

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: P929787

Luminaire Tested: DFN2DS-4P2F0-020DS830-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P929787
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-4P2F0-020DS830-FLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

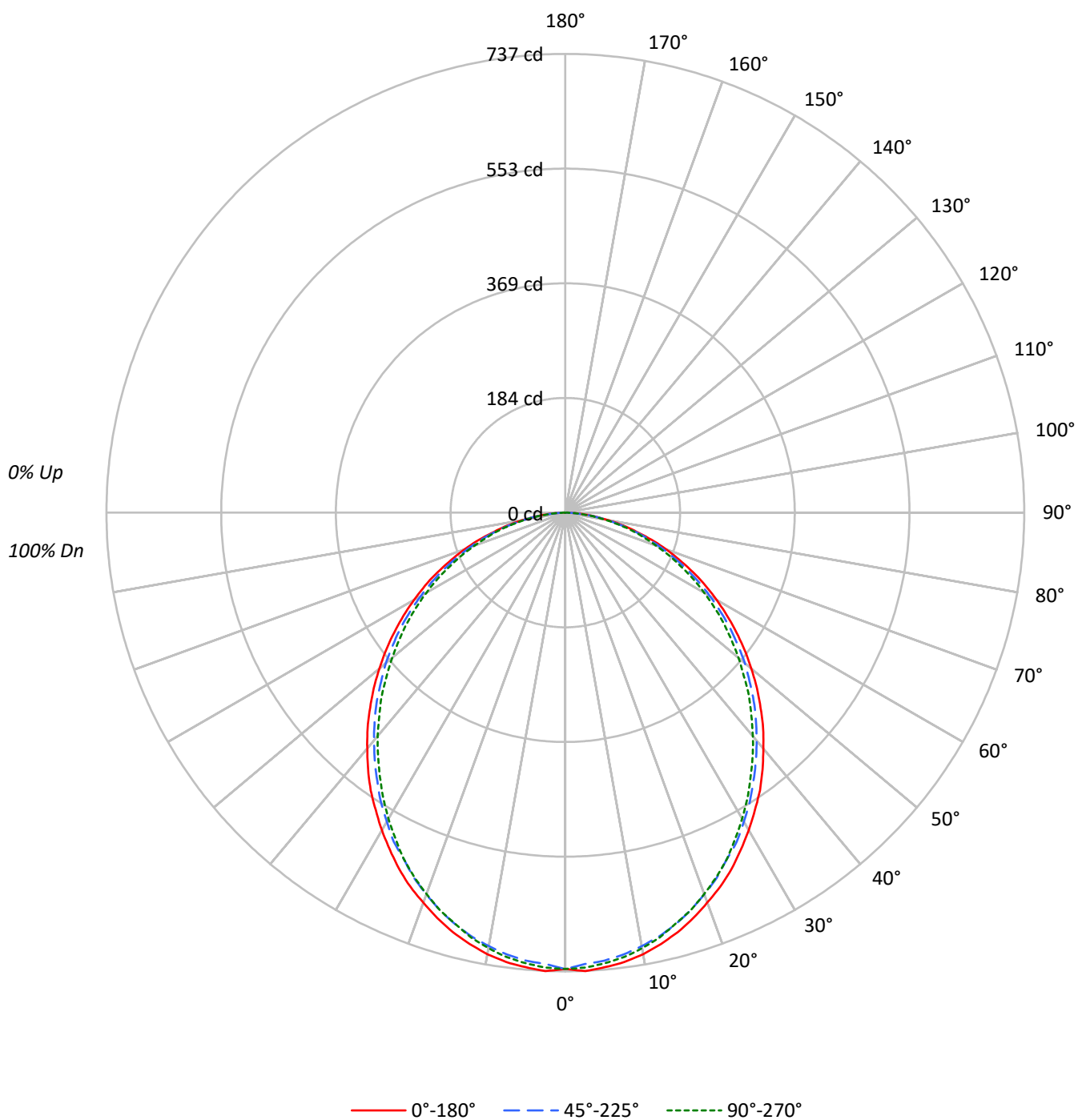
Lumens per Lamp: N/A
Luminaire Lumens: 1865.2 lumens
Efficiency: N/A
Efficacy: 96.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 2.07' x L: 2.07' x H: 0')
CIE Type: Direct

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
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°	1836	1836	1836
5°	1843	1816	1827
10°	1832	1798	1807
15°	1809	1774	1773
20°	1777	1739	1738
25°	1745	1696	1696
30°	1704	1657	1643
35°	1666	1610	1586
40°	1617	1562	1532
45°	1570	1515	1478
50°	1518	1466	1414
55°	1465	1409	1357
60°	1405	1342	1292
65°	1341	1274	1216
70°	1259	1192	1136
75°	1145	1097	1071
80°	1018	986	934
85°	827	790	710

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1570 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.0	3.7
10°-20°	194.1	10.4
20°-30°	285.3	15.3
30°-40°	331.4	17.8
40°-50°	330.9	17.7
50°-60°	288.6	15.5
60°-70°	213.3	11.4
70°-80°	120.7	6.5
80°-90°	31.9	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°	548.4	29.4
0°-40°	879.8	47.2
0°-60°	1499.3	80.4
0°-90°	1865.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1865.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	733	733	733	733	733	
5°	733	730	722	728	727	70
15°	698	694	684	687	684	197
25°	632	626	614	615	614	291
35°	545	538	527	522	519	340
45°	443	438	428	420	417	342
55°	336	331	323	314	311	300
65°	226	222	215	209	205	224
75°	118	117	113	109	111	126
85°	29	28	28	25	25	34
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	733.1	733.1	733.1	733.1	733.1
2.5°	737.3	733.8	726.0	733.1	731.7
5°	733.1	730.3	722.5	728.2	726.8
7.5°	728.2	723.9	716.2	721.9	720.4
10°	720.4	715.5	707.1	712.6	710.6
12.5°	709.8	705.7	697.2	700.7	699.2
15°	697.8	693.7	684.5	687.3	683.8
17.5°	683.0	678.9	669.7	673.2	669.7
20°	666.8	662.6	652.7	654.9	652.1
22.5°	650.6	644.3	635.1	635.1	633.7
25°	631.6	626.0	614.0	615.3	614.0
27.5°	610.4	605.5	596.4	594.3	590.7
30°	589.3	583.7	573.1	571.0	568.1
32.5°	566.7	562.6	551.3	547.0	544.2
35°	544.9	537.9	526.6	522.3	518.8
37.5°	520.3	513.9	502.6	497.7	494.1
40°	494.8	489.2	477.9	471.7	468.7
42.5°	470.2	464.5	453.3	446.2	442.0
45°	443.4	438.5	427.9	420.1	417.3
47.5°	417.3	412.4	401.1	393.3	389.1
50°	389.8	386.3	376.4	366.5	363.0
52.5°	363.0	358.1	348.9	341.2	336.3
55°	335.5	331.3	322.8	314.4	310.9
57.5°	308.0	304.5	295.3	286.9	284.0
60°	280.5	277.8	267.9	260.1	258.0
62.5°	253.8	248.8	241.8	234.7	231.9
65°	226.3	222.0	215.1	208.7	205.2
67.5°	198.1	194.5	188.2	183.3	180.5
70°	172.0	169.2	162.8	157.9	155.1
72.5°	145.3	142.4	138.9	134.0	131.9
75°	118.4	117.1	113.4	109.3	110.7
77.5°	94.5	91.7	90.1	88.1	86.0
80°	70.6	69.8	68.4	66.2	64.8
82.5°	47.9	47.9	47.3	44.5	44.5
85°	28.8	28.2	27.5	25.3	24.7
87.5°	12.7	11.3	9.9	7.8	7.1
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	13.39	15.00	13.76	15.32	15.63	12.95	14.56	13.31	14.87	15.19
	3H	15.14	16.60	15.52	16.92	17.28	14.65	16.11	15.03	16.43	16.79
	4H	15.79	17.16	16.19	17.51	17.88	15.29	16.66	15.69	17.01	17.39
	6H	16.26	17.53	16.67	17.89	18.28	15.76	17.03	16.17	17.39	17.78
	8H	16.40	17.61	16.83	18.00	18.40	15.90	17.11	16.32	17.50	17.90
	12H	16.49	17.65	16.92	18.03	18.46	15.98	17.14	16.41	17.52	17.95
4H	2H	13.95	15.32	14.35	15.67	16.05	13.60	14.97	14.00	15.32	15.69
	3H	15.93	17.07	16.34	17.47	17.87	15.52	16.67	15.93	17.07	17.47
	4H	16.71	17.74	17.14	18.15	18.59	16.28	17.32	16.71	17.73	18.17
	6H	17.30	18.21	17.76	18.65	19.10	16.87	17.77	17.32	18.21	18.67
	8H	17.49	18.34	17.95	18.78	19.25	17.05	17.90	17.51	18.34	18.81
	12H	17.62	18.38	18.10	18.86	19.33	17.17	17.93	17.65	18.41	18.88
8H	4H	16.98	17.82	17.44	18.27	18.73	16.60	17.45	17.07	17.89	18.36
	6H	17.69	18.40	18.19	18.88	19.36	17.31	18.01	17.80	18.50	18.98
	8H	17.95	18.58	18.46	19.09	19.58	17.56	18.19	18.07	18.70	19.18
	12H	18.15	18.71	18.66	19.20	19.76	17.74	18.30	18.25	18.79	19.35
12H	4H	17.00	17.76	17.48	18.24	18.71	16.64	17.40	17.12	17.88	18.35
	6H	17.74	18.37	18.25	18.88	19.36	17.37	18.00	17.88	18.51	18.99
	8H	18.05	18.61	18.56	19.10	19.66	17.67	18.23	18.18	18.72	19.28