

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: P916561

Luminaire Tested: DFN2DIP-PN2F0-050D050US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916561
REPORT IS A COMBINATION OF REPORTS P901017 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-050D050US930-FLLONL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

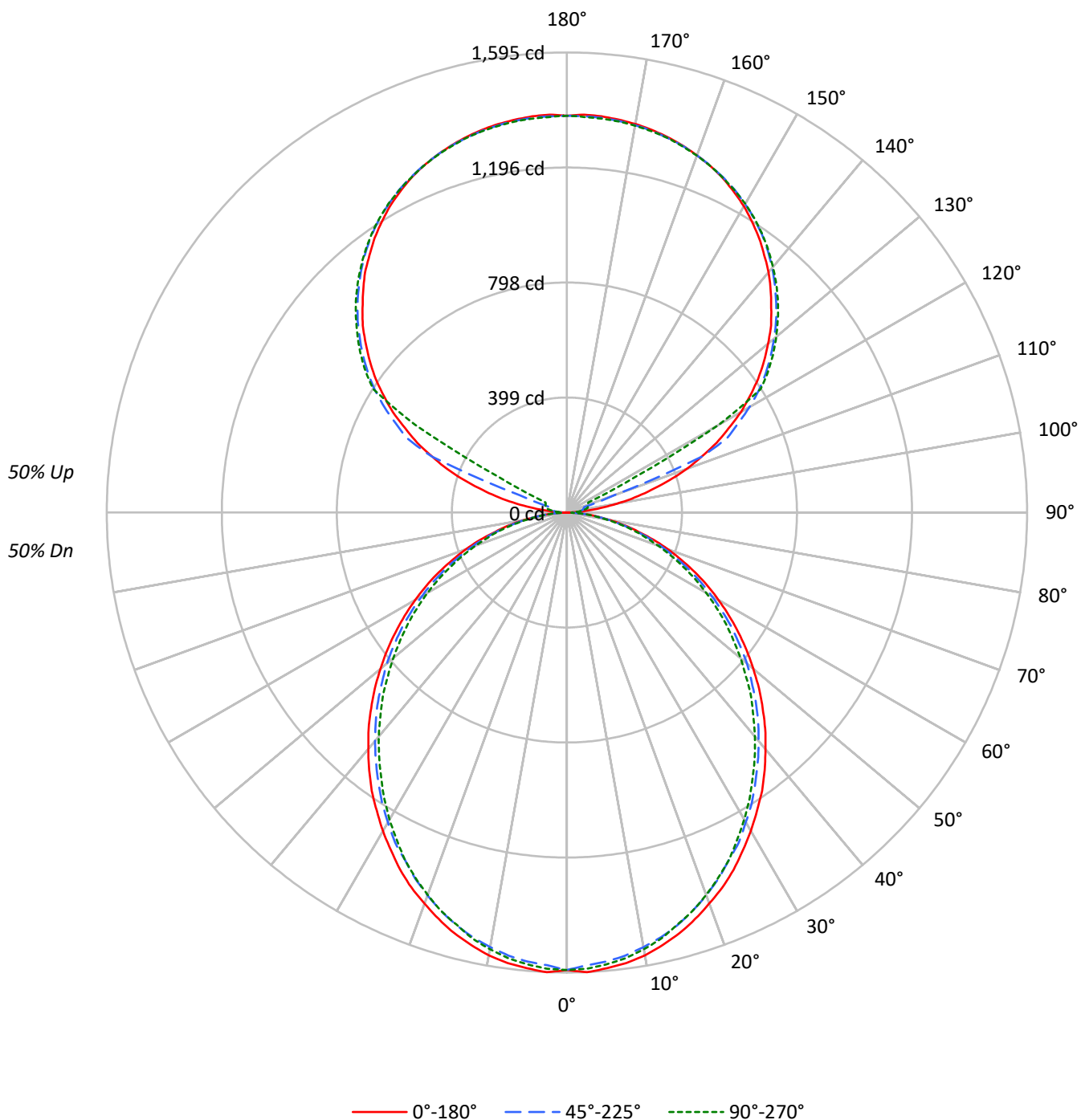
Lumens per Lamp: N/A
Luminaire Lumens: 8071.5 lumens
Efficiency: N/A
Efficacy: 87.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 92.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P916561

CATALOG NUMBER: DFN2DIP-PN2F0-050D050US930-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P916561

CATALOG NUMBER: DFN2DIP-PN2F0-050D050US930-FLLONL

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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56
1	98	93	90	86	90	86	83	80	73	71	68	61	59	58	50	48	47
2	89	82	75	70	82	76	70	66	64	60	57	53	51	48	44	42	40
3	81	72	64	59	75	66	60	55	56	52	48	47	44	41	39	36	34
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	29
5	68	57	48	42	63	53	45	40	45	39	35	38	34	30	31	28	26
6	63	51	43	37	58	47	40	35	40	35	31	34	30	27	28	25	23
7	58	46	38	32	53	43	36	30	37	31	27	31	27	23	26	23	20
8	54	42	34	29	50	39	32	27	33	28	24	28	24	21	24	20	18
9	50	38	30	25	46	35	29	24	31	25	21	26	22	19	22	19	16
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3436	3436	3436
5°	3435	3380	3405
10°	3402	3327	3354
15°	3346	3265	3277
20°	3273	3182	3199
25°	3201	3084	3108
30°	3110	2992	2995
35°	3025	2884	2876
40°	2920	2776	2761
45°	2815	2667	2644
50°	2701	2551	2509
55°	2581	2418	2384
60°	2444	2262	2240
65°	2294	2099	2070
70°	2104	1900	1887
75°	1843	1661	1711
80°	1525	1357	1388
85°	1035	857	870

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2815 cd/sqm

TEST NUMBER: P916561

CATALOG NUMBER: DFN2DIP-PN2F0-050D050US930-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.3	1.8
10°-20°	420.0	5.2
20°-30°	617.3	7.6
30°-40°	717.0	8.9
40°-50°	716.1	8.9
50°-60°	624.4	7.7
60°-70°	461.6	5.7
70°-80°	261.1	3.2
80°-90°	71.3	0.9
90°-100°	45.4	0.6
100°-110°	169.1	2.1
110°-120°	448.5	5.6
120°-130°	743.9	9.2
130°-140°	790.2	9.8
140°-150°	734.4	9.1
150°-160°	590.4	7.3
160°-170°	380.5	4.7
170°-180°	130.9	1.6
0°-30°	1186.6	14.7
0°-40°	1903.6	23.6
0°-60°	3244.1	40.2
0°-90°	4038.1	50.0
90°-120°	663.0	8.2
90°-150°	2931.5	36.3
90°-180°	4033.0	50.0
0°-180°	8071.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1586	1586	1586	1586	1586	
5°	1586	1580	1563	1576	1573	151
15°	1510	1501	1481	1487	1480	425
25°	1367	1354	1328	1332	1328	629
35°	1179	1164	1139	1130	1123	736
45°	959	949	926	909	903	740
55°	726	717	698	680	673	649
65°	490	480	465	452	444	484
75°	256	253	246	236	240	273
85°	62	61	60	55	53	70
90°	1	12	20	25	27	7
95°	65	32	39	44	43	77
105°	303	333	61	72	76	323
115°	572	589	614	153	82	564
125°	809	822	841	848	851	722
135°	1002	1018	1026	1036	1034	774
145°	1162	1161	1178	1185	1180	727
155°	1279	1270	1282	1288	1280	589
165°	1348	1342	1345	1352	1345	381
175°	1379	1372	1374	1381	1371	131
180°	1376	1376	1376	1376	1376	

TEST NUMBER: P916561

CATALOG NUMBER: DFN2DIP-PN2F0-050D050US930-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1586.2	1586.2	1586.2	1586.2	1586.2
2.5°	1595.4	1587.8	1571.0	1586.2	1583.3
5°	1586.2	1580.2	1563.3	1575.5	1572.6
7.5°	1575.5	1566.4	1549.6	1561.9	1558.9
10°	1558.9	1548.2	1529.9	1542.0	1537.5
12.5°	1535.9	1526.8	1508.5	1516.1	1513.0
15°	1509.9	1500.9	1481.0	1487.2	1479.5
17.5°	1477.9	1468.8	1448.9	1456.5	1448.9
20°	1442.8	1433.8	1412.4	1416.9	1411.0
22.5°	1407.9	1394.1	1374.2	1374.2	1371.1
25°	1366.6	1354.5	1328.5	1331.5	1328.5
27.5°	1320.8	1310.1	1290.4	1285.8	1278.2
30°	1275.1	1262.9	1240.1	1235.5	1229.4
32.5°	1226.3	1217.2	1192.8	1183.6	1177.5
35°	1179.0	1163.8	1139.4	1130.2	1122.6
37.5°	1125.6	1111.9	1087.4	1076.8	1069.2
40°	1070.8	1058.5	1034.0	1020.4	1014.3
42.5°	1017.4	1005.1	980.8	965.4	956.3
45°	959.4	948.8	925.8	909.1	902.9
47.5°	902.9	892.3	867.9	851.0	842.0
50°	843.4	835.8	814.5	793.1	785.5
52.5°	785.5	774.8	755.0	738.3	727.6
55°	726.1	716.9	698.5	680.3	672.7
57.5°	666.5	658.9	639.0	620.8	614.6
60°	607.0	601.0	579.7	562.8	558.3
62.5°	549.1	538.4	523.2	507.9	501.8
65°	489.7	480.5	465.2	451.5	443.8
67.5°	428.7	420.9	407.3	396.6	390.4
70°	372.2	366.1	352.3	341.6	335.7
72.5°	314.3	308.1	300.5	289.8	285.3
75°	256.2	253.2	245.5	236.4	239.5
77.5°	204.4	198.2	195.2	190.6	186.1
80°	152.6	151.0	147.9	143.4	140.3
82.5°	103.7	103.7	102.2	96.1	96.1
85°	62.5	61.0	59.5	54.9	53.4
87.5°	27.5	24.5	21.4	16.8	15.2
90°	1.0	11.9	19.9	24.9	26.8
92.5°	24.9	21.0	23.9	25.9	26.8
95°	64.7	31.8	38.8	43.9	42.8
97.5°	116.4	34.9	50.7	53.8	54.7
100°	176.3	39.9	56.7	64.7	66.7
102.5°	241.9	239.9	58.8	69.6	72.7
105°	302.6	332.6	60.7	71.7	75.7
107.5°	373.3	398.1	62.8	73.6	77.7
110°	441.1	461.9	174.2	74.7	78.6

TEST NUMBER: P916561

CATALOG NUMBER: DFN2DIP-PN2F0-050D050US930-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	504.8	522.6	505.7	76.6	79.7
115°	572.4	589.3	614.2	153.4	81.7
117.5°	631.1	651.0	668.1	525.5	264.8
120°	696.8	711.8	729.7	741.7	607.2
122.5°	752.5	768.5	788.5	794.4	795.5
125°	809.3	822.3	841.2	848.2	851.2
127.5°	861.0	875.0	890.1	899.9	900.9
130°	909.9	925.9	936.7	947.7	946.8
132.5°	959.7	972.7	983.5	992.5	991.6
135°	1001.5	1017.5	1026.3	1036.4	1034.4
137.5°	1045.2	1057.2	1067.2	1077.2	1074.2
140°	1088.0	1096.1	1106.9	1115.9	1111.0
142.5°	1124.0	1131.0	1143.9	1151.8	1146.8
145°	1161.8	1160.7	1177.6	1184.6	1179.7
147.5°	1194.6	1191.6	1208.5	1213.5	1209.6
150°	1226.5	1219.5	1235.4	1241.4	1236.4
152.5°	1253.3	1245.4	1260.3	1266.3	1259.3
155°	1279.2	1270.3	1282.2	1288.2	1280.3
157.5°	1300.1	1292.2	1301.1	1308.1	1300.1
160°	1318.1	1312.1	1318.1	1324.0	1317.0
162.5°	1333.9	1328.0	1332.9	1339.9	1331.0
165°	1347.9	1342.0	1344.9	1351.8	1344.9
167.5°	1358.9	1352.8	1355.9	1362.9	1353.9
170°	1367.8	1361.8	1363.8	1370.8	1361.8
172.5°	1373.8	1367.8	1369.9	1376.8	1367.8
175°	1378.8	1371.7	1373.8	1380.7	1370.8
177.5°	1380.7	1373.8	1374.8	1381.8	1372.8
180°	1375.7	1375.7	1375.7	1375.7	1375.7

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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	11.45	12.31	12.40	13.28	14.55	11.01	11.87	11.97	12.84	14.11
	3H	13.09	13.86	14.05	14.84	16.13	12.61	13.38	13.57	14.36	15.65
	4H	13.66	14.39	14.64	15.38	16.68	13.18	13.91	14.16	14.90	16.20
	6H	14.04	14.72	15.04	15.71	17.02	13.56	14.23	14.55	15.22	16.54
	8H	14.14	14.78	15.14	15.79	17.10	13.65	14.30	14.65	15.30	16.61
	12H	14.18	14.79	15.19	15.79	17.13	13.69	14.30	14.69	15.30	16.64
4H	2H	11.90	12.63	12.88	13.61	14.92	11.55	12.28	12.54	13.26	14.57
	3H	13.74	14.35	14.74	15.36	16.68	13.34	13.95	14.34	14.96	16.28
	4H	14.44	15.00	15.44	16.00	17.34	14.02	14.58	15.03	15.59	16.93
	6H	14.93	15.41	15.95	16.45	17.78	14.51	14.99	15.53	16.03	17.36
	8H	15.07	15.52	16.09	16.55	17.90	14.65	15.10	15.67	16.12	17.47
	12H	15.14	15.54	16.17	16.58	17.94	14.70	15.11	15.74	16.15	17.50
8H	4H	14.62	15.07	15.64	16.10	17.45	14.25	14.70	15.27	15.73	17.08
	6H	15.23	15.60	16.27	16.67	18.02	14.86	15.23	15.90	16.29	17.64
	8H	15.44	15.76	16.49	16.82	18.18	15.06	15.38	16.11	16.43	17.80
	12H	15.55	15.84	16.61	16.89	18.30	15.16	15.45	16.21	16.49	17.90
12H	4H	14.61	15.01	15.64	16.05	17.41	14.25	14.65	15.28	15.69	17.05
	6H	15.26	15.58	16.31	16.63	18.00	14.89	15.22	15.94	16.27	17.64
	8H	15.48	15.77	16.54	16.81	18.23	15.11	15.40	16.17	16.45	17.86