950-FLLFLL

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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52
1	97	93	89	85	89	85	82	79	71	69	66	58	56	55	46	45	44
2	88	81	75	70	81	74	69	65	62	58	55	51	48	46	41	39	37
3	80	71	64	58	73	65	59	54	55	50	46	45	42	39	36	34	32
4	74	63	55	49	67	58	51	46	49	43	39	40	36	33	32	29	27
5	67	56	48	42	62	52	45	39	44	38	34	36	32	29	29	26	24
6	62	50	42	36	57	46	39	34	39	34	30	33	28	25	26	23	21
7	57	45	37	32	53	42	35	30	36	30	26	30	25	22	24	21	19
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	17
9	50	37	30	25	45	35	28	24	30	24	21	25	21	18	20	17	15
10	46	34	27	22	42	32	25	21	27	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1269	1269	1269
5°	1270	1251	1259
10°	1259	1233	1242
15°	1240	1212	1215
20°	1214	1183	1187
25°	1188	1148	1155
30°	1156	1116	1115
35°	1126	1078	1072
40°	1089	1040	1031
45°	1051	1001	989
50°	1011	961	941
55°	968	914	897
60°	920	859	846
65°	867	802	786
70°	799	732	721
75°	706	648	660
80°	593	540	546
85°	418	358	357

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1208 cd/sqm

TEST NUMBER: P924026

CATALOG NUMBER: DFN2DIP-4P3F0-030D040US950-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.8	1.7
10°-20°	294.9	4.7
20°-30°	433.4	7.0
30°-40°	503.4	8.1
40°-50°	502.7	8.1
50°-60°	438.4	7.1
60°-70°	324.1	5.2
70°-80°	183.3	3.0
80°-90°	51.8	0.8
90°-100°	74.7	1.2
100°-110°	237.3	3.8
110°-120°	406.1	6.5
120°-130°	534.0	8.6
130°-140°	599.4	9.7
140°-150°	587.8	9.5
150°-160°	493.1	7.9
160°-170°	327.0	5.3
170°-180°	114.3	1.8
0°-30°	833.1	13.4
0°-40°	1336.5	21.5
0°-60°	2277.6	36.7
0°-90°	2836.8	45.7
90°-120°	718.0	11.6
90°-150°	2439.3	39.3
90°-180°	3374.0	54.3
0°-180°	6210.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1114	1114	1114	1114	1114	
5°	1114	1109	1098	1106	1104	106
15°	1060	1054	1040	1044	1039	299
25°	959	951	933	935	933	441
35°	828	817	800	793	788	517
45°	674	666	650	638	634	520
55°	510	503	490	478	472	456
65°	344	337	327	317	312	340
75°	180	178	172	166	168	192
85°	44	43	42	38	38	49
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: P924026

CATALOG NUMBER: DFN2DIP-4P3F0-030D040US950-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1113.6	1113.6	1113.6	1113.6	1113.6
2.5°	1120.1	1114.7	1102.9	1113.6	1111.6
5°	1113.6	1109.4	1097.6	1106.2	1104.1
7.5°	1106.2	1099.8	1087.9	1096.6	1094.4
10°	1094.4	1086.9	1074.1	1082.6	1079.5
12.5°	1078.3	1071.9	1059.1	1064.4	1062.3
15°	1060.1	1053.8	1039.8	1044.1	1038.7
17.5°	1037.6	1031.3	1017.3	1022.6	1017.3
20°	1013.0	1006.6	991.6	994.7	990.5
22.5°	988.4	978.8	964.8	964.8	962.6
25°	959.4	950.9	932.7	934.8	932.7
27.5°	927.3	919.8	905.9	902.8	897.4
30°	895.2	886.6	870.6	867.4	863.1
32.5°	861.0	854.6	837.4	830.9	826.6
35°	827.8	817.1	799.9	793.4	788.1
37.5°	790.3	780.7	763.5	755.9	750.6
40°	751.8	743.2	726.0	716.5	712.2
42.5°	714.3	705.7	688.6	677.8	671.4
45°	673.6	666.1	650.0	638.2	633.9
47.5°	633.9	626.5	609.3	597.5	591.1
50°	592.1	586.8	571.8	556.8	551.5
52.5°	551.5	544.0	530.1	518.3	510.8
55°	509.8	503.3	490.5	477.7	472.3
57.5°	467.9	462.6	448.7	435.8	431.5
60°	426.2	422.0	407.0	395.1	392.0
62.5°	385.5	378.0	367.3	356.6	352.3
65°	343.8	337.3	326.6	317.0	311.7
67.5°	301.0	295.5	285.9	278.5	274.2
70°	261.3	257.0	247.4	239.8	235.6
72.5°	220.7	216.3	210.9	203.5	200.3
75°	179.8	177.8	172.4	166.0	168.2
77.5°	143.5	139.2	137.0	133.8	130.7
80°	107.1	106.0	103.8	100.6	98.5
82.5°	72.8	72.8	71.8	67.4	67.4
85°	43.9	42.8	41.8	38.5	37.5
87.5°	19.3	17.2	15.0	11.8	10.7
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: P924026

CATALOG NUMBER: DFN2DIP-4P3F0-030D040US950-FLLFLL

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: P924026

CATALOG NUMBER: DFN2DIP-4P3F0-030D040US950-FLLFLL

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	7.65	8.47	8.64	9.48	10.81	7.21	8.03	8.20	9.04	10.37
	3H	9.30	10.04	10.31	11.06	12.41	8.81	9.55	9.82	10.57	11.92
	4H	9.89	10.59	10.90	11.60	12.96	9.39	10.09	10.41	11.11	12.47
	6H	10.28	10.93	11.31	11.95	13.32	9.78	10.43	10.81	11.45	12.82
	8H	10.38	11.00	11.42	12.04	13.40	9.88	10.50	10.91	11.53	12.90
	12H	10.43	11.01	11.47	12.04	13.44	9.92	10.50	10.96	11.53	12.93
4H	2H	8.10	8.80	9.13	9.82	11.18	7.75	8.45	8.77	9.47	10.83
	3H	9.96	10.54	10.99	11.59	12.96	9.55	10.14	10.58	11.18	12.56
	4H	10.67	11.20	11.71	12.24	13.64	10.25	10.78	11.28	11.82	13.21
	6H	11.18	11.64	12.23	12.70	14.09	10.75	11.21	11.80	12.27	13.66
	8H	11.32	11.75	12.37	12.81	14.22	10.89	11.32	11.94	12.37	13.78
	12H	11.39	11.78	12.46	12.85	14.26	10.94	11.33	12.01	12.40	13.81
8H	4H	10.86	11.29	11.91	12.34	13.75	10.48	10.91	11.53	11.97	13.37
	6H	11.48	11.84	12.56	12.93	14.34	11.10	11.45	12.17	12.55	13.95
	8H	11.70	12.01	12.78	13.09	14.52	11.31	11.62	12.39	12.70	14.12
	12H	11.83	12.10	12.91	13.18	14.64	11.42	11.69	12.50	12.76	14.23
12H	4H	10.84	11.23	11.91	12.30	13.71	10.47	10.86	11.54	11.93	13.34
	6H	11.51	11.82	12.59	12.90	14.33	11.14	11.45	12.22	12.53	13.95
	8H	11.75	12.02	12.83	13.10	14.56	11.37	11.64	12.45	12.71	14.18