

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: P929954

Luminaire Tested: DFN2DS-4P4F0-040DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P929954
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-4P4F0-040DS840-RLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

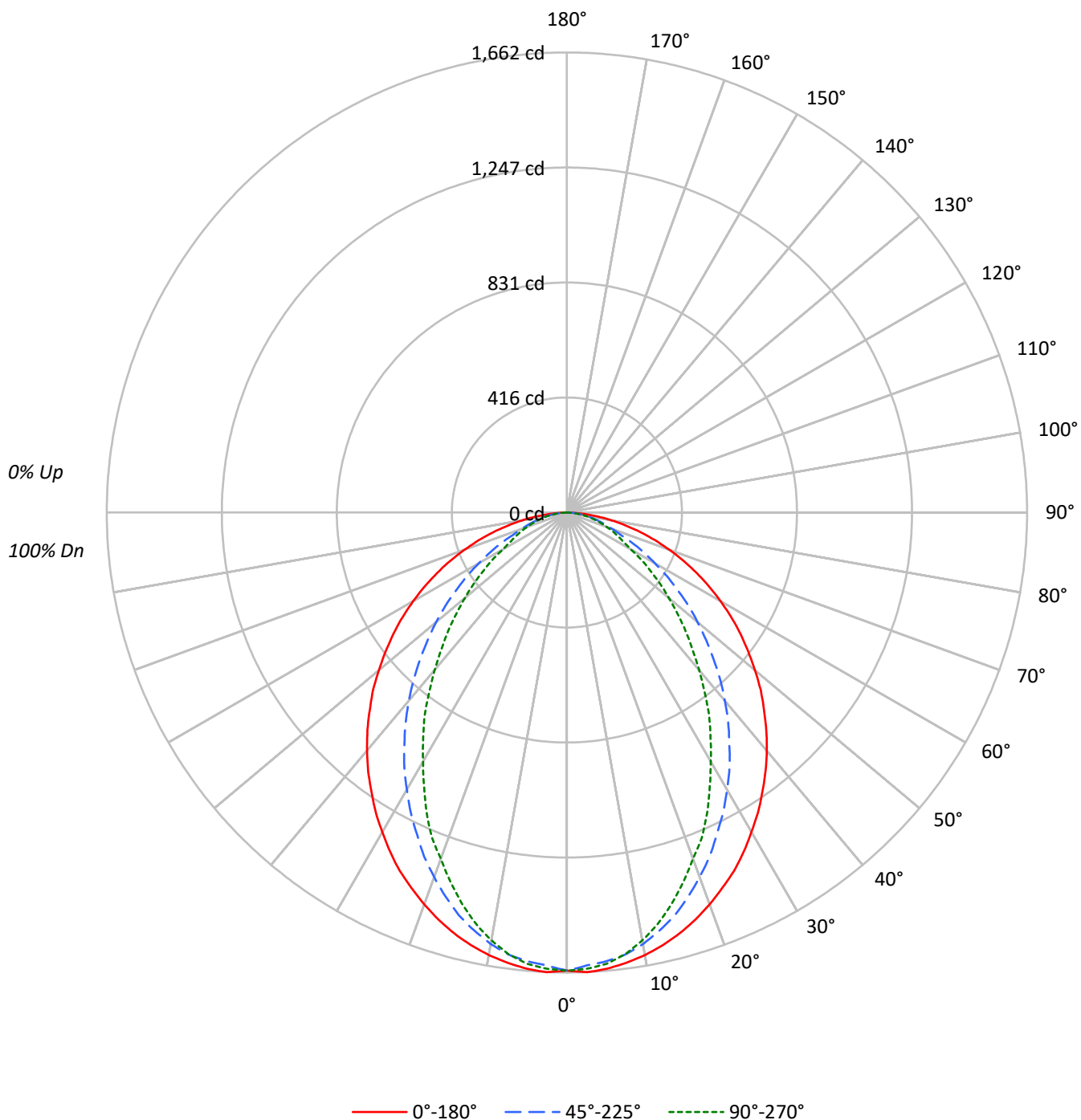
Lumens per Lamp: N/A
Luminaire Lumens: 3403.4 lumens
Efficiency: N/A
Efficacy: 86.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 4.07' x L: 4.07' x H: 0')
CIE Type: Direct

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: P929954

CATALOG NUMBER: DFN2DS-4P4F0-040DS840-RLL

Luminous Intensity Polar Plot



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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
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	110	106	102	98	107	103	100	97	99	96	94		95	93	91		92
2	101	94	87	82	98	92	86	81	88	83	79		85	81	78		82
3	93	83	76	70	90	82	75	69	79	73	68		76	71	67		74
4	86	75	66	60	83	73	66	60	71	64	59		69	63	58		66
5	79	67	59	53	77	66	58	52	64	57	52		62	56	51		60
6	74	61	53	47	72	60	52	46	58	51	46		57	50	46		55
7	68	56	47	42	67	55	47	42	53	46	41		52	46	41		51
8	64	51	43	38	62	51	43	37	49	42	37		48	42	37		47
9	60	47	39	34	59	47	39	34	46	39	34		44	38	34		44
10	56	44	36	31	55	43	36	31	42	36	31		41	35	31		41

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1074	1074	1074
5°	1078	1060	1066
10°	1069	1043	1034
15°	1057	1012	983
20°	1040	968	919
25°	1023	918	858
30°	998	866	779
35°	975	810	709
40°	951	752	629
45°	923	687	556
50°	895	621	485
55°	866	550	417
60°	832	476	346
65°	793	400	315
70°	747	329	290
75°	691	300	270
80°	610	268	247
85°	479	211	211

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 923 cd/sqm

TEST NUMBER: P929954

CATALOG NUMBER: DFN2DS-4P4F0-040DS840-RLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	155.1	4.6
10°-20°	425.8	12.5
20°-30°	597.8	17.6
30°-40°	651.6	19.1
40°-50°	598.9	17.6
50°-60°	470.3	13.8
60°-70°	306.1	9.0
70°-80°	157.6	4.6
80°-90°	40.2	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°	1178.6	34.6
0°-40°	1830.2	53.8
0°-60°	2899.4	85.2
0°-90°	3403.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3403.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1655	1655	1655	1655	1655	
5°	1655	1647	1628	1641	1637	157
15°	1574	1558	1507	1478	1463	444
25°	1429	1381	1282	1221	1198	657
35°	1231	1155	1023	928	896	771
45°	1006	906	749	642	606	777
55°	765	648	487	397	368	684
65°	517	395	261	210	205	512
75°	276	171	120	109	108	291
85°	64	33	28	28	28	77
90°	0	0	0	0	0	

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CATALOG NUMBER: DFN2DS-4P4F0-040DS840-RLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1654.9	1654.9	1654.9	1654.9	1654.9
2.5°	1662.4	1654.9	1638.3	1653.5	1650.3
5°	1654.9	1647.3	1627.8	1641.3	1636.9
7.5°	1641.3	1632.4	1611.5	1617.3	1609.9
10°	1623.4	1612.9	1583.0	1578.4	1569.6
12.5°	1601.0	1587.5	1546.9	1538.0	1521.5
15°	1574.0	1557.5	1506.6	1478.2	1463.3
17.5°	1542.5	1518.5	1455.6	1422.7	1398.7
20°	1506.6	1476.6	1401.7	1364.4	1331.3
22.5°	1467.7	1433.2	1346.2	1295.4	1273.1
25°	1428.7	1380.8	1281.9	1220.6	1198.0
27.5°	1382.4	1331.3	1222.0	1151.7	1117.1
30°	1332.9	1275.9	1156.1	1079.8	1039.3
32.5°	1285.0	1216.0	1093.3	1003.4	965.9
35°	1231.1	1154.7	1022.9	928.5	895.5
37.5°	1178.7	1096.2	957.0	853.6	816.2
40°	1123.2	1033.4	888.1	781.8	742.8
42.5°	1066.3	970.5	819.2	708.3	671.0
45°	1006.4	906.0	748.8	642.4	606.5
47.5°	949.5	843.2	681.5	575.1	542.1
50°	886.6	780.3	615.5	512.1	480.8
52.5°	825.1	712.8	552.7	453.8	425.3
55°	765.3	648.4	486.7	396.9	368.5
57.5°	703.9	584.1	428.3	344.4	320.5
60°	640.9	521.1	366.9	290.6	266.7
62.5°	579.7	459.9	314.4	242.6	230.7
65°	516.7	395.3	260.6	209.7	205.1
67.5°	456.9	335.4	209.7	184.2	179.7
70°	393.9	277.1	173.7	158.8	152.7
72.5°	334.0	223.1	145.2	133.3	130.3
75°	275.5	170.7	119.8	109.3	107.9
77.5°	217.2	121.2	94.4	88.4	85.3
80°	163.2	86.9	71.8	66.0	66.0
82.5°	113.8	58.5	49.4	46.3	46.3
85°	64.4	32.9	28.4	28.4	28.4
87.5°	24.0	11.9	11.9	10.5	10.5
90°	0.0	0.0	0.0	0.0	0.0

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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	11.48	13.00	11.85	13.32	13.63	7.44	8.96	7.81	9.28	9.59
	3H	13.25	14.61	13.62	14.94	15.30	8.71	10.07	9.08	10.40	10.76
	4H	13.91	15.19	14.31	15.54	15.92	9.21	10.49	9.61	10.84	11.22
	6H	14.40	15.59	14.81	15.95	16.34	9.59	10.77	10.00	11.14	11.53
	8H	14.57	15.69	14.99	16.08	16.48	9.71	10.84	10.14	11.23	11.63
	12H	14.67	15.75	15.10	16.13	16.56	9.79	10.87	10.23	11.25	11.68
4H	2H	11.59	12.87	11.99	13.21	13.59	8.14	9.42	8.54	9.77	10.14
	3H	13.52	14.58	13.93	14.98	15.38	9.58	10.64	9.99	11.04	11.44
	4H	14.27	15.22	14.70	15.64	16.08	10.18	11.14	10.61	11.55	11.99
	6H	14.86	15.69	15.32	16.13	16.59	10.67	11.50	11.13	11.94	12.40
	8H	15.07	15.85	15.54	16.30	16.76	10.83	11.61	11.29	12.05	12.52
	12H	15.23	15.92	15.71	16.40	16.87	10.95	11.64	11.43	12.12	12.59
8H	4H	14.29	15.07	14.76	15.51	15.98	10.53	11.31	11.00	11.76	12.22
	6H	14.93	15.57	15.43	16.06	16.54	11.12	11.76	11.62	12.25	12.73
	8H	15.18	15.76	15.69	16.27	16.75	11.34	11.92	11.86	12.43	12.92
	12H	15.38	15.89	15.89	16.39	16.95	11.52	12.03	12.03	12.52	13.09
12H	4H	14.28	14.97	14.76	15.45	15.92	10.58	11.27	11.06	11.75	12.22
	6H	14.91	15.49	15.42	16.00	16.49	11.18	11.76	11.70	12.27	12.76
	8H	15.20	15.71	15.70	16.20	16.76	11.46	11.97	11.97	12.46	13.02