

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: P929801

Luminaire Tested: DFN2DS-4P2F0-020DS940-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P929801
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333812)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-4P2F0-020DS940-FLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

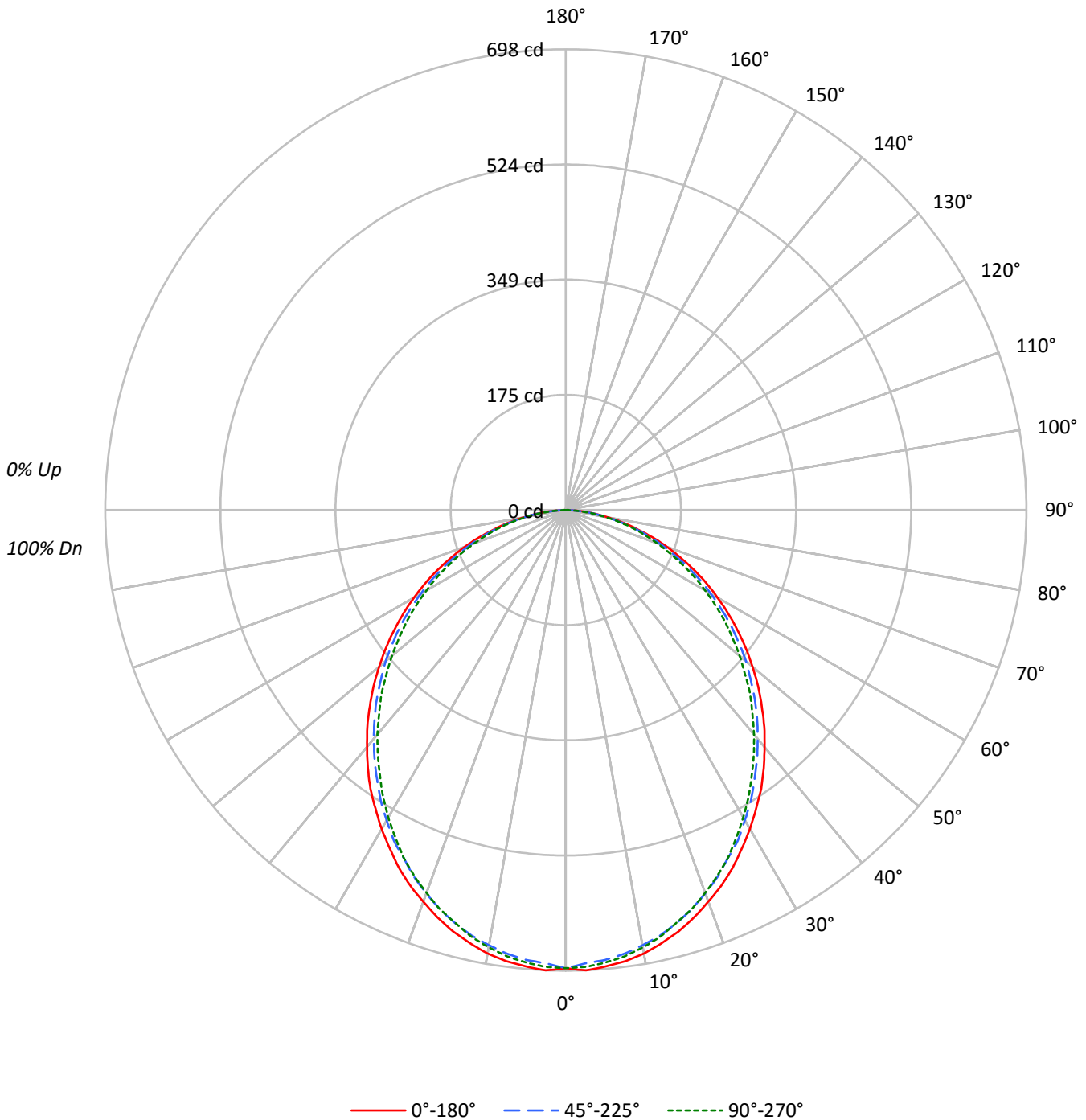
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1766.2 lumens
Efficiency: N/A
Efficacy: 91.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 2.07' x L: 2.07' x H: 0')
CIE Type: Direct

Input Watts (W): 19.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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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			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	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	86	86	86	84
2	99	91	85	79	97	89	83	78	86	81	76	83	78	74	80	76	73	73	73	73	71
3	91	80	72	66	88	79	71	65	76	69	64	73	68	63	71	66	62	62	62	62	60
4	83	71	63	56	81	70	62	56	68	61	55	65	59	54	63	58	54	54	54	54	51
5	77	64	55	49	75	63	55	48	61	53	48	59	52	47	57	51	47	47	47	47	45
6	71	58	49	43	69	57	48	42	55	48	42	53	47	42	52	46	41	41	41	41	39
7	66	52	44	38	64	52	43	38	50	43	37	49	42	37	47	41	37	37	37	37	35
8	61	48	40	34	60	47	39	34	46	39	33	45	38	33	44	38	33	33	33	33	31
9	57	44	36	30	56	43	36	30	42	35	30	41	35	30	40	34	30	30	30	30	28
10	54	41	33	28	53	40	33	28	39	32	27	38	32	27	37	32	27	27	27	27	26

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1738	1738	1738
5°	1745	1720	1730
10°	1735	1702	1711
15°	1713	1680	1679
20°	1682	1647	1645
25°	1652	1606	1606
30°	1613	1569	1556
35°	1577	1524	1502
40°	1532	1479	1451
45°	1487	1435	1399
50°	1438	1388	1339
55°	1387	1335	1285
60°	1330	1271	1223
65°	1270	1206	1151
70°	1193	1128	1075
75°	1085	1039	1014
80°	963	934	885
85°	784	747	672

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1487 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	65.3	3.7
10°-20°	183.8	10.4
20°-30°	270.2	15.3
30°-40°	313.8	17.8
40°-50°	313.4	17.7
50°-60°	273.2	15.5
60°-70°	202.0	11.4
70°-80°	114.3	6.5
80°-90°	30.2	1.7
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°	519.3	29.4
0°-40°	833.1	47.2
0°-60°	1419.7	80.4
0°-90°	1766.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1766.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	694	694	694	694	694	
5°	694	692	684	690	688	66
15°	661	657	648	651	648	186
25°	598	593	581	583	581	275
35°	516	509	499	495	491	322
45°	420	415	405	398	395	324
55°	318	314	306	298	294	284
65°	214	210	204	198	194	212
75°	112	111	107	104	105	120
85°	27	27	26	24	23	32
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	694.2	694.2	694.2	694.2	694.2
2.5°	698.2	694.9	687.5	694.2	692.9
5°	694.2	691.6	684.2	689.5	688.2
7.5°	689.5	685.5	678.2	683.5	682.2
10°	682.2	677.6	669.5	674.8	672.8
12.5°	672.1	668.2	660.2	663.5	662.1
15°	660.8	656.9	648.1	650.8	647.5
17.5°	646.8	642.9	634.1	637.4	634.1
20°	631.4	627.4	618.1	620.1	617.4
22.5°	616.1	610.1	601.4	601.4	600.0
25°	598.1	592.7	581.4	582.7	581.4
27.5°	578.0	573.4	564.7	562.8	559.4
30°	558.0	552.7	542.7	540.7	538.0
32.5°	536.6	532.7	522.0	518.0	515.3
35°	516.0	509.3	498.6	494.6	491.2
37.5°	492.7	486.6	475.9	471.2	467.9
40°	468.6	463.2	452.5	446.6	443.9
42.5°	445.2	439.8	429.2	422.5	418.5
45°	419.9	415.2	405.1	397.8	395.2
47.5°	395.2	390.5	379.8	372.4	368.5
50°	369.1	365.8	356.4	347.1	343.8
52.5°	343.8	339.0	330.4	323.1	318.4
55°	317.7	313.7	305.7	297.7	294.4
57.5°	291.7	288.4	279.6	271.7	268.9
60°	265.6	263.1	253.7	246.3	244.3
62.5°	240.3	235.6	229.0	222.3	219.6
65°	214.3	210.2	203.6	197.6	194.3
67.5°	187.6	184.2	178.2	173.6	170.9
70°	162.9	160.2	154.1	149.5	146.9
72.5°	137.5	134.9	131.5	126.8	124.9
75°	112.1	110.9	107.4	103.5	104.8
77.5°	89.5	86.8	85.4	83.4	81.4
80°	66.8	66.1	64.8	62.7	61.4
82.5°	45.4	45.4	44.8	42.1	42.1
85°	27.3	26.7	26.0	24.0	23.4
87.5°	12.0	10.7	9.4	7.4	6.7
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	13.20	14.81	13.57	15.13	15.44	12.76	14.37	13.12	14.68	15.00
	3H	14.95	16.41	15.33	16.73	17.10	14.46	15.92	14.84	16.24	16.60
	4H	15.60	16.97	16.00	17.32	17.69	15.11	16.47	15.50	16.82	17.20
	6H	16.07	17.34	16.48	17.70	18.09	15.57	16.84	15.98	17.20	17.59
	8H	16.21	17.42	16.64	17.81	18.21	15.71	16.92	16.13	17.31	17.71
	12H	16.30	17.46	16.73	17.84	18.27	15.79	16.95	16.22	17.33	17.76
4H	2H	13.76	15.13	14.16	15.48	15.86	13.41	14.78	13.81	15.13	15.50
	3H	15.74	16.89	16.15	17.28	17.68	15.33	16.48	15.74	16.88	17.28
	4H	16.52	17.55	16.95	17.97	18.40	16.09	17.13	16.52	17.54	17.98
	6H	17.11	18.02	17.57	18.46	18.91	16.68	17.58	17.13	18.02	18.48
	8H	17.30	18.15	17.76	18.59	19.06	16.86	17.71	17.32	18.15	18.62
	12H	17.43	18.19	17.91	18.67	19.14	16.98	17.74	17.46	18.22	18.69
8H	4H	16.79	17.64	17.25	18.08	18.54	16.41	17.26	16.88	17.70	18.17
	6H	17.50	18.21	18.00	18.70	19.17	17.12	17.82	17.62	18.31	18.79
	8H	17.76	18.39	18.27	18.90	19.39	17.37	18.00	17.88	18.51	18.99
	12H	17.96	18.52	18.47	19.01	19.57	17.55	18.11	18.06	18.60	19.16
12H	4H	16.82	17.58	17.30	18.05	18.52	16.45	17.21	16.93	17.69	18.16
	6H	17.55	18.18	18.06	18.69	19.17	17.18	17.81	17.69	18.32	18.80
	8H	17.86	18.42	18.37	18.91	19.47	17.48	18.04	17.99	18.53	19.09