

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: P929855

Luminaire Tested: DFN2DS-4P3F0-020DS940-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P929855
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-4P3F0-020DS940-FLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

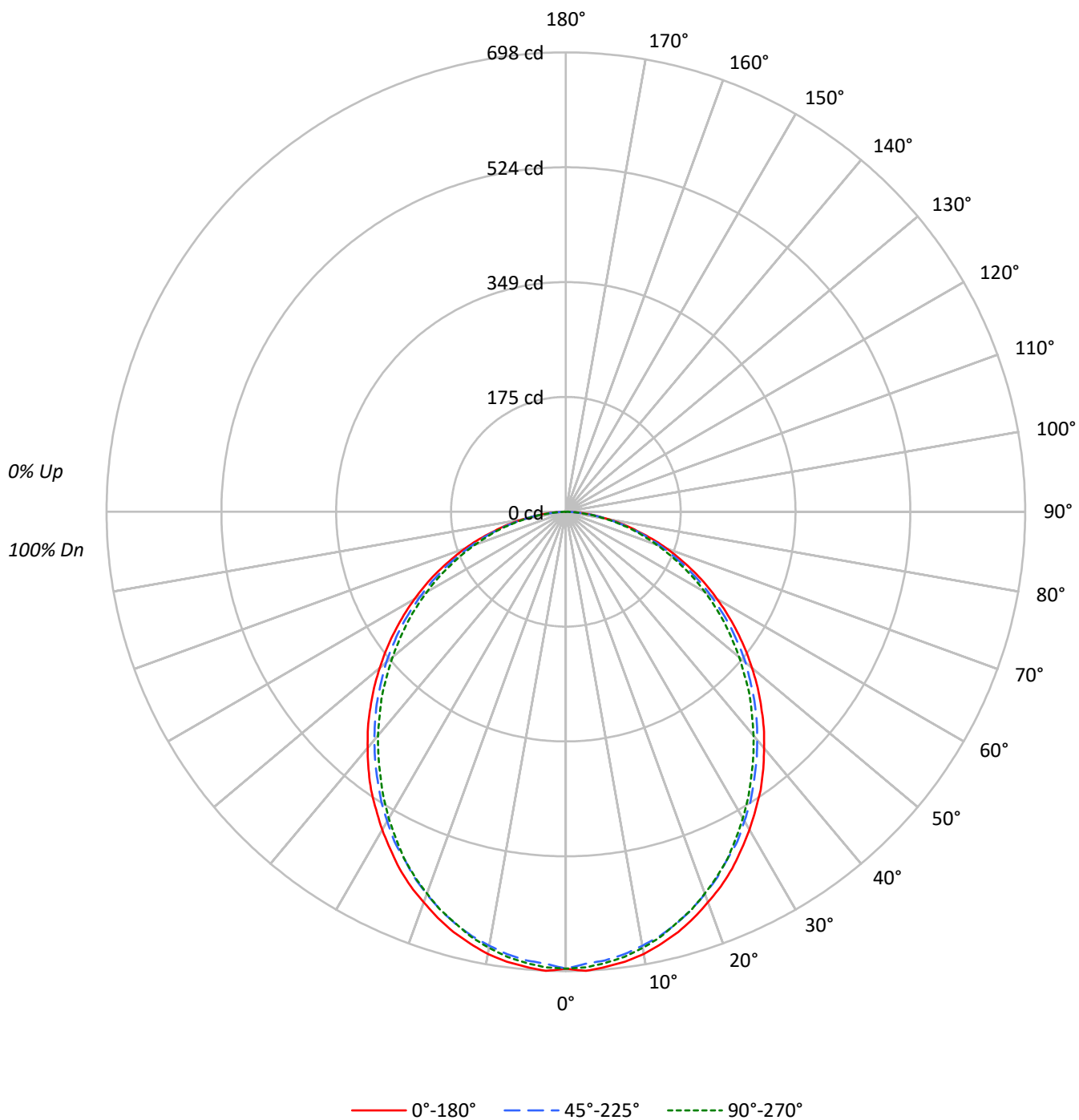
Lumens per Lamp: N/A
Luminaire Lumens: 1766.2 lumens
Efficiency: N/A
Efficacy: 95.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.07' x L: 3.07' x H: 0')
CIE Type: Direct

Input Watts (W): 18.6
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

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	791	791	791
5°	794	783	787
10°	789	775	779
15°	780	765	764
20°	766	750	749
25°	752	731	731
30°	734	714	708
35°	718	694	683
40°	697	673	660
45°	677	653	637
50°	654	632	610
55°	631	607	585
60°	605	578	557
65°	578	549	524
70°	543	513	489
75°	494	473	461
80°	438	425	403
85°	357	340	306

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 677 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	10.47	12.08	10.83	12.39	12.71	10.02	11.64	10.39	11.95	12.26
	3H	12.22	13.67	12.60	14.00	14.36	11.73	13.18	12.10	13.51	13.87
	4H	12.87	14.23	13.26	14.58	14.96	12.37	13.74	12.77	14.09	14.46
	6H	13.33	14.60	13.75	14.97	15.36	12.83	14.10	13.24	14.47	14.86
	8H	13.48	14.69	13.90	15.08	15.48	12.97	14.19	13.40	14.57	14.97
	12H	13.57	14.73	14.00	15.11	15.54	13.06	14.22	13.48	14.60	15.03
4H	2H	11.03	12.40	11.43	12.75	13.12	10.68	12.05	11.07	12.39	12.77
	3H	13.00	14.15	13.41	14.55	14.95	12.60	13.74	13.01	14.14	14.54
	4H	13.78	14.82	14.21	15.23	15.67	13.36	14.39	13.79	14.81	15.24
	6H	14.38	15.28	14.83	15.72	16.18	13.94	14.85	14.40	15.29	15.75
	8H	14.57	15.41	15.03	15.86	16.32	14.13	14.97	14.59	15.42	15.88
	12H	14.70	15.46	15.18	15.93	16.40	14.25	15.01	14.73	15.48	15.95
8H	4H	14.05	14.90	14.51	15.34	15.81	13.68	14.53	14.14	14.97	15.43
	6H	14.77	15.47	15.26	15.96	16.44	14.39	15.09	14.88	15.58	16.05
	8H	15.03	15.66	15.54	16.17	16.65	14.64	15.27	15.15	15.77	16.26
	12H	15.23	15.79	15.74	16.28	16.84	14.81	15.37	15.32	15.86	16.42
12H	4H	14.08	14.84	14.56	15.32	15.79	13.72	14.48	14.20	14.95	15.42
	6H	14.81	15.45	15.32	15.95	16.44	14.44	15.08	14.95	15.58	16.07
	8H	15.13	15.69	15.64	16.18	16.74	14.75	15.31	15.26	15.80	16.36