

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: P929793

Luminaire Tested: DFN2DS-4P2F0-020DS850-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P929793
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-4P2F0-020DS850-FLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

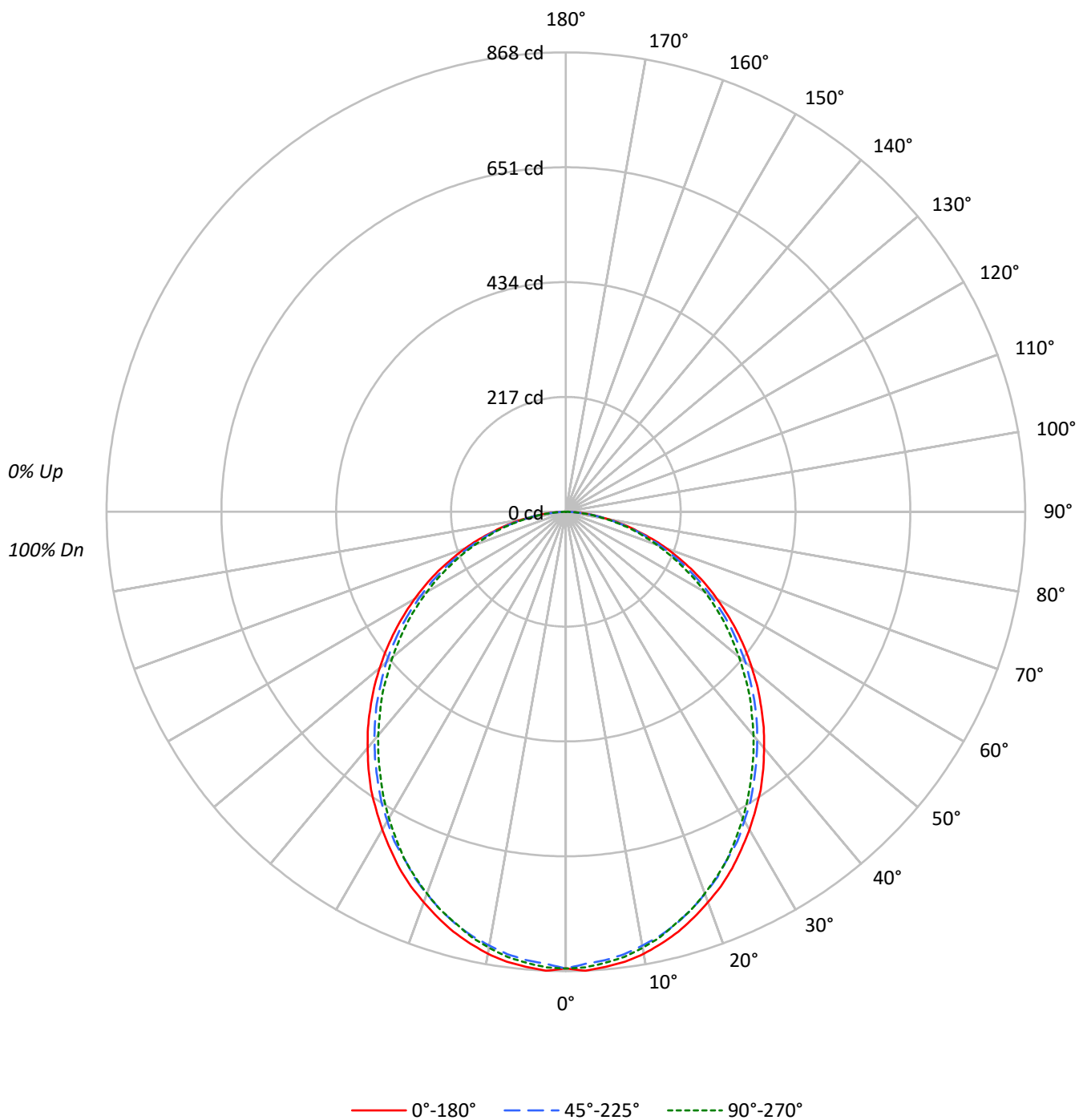
Lumens per Lamp: N/A
Luminaire Lumens: 2195.8 lumens
Efficiency: N/A
Efficacy: 113.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 2.07' x L: 2.07' x H: 0')
CIE Type: Direct

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°	2161	2161	2161
5°	2169	2138	2151
10°	2157	2116	2127
15°	2130	2089	2087
20°	2092	2048	2045
25°	2054	1997	1997
30°	2006	1951	1934
35°	1961	1895	1867
40°	1904	1839	1804
45°	1848	1784	1740
50°	1788	1726	1665
55°	1724	1659	1598
60°	1654	1580	1521
65°	1578	1500	1431
70°	1483	1403	1338
75°	1349	1292	1261
80°	1198	1161	1100
85°	974	931	836

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1848 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.2	3.7
10°-20°	228.6	10.4
20°-30°	335.9	15.3
30°-40°	390.1	17.8
40°-50°	389.6	17.7
50°-60°	339.7	15.5
60°-70°	251.1	11.4
70°-80°	142.1	6.5
80°-90°	37.5	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°	645.7	29.4
0°-40°	1035.8	47.2
0°-60°	1765.1	80.4
0°-90°	2195.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2195.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	863	863	863	863	863	
5°	863	860	851	857	856	82
15°	822	817	806	809	805	231
25°	744	737	723	724	723	342
35°	642	633	620	615	611	401
45°	522	516	504	495	491	403
55°	395	390	380	370	366	353
65°	266	261	253	246	242	263
75°	139	138	134	129	130	149
85°	34	33	32	30	29	40
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	863.0	863.0	863.0	863.0	863.0
2.5°	868.0	863.9	854.7	863.0	861.5
5°	863.0	859.8	850.6	857.3	855.6
7.5°	857.3	852.3	843.2	849.8	848.2
10°	848.2	842.4	832.4	839.0	836.5
12.5°	835.6	830.8	820.8	824.9	823.2
15°	821.5	816.7	805.8	809.1	805.0
17.5°	804.1	799.3	788.4	792.5	788.4
20°	785.1	780.1	768.4	771.0	767.6
22.5°	766.0	758.6	747.7	747.7	746.0
25°	743.6	736.9	722.8	724.4	722.8
27.5°	718.6	712.9	702.1	699.7	695.5
30°	693.8	687.1	674.7	672.3	668.8
32.5°	667.2	662.3	649.0	644.0	640.7
35°	641.6	633.2	619.9	614.9	610.7
37.5°	612.5	605.0	591.7	585.9	581.7
40°	582.6	575.9	562.6	555.3	551.8
42.5°	553.5	546.8	533.7	525.3	520.3
45°	522.0	516.2	503.7	494.6	491.3
47.5°	491.3	485.5	472.2	463.0	458.1
50°	458.9	454.8	443.2	431.5	427.4
52.5°	427.4	421.5	410.8	401.7	395.9
55°	395.0	390.0	380.1	370.2	366.0
57.5°	362.6	358.5	347.7	337.8	334.4
60°	330.3	327.0	315.4	306.2	303.8
62.5°	298.8	292.9	284.7	276.4	273.0
65°	266.4	261.4	253.2	245.6	241.5
67.5°	233.2	229.0	221.6	215.8	212.5
70°	202.5	199.2	191.6	185.9	182.7
72.5°	171.0	167.7	163.5	157.7	155.3
75°	139.4	137.8	133.5	128.6	130.3
77.5°	111.2	107.9	106.1	103.7	101.3
80°	83.1	82.2	80.5	78.0	76.3
82.5°	56.4	56.4	55.7	52.3	52.3
85°	33.9	33.2	32.4	29.8	29.1
87.5°	15.0	13.3	11.6	9.2	8.3
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	13.96	15.57	14.32	15.88	16.20	13.52	15.13	13.88	15.44	15.76
	3H	15.71	17.16	16.09	17.49	17.85	15.22	16.67	15.60	17.00	17.36
	4H	16.36	17.73	16.75	18.07	18.45	15.86	17.23	16.26	17.58	17.96
	6H	16.83	18.09	17.24	18.46	18.85	16.32	17.59	16.74	17.96	18.35
	8H	16.97	18.18	17.39	18.57	18.97	16.47	17.68	16.89	18.07	18.47
	12H	17.06	18.22	17.49	18.60	19.03	16.55	17.71	16.98	18.09	18.52
4H	2H	14.52	15.89	14.92	16.24	16.61	14.17	15.54	14.57	15.89	16.26
	3H	16.50	17.64	16.90	18.04	18.44	16.09	17.24	16.50	17.63	18.03
	4H	17.27	18.31	17.70	18.72	19.16	16.85	17.88	17.28	18.30	18.73
	6H	17.87	18.77	18.32	19.21	19.67	17.44	18.34	17.89	18.78	19.24
	8H	18.06	18.90	18.52	19.35	19.81	17.62	18.47	18.08	18.91	19.37
	12H	18.19	18.95	18.67	19.43	19.90	17.74	18.50	18.22	18.97	19.44
8H	4H	17.55	18.39	18.01	18.83	19.30	17.17	18.02	17.63	18.46	18.93
	6H	18.26	18.96	18.75	19.45	19.93	17.88	18.58	18.37	19.07	19.54
	8H	18.52	19.15	19.03	19.66	20.14	18.13	18.76	18.64	19.26	19.75
	12H	18.72	19.28	19.23	19.77	20.33	18.31	18.86	18.81	19.35	19.92
12H	4H	17.57	18.33	18.05	18.81	19.28	17.21	17.97	17.69	18.44	18.91
	6H	18.31	18.94	18.81	19.44	19.93	17.94	18.57	18.45	19.08	19.56
	8H	18.62	19.18	19.13	19.67	20.23	18.24	18.80	18.75	19.29	19.85