

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: P915846

Luminaire Tested: DFN2DIP-4P3F0-030D050US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915846
REPORT IS A COMBINATION OF REPORTS P899061 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D050US930-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

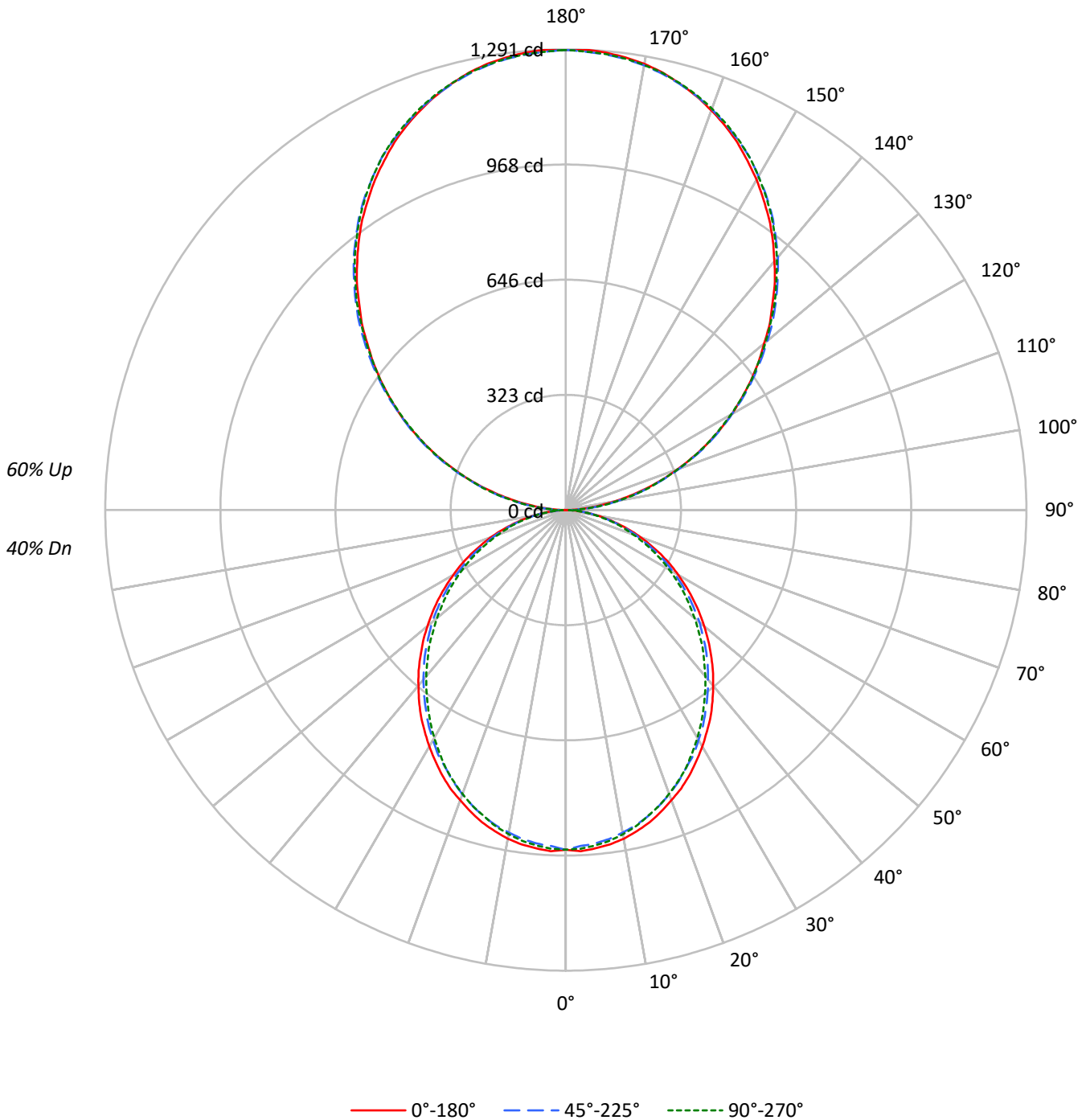
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6029.1 lumens
Efficiency: N/A
Efficacy: 94.1 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): 64.1
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: P915846
CATALOG NUMBER: DFN2DIP-4P3F0-030D050US930-FLLFLL

Luminous Intensity Polar Plot





TEST NUMBER: P915846

CATALOG NUMBER: DFN2DIP-4P3F0-030D050US930-FLLFLL

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	50	30	10	0
RCR																					
0	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47	47	47	47	40
1	96	91	87	84	87	83	80	77	68	66	64	54	53	51	42	41	40	40	40	40	34
2	87	80	74	69	79	73	68	63	60	56	53	48	45	43	37	35	33	33	33	33	28
3	79	70	63	57	72	64	58	53	53	48	44	42	39	36	32	30	28	28	28	28	24
4	73	62	54	48	66	57	50	45	47	42	38	38	34	31	29	27	25	25	25	25	21
5	67	55	47	41	60	51	44	38	42	37	33	34	30	27	26	23	21	21	21	21	18
6	61	49	41	36	56	45	38	33	38	32	28	30	27	24	24	21	19	19	19	19	16
7	57	45	37	31	51	41	34	29	34	29	25	28	24	21	22	19	17	17	17	17	14
8	52	40	33	28	48	37	30	26	31	26	22	25	21	18	20	17	15	15	15	15	13
9	49	37	29	24	44	34	27	23	28	23	20	23	19	17	18	16	14	14	14	14	11
10	46	34	27	22	41	31	25	20	26	21	18	21	18	15	17	14	12	12	12	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1085	1085	1085
5°	1086	1069	1076
10°	1076	1054	1061
15°	1060	1036	1038
20°	1038	1011	1015
25°	1016	981	987
30°	988	954	953
35°	962	921	916
40°	930	889	881
45°	899	856	846
50°	864	821	804
55°	827	781	766
60°	786	734	723
65°	741	685	671
70°	683	625	616
75°	603	554	564
80°	507	462	466
85°	357	306	305

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1292 cd/sqm



TEST NUMBER: P915846

CATALOG NUMBER: DFN2DIP-4P3F0-030D050US930-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	89.6	1.5
10°-20°	252.0	4.2
20°-30°	370.4	6.1
30°-40°	430.2	7.1
40°-50°	429.7	7.1
50°-60°	374.6	6.2
60°-70°	277.0	4.6
70°-80°	156.7	2.6
80°-90°	45.0	0.7
90°-100°	79.8	1.3
100°-110°	253.5	4.2
110°-120°	433.8	7.2
120°-130°	570.5	9.5
130°-140°	640.4	10.6
140°-150°	627.9	10.4
150°-160°	526.8	8.7
160°-170°	349.3	5.8
170°-180°	122.1	2.0
0°-30°	712.0	11.8
0°-40°	1142.2	18.9
0°-60°	1946.5	32.3
0°-90°	2425.1	40.2
90°-120°	767.0	12.7
90°-150°	2605.8	43.2
90°-180°	3604.0	59.8
0°-180°	6029.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	952	952	952	952	952	
5°	952	948	938	945	944	90
15°	906	901	889	892	888	255
25°	820	813	797	799	797	377
35°	707	698	684	678	674	442
45°	576	569	556	545	542	444
55°	436	430	419	408	404	390
65°	294	288	279	271	266	290
75°	154	152	147	142	144	164
85°	38	37	36	33	32	42
90°	1	14	38	36	37	6
95°	57	68	70	70	68	63
105°	234	237	240	241	241	247
115°	435	442	440	438	435	431
125°	633	643	640	636	635	566
135°	819	831	833	832	829	633
145°	994	1002	1008	1009	1005	621
155°	1137	1140	1144	1149	1145	523
165°	1237	1236	1236	1243	1238	349
175°	1287	1284	1282	1289	1283	122
180°	1289	1289	1289	1289	1289	



TEST NUMBER: P915846

CATALOG NUMBER: DFN2DIP-4P3F0-030D050US930-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	951.7	951.7	951.7	951.7	951.7
2.5°	957.2	952.7	942.6	951.7	950.0
5°	951.7	948.1	938.0	945.3	943.5
7.5°	945.3	939.9	929.8	937.2	935.3
10°	935.3	928.9	917.9	925.2	922.5
12.5°	921.5	916.1	905.1	909.6	907.8
15°	906.0	900.6	888.6	892.3	887.7
17.5°	886.7	881.3	869.4	873.9	869.4
20°	865.7	860.2	847.4	850.1	846.5
22.5°	844.7	836.5	824.5	824.5	822.6
25°	819.9	812.7	797.1	798.9	797.1
27.5°	792.5	786.0	774.2	771.5	767.0
30°	765.1	757.7	744.0	741.3	737.6
32.5°	735.8	730.3	715.7	710.1	706.5
35°	707.4	698.3	683.6	678.1	673.5
37.5°	675.4	667.2	652.5	646.0	641.5
40°	642.5	635.1	620.4	612.3	608.6
42.5°	610.4	603.1	588.5	579.3	573.8
45°	575.7	569.2	555.5	545.4	541.8
47.5°	541.8	535.4	520.7	510.6	505.2
50°	506.1	501.5	488.7	475.9	471.3
52.5°	471.3	464.9	453.1	443.0	436.5
55°	435.7	430.2	419.1	408.2	403.7
57.5°	399.9	395.3	383.4	372.4	368.8
60°	364.2	360.6	347.8	337.7	335.0
62.5°	329.5	323.0	313.9	304.8	301.1
65°	293.8	288.3	279.2	270.9	266.4
67.5°	257.2	252.6	244.3	238.0	234.3
70°	223.3	219.6	211.4	205.0	201.4
72.5°	188.6	184.8	180.3	173.9	171.2
75°	153.7	152.0	147.3	141.9	143.7
77.5°	122.6	119.0	117.1	114.4	111.7
80°	91.6	90.6	88.7	86.0	84.2
82.5°	62.2	62.2	61.4	57.6	57.6
85°	37.5	36.6	35.7	32.9	32.0
87.5°	16.5	14.7	12.8	10.1	9.1
90°	1.1	14.0	38.1	35.8	36.9
92.5°	24.1	32.6	33.8	35.0	35.0
95°	56.7	67.7	69.5	69.5	67.7
97.5°	94.4	104.5	108.8	108.8	108.8
100°	137.9	146.9	150.0	150.0	148.9
102.5°	183.8	190.5	194.7	195.9	194.7
105°	234.0	237.1	239.5	241.3	241.3
107.5°	283.7	288.4	288.4	289.2	283.7
110°	331.9	338.2	338.2	338.2	335.0



TEST NUMBER: P915846

CATALOG NUMBER: DFN2DIP-4P3F0-030D050US930-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	384.0	390.6	389.5	386.4	384.0
115°	435.3	441.6	439.6	438.5	435.3
117.5°	486.2	494.8	489.3	486.2	483.1
120°	537.5	546.1	537.5	537.5	534.0
122.5°	584.2	595.1	589.6	586.5	584.2
125°	633.2	642.9	639.8	636.3	635.1
127.5°	680.9	693.0	688.8	684.0	680.9
130°	725.7	739.6	737.7	735.4	731.1
132.5°	775.8	786.7	787.5	782.0	778.9
135°	819.0	831.0	833.3	832.2	829.1
137.5°	867.2	876.9	878.8	878.0	873.3
140°	909.5	919.2	924.6	924.6	920.4
142.5°	953.0	962.8	965.9	967.0	962.8
145°	994.3	1002.0	1008.2	1009.4	1005.1
147.5°	1031.2	1040.9	1045.5	1047.5	1043.2
150°	1069.3	1075.9	1080.1	1083.6	1080.1
152.5°	1103.1	1109.7	1115.1	1119.4	1115.1
155°	1136.9	1140.0	1143.5	1148.9	1145.4
157.5°	1166.0	1168.3	1170.3	1178.1	1172.6
160°	1192.0	1194.4	1195.6	1202.2	1197.5
162.5°	1216.2	1216.2	1217.3	1224.7	1219.3
165°	1236.8	1235.6	1235.6	1243.4	1237.9
167.5°	1255.4	1251.9	1251.9	1259.7	1254.3
170°	1269.4	1266.3	1265.2	1272.9	1266.3
172.5°	1279.1	1276.0	1274.9	1282.6	1276.0
175°	1286.9	1283.8	1281.5	1289.2	1282.6
177.5°	1291.2	1288.1	1285.7	1292.3	1285.7
180°	1289.2	1289.2	1289.2	1289.2	1289.2



TEST NUMBER: P915846
 CATALOG NUMBER: DFN2DIP-4P3F0-030D050US930-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	6.54	7.32	7.58	8.36	9.77	6.10	6.88	7.13	7.92	9.32
	3H	8.19	8.89	9.24	9.94	11.37	7.70	8.40	8.75	9.45	10.88
	4H	8.77	9.43	9.83	10.49	11.92	8.28	8.94	9.34	9.99	11.43
	6H	9.16	9.77	10.23	10.83	12.27	8.66	9.27	9.73	10.33	11.78
	8H	9.26	9.85	10.34	10.92	12.36	8.76	9.34	9.84	10.42	11.86
	12H	9.31	9.86	10.39	10.93	12.39	8.80	9.35	9.88	10.42	11.88
4H	2H	6.99	7.65	8.05	8.71	10.14	6.63	7.30	7.70	8.35	9.78
	3H	8.84	9.39	9.91	10.48	11.92	8.43	8.99	9.51	10.07	11.51
	4H	9.55	10.06	10.63	11.13	12.59	9.13	9.63	10.20	10.70	12.17
	6H	10.06	10.49	11.14	11.59	13.05	9.62	10.06	10.71	11.15	12.61
	8H	10.20	10.61	11.29	11.70	13.17	9.76	10.17	10.85	11.26	12.73
	12H	10.27	10.64	11.37	11.74	13.22	9.82	10.19	10.92	11.29	12.77
8H	4H	9.73	10.14	10.82	11.23	12.70	9.36	9.76	10.45	10.85	12.33
	6H	10.36	10.69	11.47	11.82	13.29	9.97	10.31	11.08	11.44	12.91
	8H	10.57	10.87	11.69	11.98	13.47	10.18	10.48	11.30	11.59	13.08
	12H	10.70	10.96	11.82	12.06	13.59	10.29	10.55	11.41	11.65	13.18
12H	4H	9.72	10.08	10.82	11.18	12.66	9.35	9.72	10.45	10.82	12.30
	6H	10.38	10.68	11.50	11.79	13.28	10.01	10.31	11.13	11.42	12.91
	8H	10.62	10.88	11.74	11.99	13.51	10.24	10.50	11.36	11.60	13.13