

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: P929976

Luminaire Tested: DFN2DS-4P4F0-050DS927-RLL

Issue Date: 11/20/2024

**Test Information**

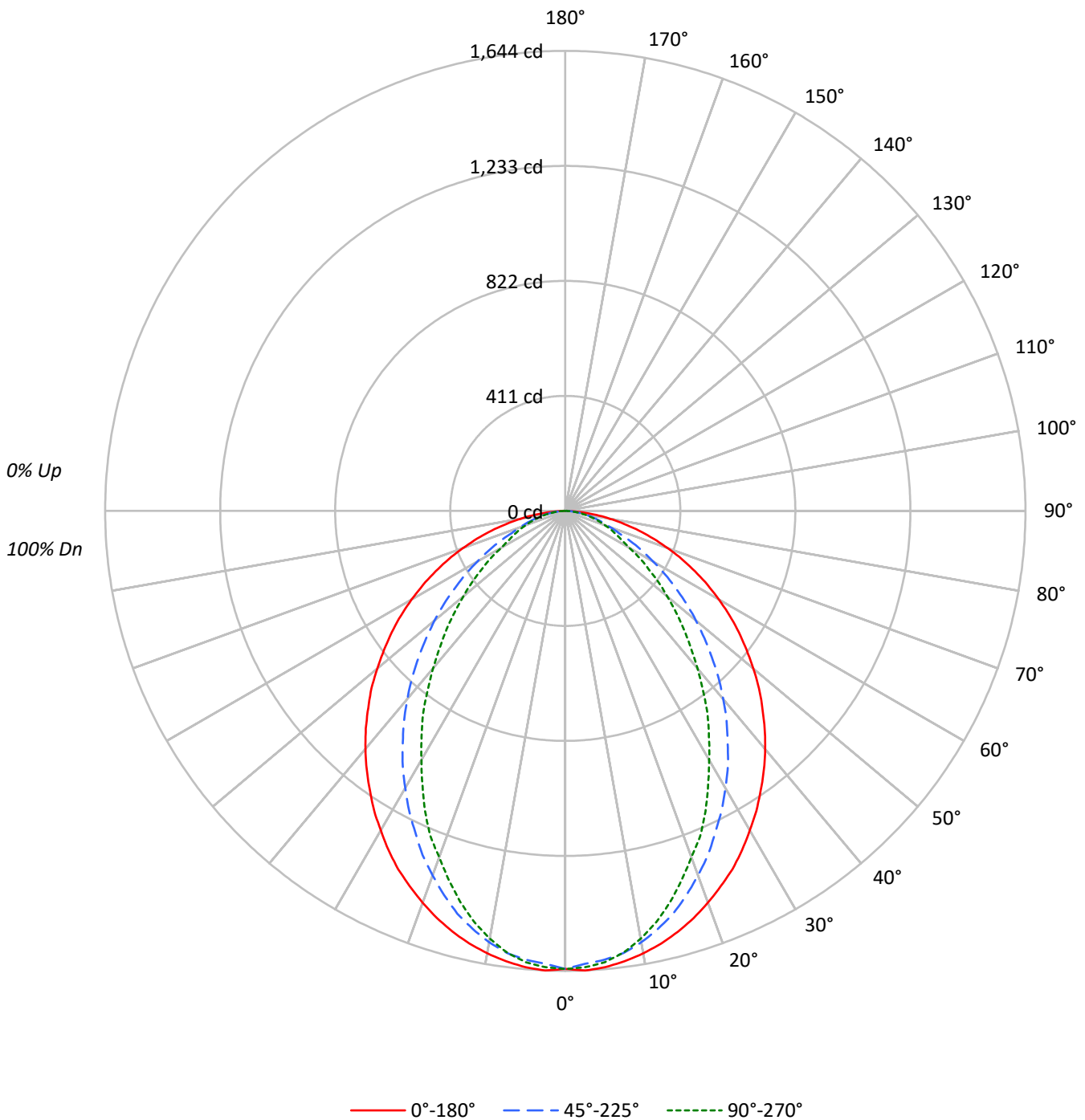
Test Method: LM-79-2019  
Report Number: P929976  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333882)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/20/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DS-4P4F0-050DS927-RLL  
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3366.0 lumens  
Efficiency: N/A  
Efficacy: 66.5 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): 50.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9951  
Total Harmonic Distortion (THDi): 0.07  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P929976  
CATALOG NUMBER: DFN2DS-4P4F0-050DS927-RLL

### Luminous Intensity Polar Plot





TEST NUMBER: P929976

CATALOG NUMBER: DFN2DS-4P4F0-050DS927-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°	1062	1062	1062
5°	1066	1048	1054
10°	1058	1031	1023
15°	1046	1001	972
20°	1029	957	909
25°	1011	907	848
30°	988	857	770
35°	964	801	701
40°	941	744	622
45°	913	679	550
50°	885	614	480
55°	856	544	412
60°	822	471	342
65°	784	396	311
70°	739	326	286
75°	683	297	267
80°	603	265	244
85°	474	209	209

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 913 cd/sqm



TEST NUMBER: P929976  
 CATALOG NUMBER: DFN2DS-4P4F0-050DS927-RLL

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	153.4	4.6
10°-20°	421.1	12.5
20°-30°	591.2	17.6
30°-40°	644.4	19.1
40°-50°	592.3	17.6
50°-60°	465.2	13.8
60°-70°	302.8	9.0
70°-80°	155.9	4.6
80°-90°	39.8	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°	1165.7	34.6
0°-40°	1810.1	53.8
0°-60°	2867.6	85.2
0°-90°	3366.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3366.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1637	1637	1637	1637	1637	
5°	1637	1629	1610	1623	1619	155
15°	1557	1540	1490	1462	1447	439
25°	1413	1366	1268	1207	1185	650
35°	1218	1142	1012	918	886	762
45°	995	896	741	635	600	769
55°	757	641	481	392	364	676
65°	511	391	258	207	203	507
75°	272	169	118	108	107	288
85°	64	33	28	28	28	76
90°	0	0	0	0	0	



TEST NUMBER: P929976

CATALOG NUMBER: DFN2DS-4P4F0-050DS927-RLL

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1636.7	1636.7	1636.7	1636.7	1636.7
2.5°	1644.0	1636.7	1620.4	1635.2	1632.2
5°	1636.7	1629.3	1610.0	1623.3	1618.9
7.5°	1623.3	1614.5	1593.7	1599.6	1592.2
10°	1605.5	1595.2	1565.6	1561.1	1552.2
12.5°	1583.4	1570.1	1530.0	1521.2	1504.8
15°	1556.7	1540.4	1490.1	1462.0	1447.1
17.5°	1525.6	1501.9	1439.6	1407.1	1383.3
20°	1490.1	1460.4	1386.3	1349.4	1316.7
22.5°	1451.6	1417.4	1331.5	1281.2	1259.0
25°	1413.0	1365.6	1267.8	1207.2	1184.8
27.5°	1367.2	1316.7	1208.6	1139.0	1104.9
30°	1318.3	1261.9	1143.4	1067.9	1027.9
32.5°	1270.8	1202.7	1081.3	992.4	955.3
35°	1217.5	1142.0	1011.7	918.3	885.7
37.5°	1165.7	1084.2	946.5	844.2	807.3
40°	1110.9	1022.1	878.2	773.2	734.7
42.5°	1054.6	959.8	810.2	700.5	663.6
45°	995.4	896.1	740.6	635.3	599.8
47.5°	939.1	834.0	674.0	568.7	536.2
50°	876.9	771.7	608.8	506.5	475.5
52.5°	816.1	705.0	546.6	448.8	420.7
55°	756.8	641.3	481.3	392.5	364.4
57.5°	696.2	577.7	423.6	340.7	317.0
60°	633.9	515.4	362.8	287.4	263.7
62.5°	573.2	454.8	311.0	240.0	228.2
65°	511.0	391.0	257.7	207.4	202.9
67.5°	451.8	331.8	207.4	182.2	177.7
70°	389.6	274.0	171.8	157.0	151.0
72.5°	330.3	220.7	143.7	131.9	128.9
75°	272.5	168.8	118.5	108.1	106.7
77.5°	214.8	119.9	93.4	87.4	84.3
80°	161.4	85.9	71.0	65.2	65.2
82.5°	112.5	57.8	48.9	45.9	45.9
85°	63.7	32.6	28.1	28.1	28.1
87.5°	23.8	11.8	11.8	10.4	10.4
90°	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P929976  
 CATALOG NUMBER: DFN2DS-4P4F0-050DS927-RLI

**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	11.44	12.96	11.81	13.28	13.59	7.40	8.93	7.77	9.24	9.55
	3H	13.21	14.57	13.59	14.90	15.26	8.67	10.03	9.05	10.36	10.72
	4H	13.87	15.16	14.27	15.50	15.88	9.17	10.45	9.57	10.80	11.18
	6H	14.36	15.55	14.78	15.91	16.31	9.55	10.73	9.96	11.10	11.49
	8H	14.53	15.66	14.96	16.05	16.45	9.68	10.80	10.10	11.19	11.59
	12H	14.63	15.71	15.06	16.09	16.52	9.76	10.84	10.19	11.22	11.65
4H	2H	11.55	12.83	11.95	13.18	13.55	8.10	9.38	8.50	9.73	10.11
	3H	13.48	14.54	13.89	14.94	15.34	9.54	10.61	9.95	11.01	11.41
	4H	14.23	15.19	14.66	15.60	16.04	10.14	11.10	10.57	11.51	11.95
	6H	14.82	15.65	15.28	16.10	16.56	10.63	11.46	11.09	11.90	12.36
	8H	15.04	15.81	15.50	16.26	16.72	10.79	11.57	11.26	12.01	12.48
	12H	15.19	15.88	15.67	16.36	16.83	10.91	11.60	11.39	12.08	12.55
8H	4H	14.25	15.03	14.72	15.48	15.94	10.50	11.27	10.96	11.72	12.18
	6H	14.89	15.53	15.39	16.03	16.50	11.08	11.72	11.58	12.22	12.69
	8H	15.14	15.72	15.66	16.23	16.72	11.30	11.88	11.82	12.39	12.88
	12H	15.35	15.86	15.86	16.35	16.91	11.48	11.99	11.99	12.48	13.05
12H	4H	14.24	14.93	14.72	15.41	15.88	10.54	11.23	11.02	11.71	12.18
	6H	14.87	15.45	15.39	15.96	16.45	11.15	11.72	11.66	12.23	12.72
	8H	15.16	15.67	15.67	16.16	16.72	11.42	11.93	11.93	12.42	12.99