

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: P929845

Luminaire Tested: DFN2DS-4P3F0-020DS840-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P929845
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-4P3F0-020DS840-FLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

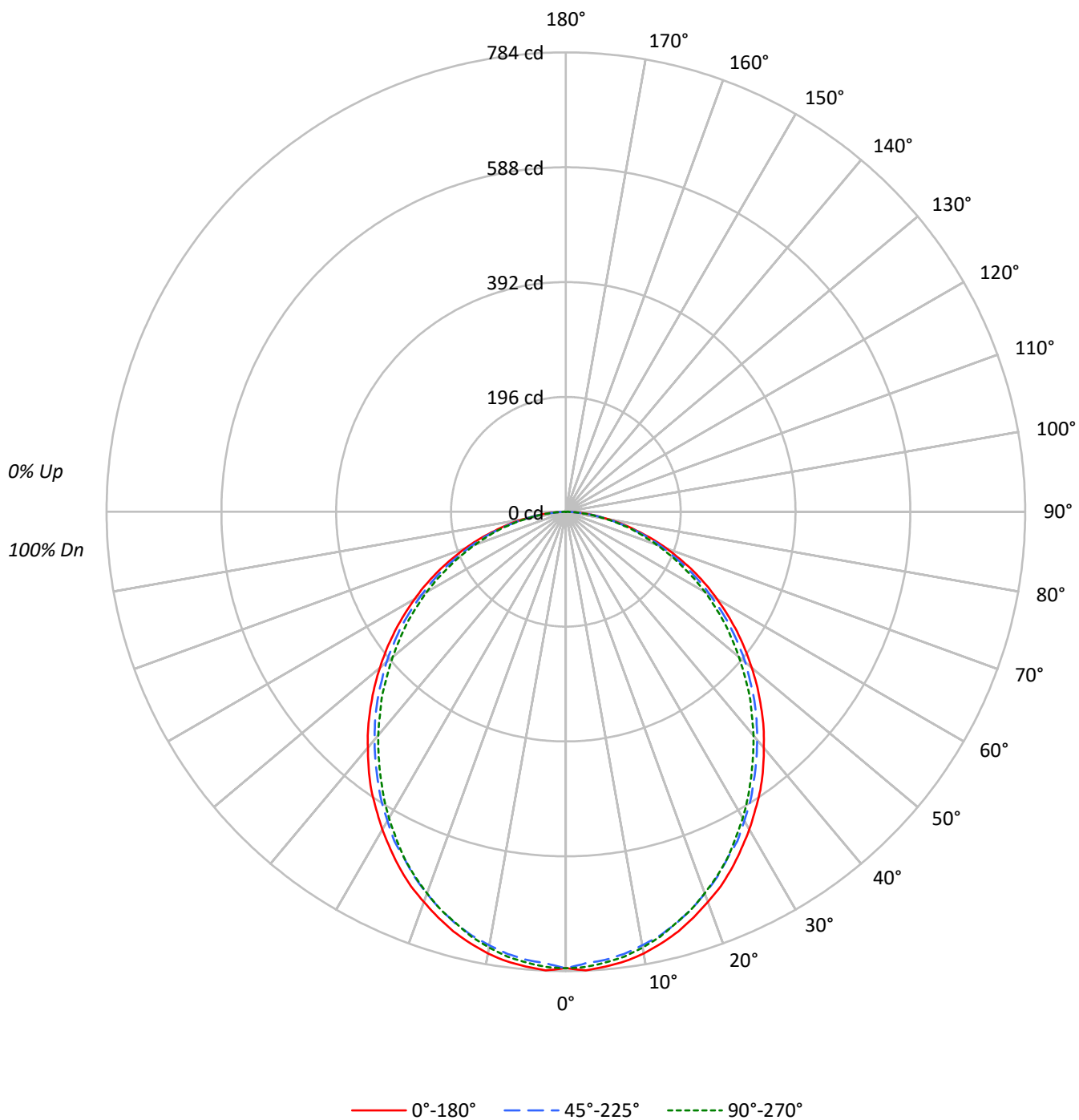
Lumens per Lamp: N/A
Luminaire Lumens: 1982.0 lumens
Efficiency: N/A
Efficacy: 106.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.07' x L: 3.07' x H: 0')
CIE Type: Direct

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°	888	888	888
5°	891	878	883
10°	886	870	874
15°	875	858	857
20°	859	841	840
25°	844	820	820
30°	824	801	794
35°	806	779	767
40°	782	755	741
45°	759	733	715
50°	734	709	684
55°	709	681	656
60°	679	649	625
65°	648	616	588
70°	609	576	549
75°	554	531	518
80°	492	477	452
85°	400	382	343

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 759 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.3	3.7
10°-20°	206.3	10.4
20°-30°	303.2	15.3
30°-40°	352.1	17.8
40°-50°	351.7	17.7
50°-60°	306.6	15.5
60°-70°	226.7	11.4
70°-80°	128.3	6.5
80°-90°	33.9	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°	582.8	29.4
0°-40°	934.9	47.2
0°-60°	1593.2	80.4
0°-90°	1982.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1982.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	779	779	779	779	779	
5°	779	776	768	774	772	74
15°	742	737	727	730	727	209
25°	671	665	652	654	652	309
35°	579	572	560	555	551	362
45°	471	466	455	446	443	364
55°	357	352	343	334	330	319
65°	240	236	228	222	218	238
75°	126	124	120	116	118	134
85°	31	30	29	27	26	36
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	779.0	779.0	779.0	779.0	779.0
2.5°	783.5	779.8	771.5	779.0	777.6
5°	779.0	776.1	767.8	773.8	772.3
7.5°	773.8	769.3	761.1	767.1	765.6
10°	765.6	760.4	751.4	757.3	755.1
12.5°	754.3	749.8	740.8	744.5	743.0
15°	741.5	737.1	727.3	730.3	726.6
17.5°	725.8	721.4	711.6	715.3	711.6
20°	708.6	704.1	693.6	695.9	692.9
22.5°	691.4	684.7	674.9	674.9	673.4
25°	671.2	665.2	652.5	653.9	652.5
27.5°	648.6	643.4	633.7	631.5	627.7
30°	626.2	620.2	609.0	606.8	603.7
32.5°	602.2	597.8	585.8	581.3	578.3
35°	579.1	571.6	559.6	555.1	551.3
37.5°	552.9	546.0	534.0	528.8	525.0
40°	525.8	519.8	507.8	501.2	498.1
42.5°	499.6	493.6	481.7	474.2	469.7
45°	471.2	466.0	454.7	446.4	443.4
47.5°	443.4	438.2	426.2	417.9	413.5
50°	414.2	410.5	400.0	389.5	385.8
52.5°	385.8	380.5	370.8	362.6	357.4
55°	356.6	352.1	343.0	334.1	330.3
57.5°	327.3	323.6	313.8	304.9	301.8
60°	298.1	295.2	284.7	276.4	274.2
62.5°	269.7	264.4	257.0	249.4	246.4
65°	240.4	235.9	228.5	221.7	218.0
67.5°	210.5	206.7	200.0	194.8	191.8
70°	182.8	179.8	173.0	167.8	164.9
72.5°	154.4	151.4	147.5	142.3	140.1
75°	125.8	124.4	120.5	116.1	117.6
77.5°	100.4	97.4	95.8	93.6	91.4
80°	75.0	74.2	72.7	70.4	68.9
82.5°	51.0	51.0	50.3	47.2	47.2
85°	30.6	29.9	29.2	26.9	26.2
87.5°	13.5	12.0	10.5	8.3	7.5
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	10.87	12.48	11.23	12.79	13.11	10.43	12.04	10.79	12.35	12.66
	3H	12.62	14.07	13.00	14.40	14.76	12.13	13.58	12.51	13.91	14.27
	4H	13.27	14.63	13.66	14.98	15.36	12.77	14.14	13.17	14.49	14.86
	6H	13.73	15.00	14.15	15.37	15.76	13.23	14.50	13.64	14.87	15.26
	8H	13.88	15.09	14.30	15.48	15.88	13.37	14.59	13.80	14.97	15.37
	12H	13.97	15.13	14.40	15.51	15.94	13.46	14.62	13.89	15.00	15.43
4H	2H	11.43	12.80	11.83	13.15	13.52	11.08	12.45	11.48	12.79	13.17
	3H	13.40	14.55	13.81	14.95	15.35	13.00	14.14	13.41	14.54	14.94
	4H	14.18	15.22	14.61	15.63	16.07	13.76	14.79	14.19	15.21	15.64
	6H	14.78	15.68	15.23	16.12	16.58	14.35	15.25	14.80	15.69	16.15
	8H	14.97	15.81	15.43	16.26	16.72	14.53	15.38	14.99	15.82	16.28
	12H	15.10	15.86	15.58	16.34	16.80	14.65	15.41	15.13	15.88	16.35
8H	4H	14.45	15.30	14.92	15.74	16.21	14.08	14.93	14.54	15.37	15.83
	6H	15.17	15.87	15.66	16.36	16.84	14.79	15.49	15.28	15.98	16.45
	8H	15.43	16.06	15.94	16.57	17.05	15.04	15.67	15.55	16.17	16.66
	12H	15.63	16.19	16.14	16.68	17.24	15.21	15.77	15.72	16.26	16.82
12H	4H	14.48	15.24	14.96	15.72	16.19	14.12	14.88	14.60	15.35	15.82
	6H	15.21	15.85	15.72	16.35	16.84	14.85	15.48	15.36	15.98	16.47
	8H	15.53	16.09	16.04	16.58	17.14	15.15	15.71	15.66	16.20	16.76