

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: P929804

Luminaire Tested: DFN2DS-4P2F0-020DS950-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P929804
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-4P2F0-020DS950-RLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

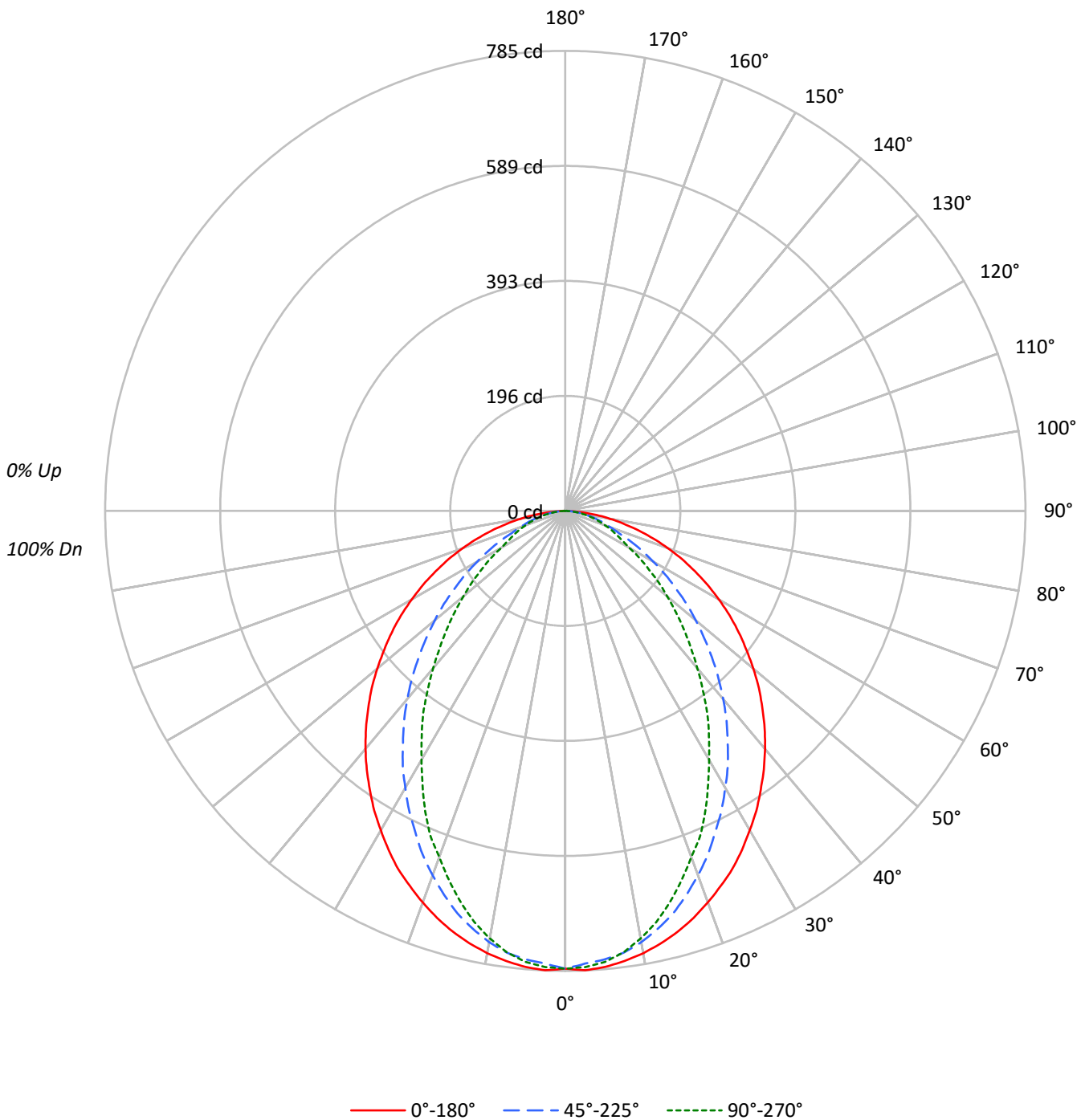
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1606.5 lumens
Efficiency: N/A
Efficacy: 83.2 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				20
RC	80				70				50				30				10				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	88	88	88	86
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	76	76	76	74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66	66	66	66	64
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	57	57	57	57	55
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	51	51	51	49
6	74	61	53	47	72	60	52	46	58	51	46	57	50	46	55	50	45	45	45	45	43
7	68	56	47	42	67	55	47	42	53	46	41	52	46	41	51	45	41	41	41	41	39
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	37	37	37	35
9	60	47	39	34	59	47	39	34	46	39	34	44	38	34	44	38	34	34	34	34	32
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	31	31	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1956	1956	1956
5°	1963	1931	1942
10°	1948	1900	1884
15°	1926	1843	1791
20°	1895	1763	1674
25°	1863	1672	1562
30°	1819	1578	1418
35°	1776	1476	1292
40°	1733	1370	1146
45°	1682	1252	1013
50°	1630	1132	884
55°	1577	1003	759
60°	1515	867	631
65°	1445	729	574
70°	1361	600	528
75°	1258	547	492
80°	1110	489	448
85°	871	385	385

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1682 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.2	4.6
10°-20°	201.0	12.5
20°-30°	282.2	17.6
30°-40°	307.6	19.1
40°-50°	282.7	17.6
50°-60°	222.0	13.8
60°-70°	144.5	9.0
70°-80°	74.4	4.6
80°-90°	19.0	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°	556.3	34.6
0°-40°	863.9	53.8
0°-60°	1368.6	85.2
0°-90°	1606.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1606.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	781	781	781	781	781	
5°	781	778	768	775	773	74
15°	743	735	711	698	691	209
25°	674	652	605	576	566	310
35°	581	545	483	438	423	364
45°	475	428	354	303	286	367
55°	361	306	230	187	174	323
65°	244	187	123	99	97	242
75°	130	80	56	52	51	138
85°	30	16	13	13	13	36
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	781.1	781.1	781.1	781.1	781.1
2.5°	784.6	781.1	773.3	780.5	779.1
5°	781.1	777.6	768.4	774.8	772.6
7.5°	774.8	770.6	760.6	763.5	759.9
10°	766.3	761.3	747.2	745.0	740.9
12.5°	755.7	749.3	730.2	726.0	718.2
15°	743.0	735.1	711.1	697.7	690.7
17.5°	728.1	716.8	687.1	671.5	660.3
20°	711.1	696.9	661.7	644.0	628.4
22.5°	692.8	676.5	635.5	611.5	600.9
25°	674.4	651.8	605.1	576.2	565.5
27.5°	652.5	628.4	576.8	543.6	527.3
30°	629.2	602.2	545.7	509.7	490.5
32.5°	606.5	574.0	516.1	473.6	456.0
35°	581.1	545.1	482.9	438.3	422.7
37.5°	556.3	517.4	451.7	402.9	385.3
40°	530.1	487.8	419.2	369.0	350.6
42.5°	503.3	458.1	386.7	334.3	316.8
45°	475.1	427.6	353.5	303.3	286.2
47.5°	448.2	398.0	321.7	271.4	255.9
50°	418.5	368.4	290.6	241.7	227.0
52.5°	389.4	336.4	260.8	214.2	200.8
55°	361.2	306.1	229.7	187.4	173.9
57.5°	332.3	275.7	202.2	162.6	151.3
60°	302.6	246.0	173.2	137.2	125.9
62.5°	273.6	217.1	148.5	114.5	108.9
65°	243.9	186.6	123.0	99.0	96.9
67.5°	215.6	158.3	99.0	86.9	84.9
70°	185.9	130.8	81.9	74.9	72.1
72.5°	157.6	105.3	68.5	62.9	61.5
75°	130.0	80.5	56.5	51.6	50.9
77.5°	102.5	57.3	44.5	41.7	40.3
80°	77.0	41.0	33.9	31.1	31.1
82.5°	53.7	27.6	23.3	21.9	21.9
85°	30.3	15.5	13.4	13.4	13.4
87.5°	11.3	5.7	5.7	4.9	4.9
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	13.57	15.09	13.93	15.40	15.72	9.53	11.05	9.89	11.36	11.68
	3H	15.33	16.70	15.71	17.02	17.39	10.79	12.16	11.17	12.48	12.85
	4H	16.00	17.28	16.40	17.63	18.00	11.29	12.57	11.69	12.92	13.30
	6H	16.49	17.67	16.90	18.03	18.43	11.67	12.86	12.09	13.22	13.62
	8H	16.65	17.78	17.08	18.17	18.57	11.80	12.93	12.23	13.31	13.72
	12H	16.75	17.83	17.18	18.21	18.64	11.88	12.96	12.31	13.34	13.77
4H	2H	13.67	14.95	14.07	15.30	15.68	10.22	11.50	10.62	11.85	12.23
	3H	15.60	16.67	16.01	17.07	17.47	11.66	12.73	12.08	13.13	13.53
	4H	16.35	17.31	16.78	17.72	18.16	12.26	13.22	12.70	13.64	14.07
	6H	16.94	17.78	17.40	18.22	18.68	12.75	13.58	13.21	14.03	14.49
	8H	17.16	17.94	17.62	18.38	18.85	12.91	13.69	13.38	14.14	14.60
	12H	17.31	18.01	17.79	18.48	18.95	13.03	13.73	13.51	14.20	14.67
8H	4H	16.38	17.15	16.84	17.60	18.06	12.62	13.39	13.08	13.84	14.31
	6H	17.01	17.66	17.51	18.15	18.62	13.20	13.85	13.70	14.34	14.81
	8H	17.26	17.84	17.78	18.35	18.84	13.42	14.00	13.94	14.51	15.00
	12H	17.47	17.98	17.98	18.47	19.03	13.60	14.11	14.11	14.61	15.17
12H	4H	16.36	17.05	16.84	17.53	18.00	12.66	13.36	13.14	13.83	14.30
	6H	16.99	17.57	17.51	18.08	18.57	13.27	13.84	13.78	14.35	14.84
	8H	17.28	17.79	17.79	18.28	18.84	13.54	14.05	14.05	14.54	15.11