

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: P929962

Luminaire Tested: DFN2DS-4P4F0-040DS935-RLL

Issue Date: 11/20/2024

**Test Information**

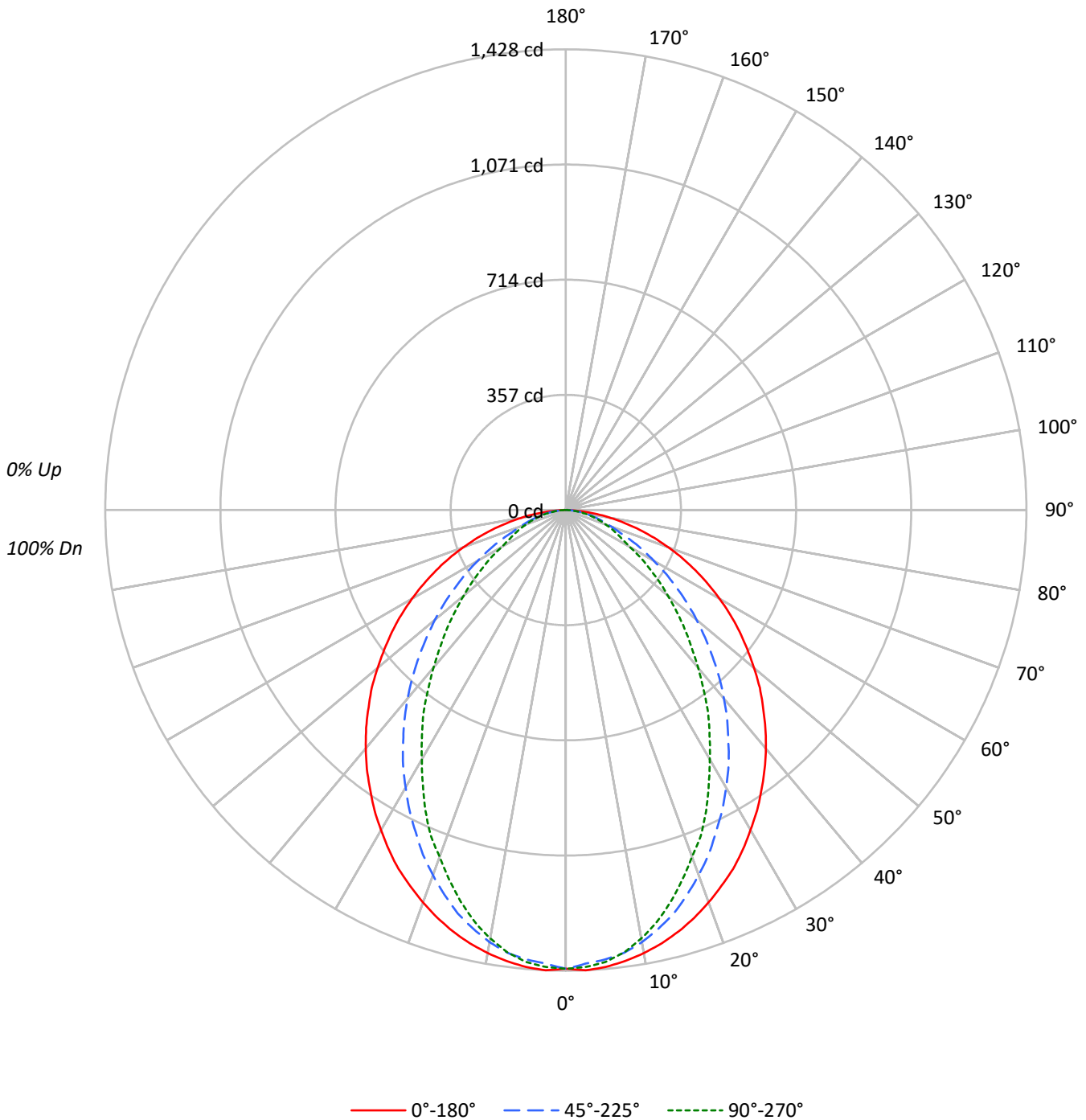
Test Method: LM-79-2019  
Report Number: P929962  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333882)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/20/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DS-4P4F0-040DS935-RLL  
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2924.0 lumens  
Efficiency: N/A  
Efficacy: 74.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular (W 4.07' x L: 4.07' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 39.3  
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: P929962  
CATALOG NUMBER: DFN2DS-4P4F0-040DS935-RLL

### Luminous Intensity Polar Plot





TEST NUMBER: P929962

CATALOG NUMBER: DFN2DS-4P4F0-040DS935-RLL

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	88	88	88	86
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	76	76	76	74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66	66	66	66	64
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	57	57	57	57	55
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	51	51	51	49
6	74	61	53	47	72	60	52	46	58	51	46	57	50	46	55	50	45	45	45	45	43
7	68	56	47	42	67	55	47	42	53	46	41	52	46	41	51	45	41	41	41	41	39
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	37	37	37	35
9	60	47	39	34	59	47	39	34	46	39	34	44	38	34	44	38	34	34	34	34	32
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	31	31	31	29

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	922	922	922
5°	926	911	916
10°	919	896	888
15°	908	869	844
20°	894	831	790
25°	879	788	737
30°	858	744	669
35°	838	696	609
40°	817	646	540
45°	793	590	478
50°	769	534	417
55°	744	473	358
60°	715	409	297
65°	681	344	270
70°	642	283	249
75°	593	258	232
80°	524	231	212
85°	412	182	182

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 793 cd/sqm



TEST NUMBER: P929962  
 CATALOG NUMBER: DFN2DS-4P4F0-040DS935-RLL

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	133.2	4.6
10°-20°	365.8	12.5
20°-30°	513.6	17.6
30°-40°	559.8	19.1
40°-50°	514.5	17.6
50°-60°	404.1	13.8
60°-70°	263.0	9.0
70°-80°	135.4	4.6
80°-90°	34.6	1.2
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1012.6	34.6
0°-40°	1572.4	53.8
0°-60°	2491.0	85.2
0°-90°	2924.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2924.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1422	1422	1422	1422	1422	
5°	1422	1415	1398	1410	1406	135
15°	1352	1338	1294	1270	1257	381
25°	1228	1186	1101	1049	1029	565
35°	1058	992	879	798	769	662
45°	865	778	643	552	521	668
55°	658	557	418	341	317	588
65°	444	340	224	180	176	440
75°	237	147	103	94	93	250
85°	55	28	24	24	24	66
90°	0	0	0	0	0	



TEST NUMBER: P929962

CATALOG NUMBER: DFN2DS-4P4F0-040DS935-RLL

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1421.8	1421.8	1421.8	1421.8	1421.8
2.5°	1428.2	1421.8	1407.6	1420.5	1417.9
5°	1421.8	1415.3	1398.5	1410.1	1406.4
7.5°	1410.1	1402.5	1384.5	1389.5	1383.1
10°	1394.7	1385.7	1360.0	1356.0	1348.5
12.5°	1375.5	1363.9	1329.0	1321.4	1307.2
15°	1352.3	1338.1	1294.4	1270.0	1257.1
17.5°	1325.3	1304.6	1250.5	1222.3	1201.7
20°	1294.4	1268.6	1204.3	1172.2	1143.8
22.5°	1260.9	1231.3	1156.6	1112.9	1093.7
25°	1227.5	1186.3	1101.3	1048.7	1029.2
27.5°	1187.7	1143.8	1049.9	989.4	959.8
30°	1145.2	1096.2	993.2	927.7	892.9
32.5°	1104.0	1044.7	939.3	862.1	829.8
35°	1057.7	992.0	878.8	797.7	769.4
37.5°	1012.6	941.8	822.2	733.3	701.2
40°	965.0	887.9	763.0	671.7	638.2
42.5°	916.1	833.8	703.8	608.5	576.5
45°	864.6	778.4	643.4	551.9	521.1
47.5°	815.8	724.5	585.5	494.1	465.8
50°	761.7	670.4	528.8	440.0	413.1
52.5°	708.9	612.4	474.8	389.8	365.4
55°	657.5	557.1	418.1	341.0	316.6
57.5°	604.8	501.8	368.0	295.9	275.4
60°	550.7	447.7	315.2	249.7	229.1
62.5°	498.0	395.1	270.1	208.5	198.2
65°	443.9	339.6	223.9	180.2	176.2
67.5°	392.5	288.2	180.2	158.2	154.4
70°	338.4	238.0	149.2	136.4	131.2
72.5°	287.0	191.7	124.8	114.6	112.0
75°	236.7	146.6	102.9	93.9	92.7
77.5°	186.6	104.1	81.1	75.9	73.3
80°	140.2	74.6	61.7	56.7	56.7
82.5°	97.8	50.2	42.5	39.8	39.8
85°	55.3	28.3	24.4	24.4	24.4
87.5°	20.6	10.2	10.2	9.0	9.0
90°	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P929962  
 CATALOG NUMBER: DFN2DS-4P4F0-040DS935-RLL

**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	10.95	12.48	11.32	12.79	13.10	6.91	8.44	7.28	8.75	9.06
	3H	12.72	14.08	13.10	14.41	14.77	8.18	9.54	8.56	9.87	10.23
	4H	13.39	14.67	13.79	15.01	15.39	8.68	9.96	9.08	10.31	10.69
	6H	13.87	15.06	14.29	15.42	15.82	9.06	10.25	9.47	10.61	11.00
	8H	14.04	15.17	14.47	15.56	15.96	9.19	10.31	9.61	10.70	11.10
	12H	14.14	15.22	14.57	15.60	16.03	9.27	10.35	9.70	10.73	11.16
4H	2H	11.06	12.34	11.46	12.69	13.07	7.61	8.89	8.01	9.24	9.62
	3H	12.99	14.05	13.40	14.45	14.85	9.05	10.12	9.46	10.52	10.92
	4H	13.74	14.70	14.17	15.11	15.55	9.65	10.61	10.09	11.02	11.46
	6H	14.33	15.16	14.79	15.61	16.07	10.14	10.97	10.60	11.42	11.88
	8H	14.55	15.32	15.01	15.77	16.24	10.30	11.08	10.77	11.52	11.99
	12H	14.70	15.39	15.18	15.87	16.34	10.42	11.11	10.90	11.59	12.06
8H	4H	13.76	14.54	14.23	14.99	15.45	10.01	10.78	10.47	11.23	11.70
	6H	14.40	15.04	14.90	15.54	16.01	10.59	11.24	11.09	11.73	12.20
	8H	14.65	15.23	15.17	15.74	16.23	10.81	11.39	11.33	11.90	12.39
	12H	14.86	15.37	15.37	15.86	16.42	10.99	11.50	11.50	11.99	12.56
12H	4H	13.75	14.44	14.23	14.92	15.39	10.05	10.74	10.53	11.22	11.69
	6H	14.38	14.96	14.90	15.47	15.96	10.66	11.23	11.17	11.74	12.23
	8H	14.67	15.18	15.18	15.67	16.23	10.93	11.44	11.44	11.93	12.50