

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: P929792

Luminaire Tested: DFN2DS-4P2F0-020DS840-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P929792
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333882)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-4P2F0-020DS840-RLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

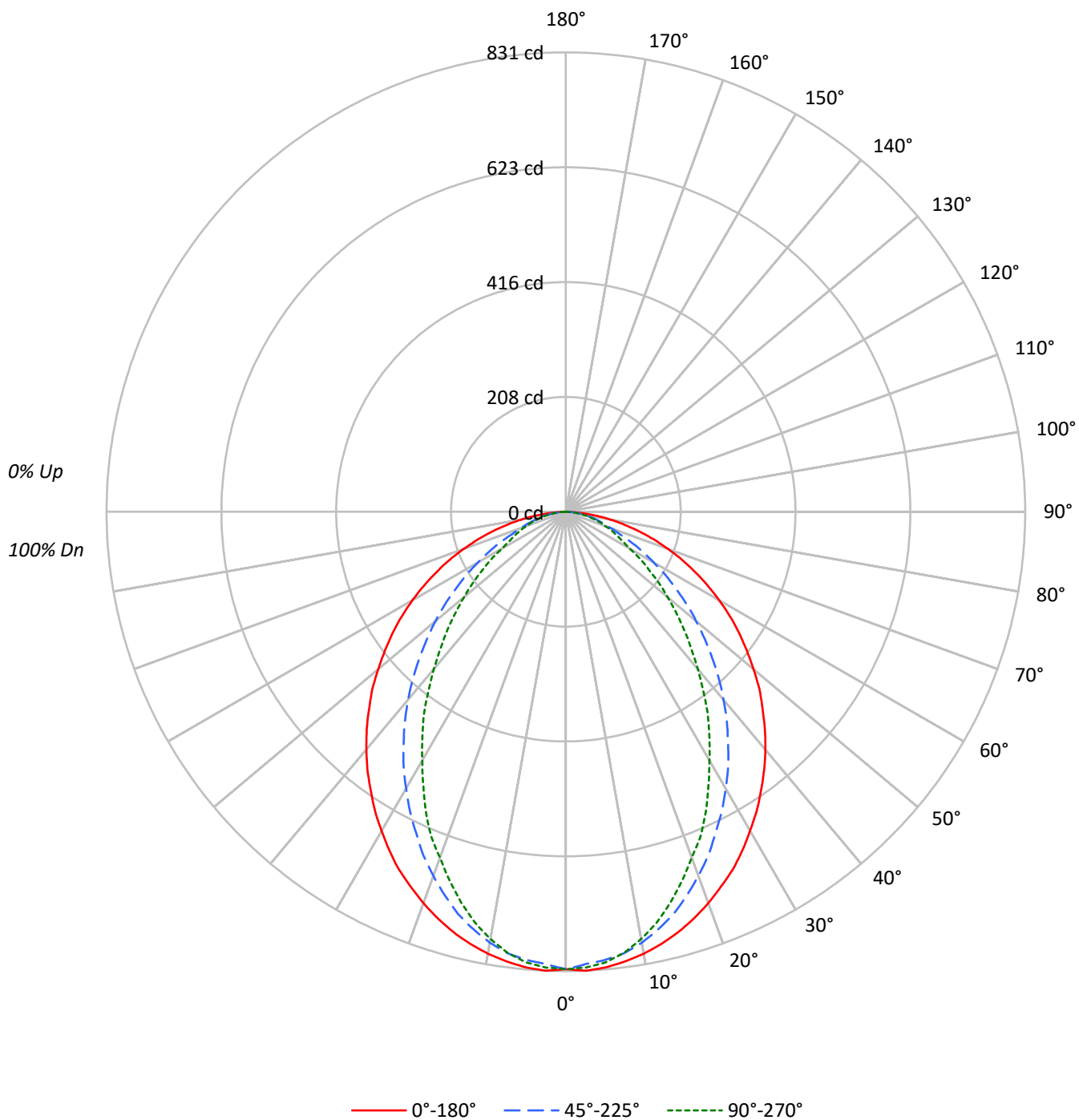
Lumens per Lamp: N/A
Luminaire Lumens: 1701.7 lumens
Efficiency: N/A
Efficacy: 88.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 2.07' x L: 2.07' x H: 0')
CIE Type: Direct

Input Watts (W): 19.3
Input Voltage (V):
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	110	106	102	98	107	103	100	97	99	96	94		95	93	91		92
2	101	94	87	82	98	92	86	81	88	83	79		85	81	78		82
3	93	83	76	70	90	82	75	69	79	73	68		76	71	67		74
4	86	75	66	60	83	73	66	60	71	64	59		69	63	58		66
5	79	67	59	53	77	66	58	52	64	57	52		62	56	51		60
6	74	61	53	47	72	60	52	46	58	51	46		57	50	46		55
7	68	56	47	42	67	55	47	42	53	46	41		52	46	41		51
8	64	51	43	38	62	51	43	37	49	42	37		48	42	37		47
9	60	47	39	34	59	47	39	34	46	39	34		44	38	34		44
10	56	44	36	31	55	43	36	31	42	36	31		41	35	31		41

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2072	2072	2072
5°	2080	2046	2057
10°	2064	2012	1995
15°	2040	1953	1897
20°	2007	1868	1774
25°	1974	1771	1655
30°	1927	1671	1502
35°	1881	1564	1369
40°	1836	1451	1214
45°	1782	1326	1074
50°	1727	1199	936
55°	1670	1062	804
60°	1605	919	668
65°	1531	772	608
70°	1442	635	559
75°	1332	580	522
80°	1177	518	474
85°	922	408	408

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1782 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	77.5	4.6
10°-20°	212.9	12.5
20°-30°	298.9	17.6
30°-40°	325.8	19.1
40°-50°	299.4	17.6
50°-60°	235.2	13.8
60°-70°	153.1	9.0
70°-80°	78.8	4.6
80°-90°	20.1	1.2
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°	589.3	34.6
0°-40°	915.1	53.8
0°-60°	1449.7	85.2
0°-90°	1701.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1701.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	827	827	827	827	827	
5°	827	824	814	821	818	78
15°	787	779	753	739	732	222
25°	714	690	641	610	599	329
35°	616	577	512	464	448	385
45°	503	453	374	321	303	389
55°	383	324	243	198	184	342
65°	258	198	130	105	103	256
75°	138	85	60	55	54	146
85°	32	16	14	14	14	39
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	827.4	827.4	827.4	827.4	827.4
2.5°	831.1	827.4	819.1	826.7	825.2
5°	827.4	823.7	813.9	820.7	818.4
7.5°	820.7	816.2	805.7	808.7	804.9
10°	811.7	806.4	791.5	789.2	784.8
12.5°	800.5	793.7	773.5	769.1	760.8
15°	787.0	778.7	753.3	739.0	731.6
17.5°	771.3	759.3	727.8	711.3	699.4
20°	753.3	738.2	700.9	682.2	665.7
22.5°	733.8	716.6	673.2	647.7	636.5
25°	714.4	690.4	640.9	610.3	599.0
27.5°	691.2	665.7	611.0	575.8	558.6
30°	666.5	637.9	578.1	539.9	519.6
32.5°	642.4	608.0	546.6	501.7	483.0
35°	615.5	577.4	511.5	464.3	447.7
37.5°	589.3	548.0	478.5	426.8	408.1
40°	561.6	516.7	444.0	390.9	371.4
42.5°	533.1	485.3	409.6	354.2	335.5
45°	503.2	453.0	374.5	321.2	303.2
47.5°	474.8	421.6	340.7	287.5	271.1
50°	443.3	390.2	307.8	256.1	240.4
52.5°	412.5	356.4	276.3	226.9	212.7
55°	382.6	324.2	243.3	198.5	184.2
57.5°	352.0	292.0	214.2	172.3	160.3
60°	320.5	260.6	183.5	145.3	133.3
62.5°	289.8	229.9	157.3	121.3	115.3
65°	258.4	197.7	130.3	104.9	102.6
67.5°	228.4	167.7	104.9	92.1	89.9
70°	196.9	138.5	86.8	79.4	76.4
72.5°	167.0	111.5	72.6	66.7	65.2
75°	137.7	85.3	59.9	54.7	54.0
77.5°	108.6	60.7	47.1	44.1	42.6
80°	81.6	43.4	35.9	32.9	32.9
82.5°	56.9	29.2	24.7	23.2	23.2
85°	32.1	16.4	14.2	14.2	14.2
87.5°	12.0	6.0	6.0	5.2	5.2
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	13.77	15.29	14.13	15.60	15.91	9.73	11.25	10.09	11.56	11.88
	3H	15.53	16.90	15.91	17.22	17.59	10.99	12.36	11.37	12.69	13.05
	4H	16.20	17.48	16.60	17.83	18.20	11.50	12.78	11.90	13.13	13.50
	6H	16.69	17.87	17.10	18.23	18.63	11.88	13.06	12.29	13.42	13.82
	8H	16.85	17.98	17.28	18.37	18.77	12.00	13.13	12.43	13.52	13.92
	12H	16.95	18.03	17.38	18.41	18.84	12.08	13.16	12.51	13.54	13.97
4H	2H	13.87	15.15	14.27	15.50	15.88	10.42	11.70	10.82	12.05	12.43
	3H	15.80	16.87	16.21	17.26	17.67	11.87	12.93	12.28	13.33	13.73
	4H	16.55	17.51	16.98	17.92	18.36	12.47	13.42	12.90	13.84	14.28
	6H	17.14	17.98	17.60	18.42	18.88	12.95	13.78	13.41	14.23	14.69
	8H	17.36	18.14	17.82	18.58	19.05	13.11	13.89	13.58	14.34	14.80
	12H	17.51	18.21	17.99	18.68	19.15	13.23	13.93	13.71	14.40	14.88
8H	4H	16.58	17.35	17.04	17.80	18.26	12.82	13.60	13.28	14.04	14.51
	6H	17.21	17.86	17.71	18.35	18.82	13.40	14.05	13.90	14.54	15.02
	8H	17.46	18.04	17.98	18.55	19.04	13.63	14.20	14.14	14.71	15.20
	12H	17.67	18.18	18.18	18.67	19.23	13.80	14.31	14.31	14.81	15.37
12H	4H	16.56	17.25	17.04	17.73	18.20	12.86	13.56	13.35	14.04	14.51
	6H	17.19	17.77	17.71	18.28	18.77	13.47	14.05	13.98	14.55	15.04
	8H	17.48	17.99	17.99	18.48	19.04	13.74	14.25	14.25	14.74	15.31