

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: P624706

Luminaire Tested: S930DIP-W435-X4-USTD-W

Issue Date: 11/3/2022

**Test Information**

Test Method: LM-79-2019  
Report Number: P624706  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35539-R2)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/3/2022  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S930DIP-W435-X4-USTD-W  
Description: NEO-RAY COVERA DIRECT/INDIRECT 4-FOOT LED WaveStream LUMINAIRE  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

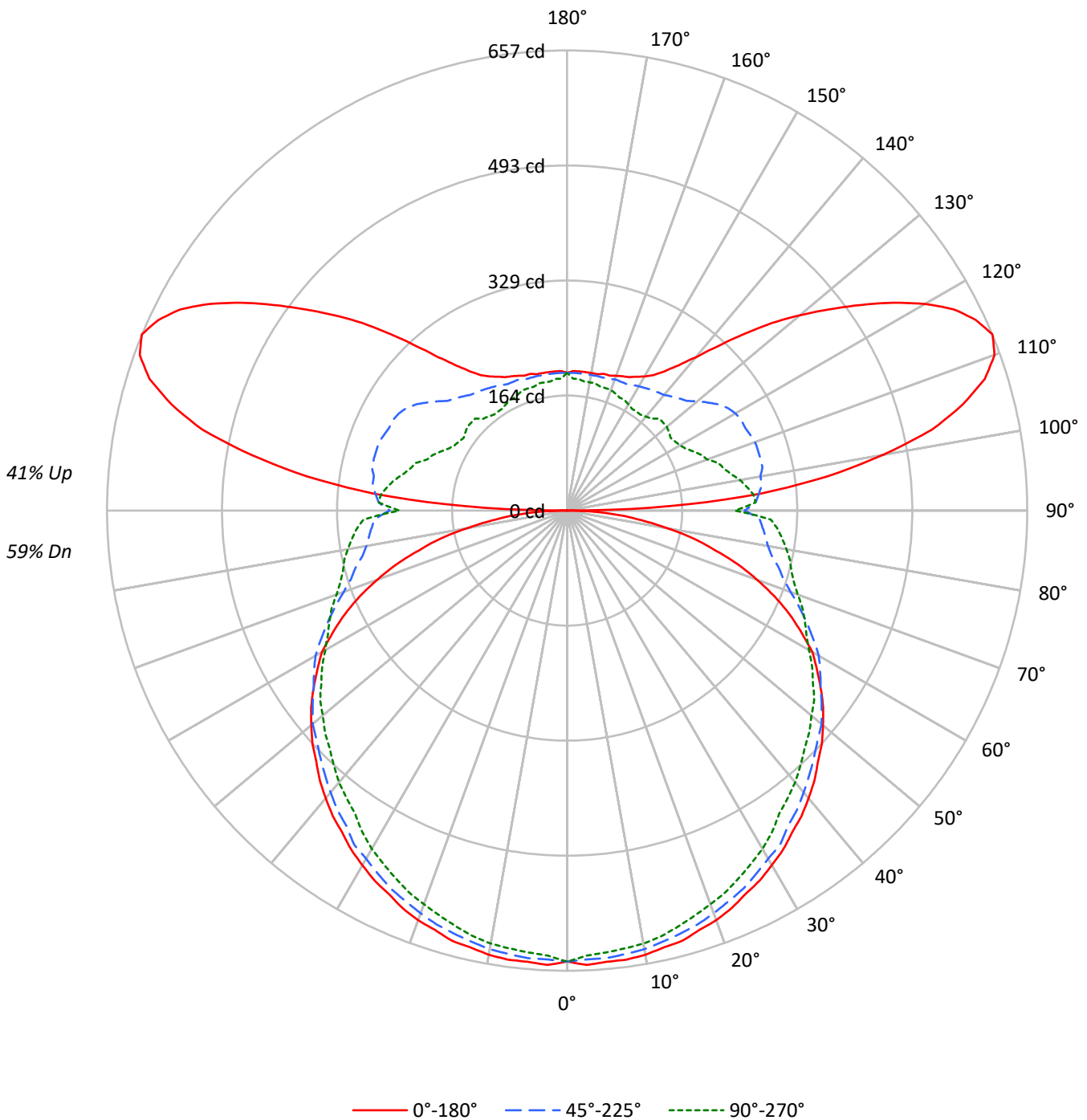
Lumens per Lamp: N/A  
Luminaire Lumens: 4360.8 lumens  
Efficiency: N/A  
Efficacy: 104.6 lumens/watt  
Spacing Criteria (0/90/45): 1.35 / 1.29 / 1.48  
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 3.83' x H: 0.17')  
CIE Type: General Diffuse

Input Watts (W): 41.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
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	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	109	109	109	109	102	102	102	102	88	88	88	76	76	76	65	65	65	59
1	97	92	87	82	90	85	81	77	73	70	67	63	60	58	53	51	49	44
2	87	78	71	65	81	73	67	61	63	58	53	54	50	46	45	42	39	35
3	79	68	60	53	73	63	56	50	55	49	44	46	42	38	39	35	32	28
4	72	60	51	44	66	56	48	42	48	42	37	41	36	32	34	30	27	24
5	66	53	44	37	61	49	41	35	43	36	31	36	31	27	31	27	23	20
6	61	47	38	32	56	44	36	30	38	32	27	33	28	23	28	23	20	17
7	56	43	34	28	52	40	32	26	35	28	23	30	24	21	25	21	18	15
8	52	39	30	24	48	36	29	23	31	25	21	27	22	18	23	19	16	13
9	48	35	27	22	45	33	26	21	29	23	18	25	20	16	21	17	14	12
10	45	32	25	19	42	30	23	18	26	21	16	23	18	15	20	16	13	11

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2712	2712	2712
5°	2723	2663	2620
10°	2733	2624	2572
15°	2741	2582	2511
20°	2746	2549	2457
25°	2749	2523	2411
30°	2774	2493	2370
35°	2796	2467	2311
40°	2844	2460	2302
45°	2891	2459	2285
50°	2971	2491	2299
55°	3055	2503	2318
60°	3166	2571	2344
65°	3193	2602	2430
70°	3172	2663	2557
75°	3055	2866	2790
80°	2831	3242	3189
85°	2434	4016	3781

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 90°  
 Luminance: 6766 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	61.1	1.4
10°-20°	177.1	4.1
20°-30°	274.7	6.3
30°-40°	344.5	7.9
40°-50°	384.4	8.8
50°-60°	394.4	9.0
60°-70°	367.2	8.4
70°-80°	313.0	7.2
80°-90°	262.5	6.0
90°-100°	299.8	6.9
100°-110°	367.4	8.4
110°-120°	347.8	8.0
120°-130°	274.4	6.3
130°-140°	193.4	4.4
140°-150°	132.6	3.0
150°-160°	92.2	2.1
160°-170°	55.6	1.3
170°-180°	18.7	0.4
0°-30°	512.9	11.8
0°-40°	857.4	19.7
0°-60°	1636.2	37.5
0°-90°	2578.9	59.1
90°-120°	1015.0	23.3
90°-150°	1615.5	37.0
90°-180°	1782.0	40.9
0°-180°	4360.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	644	644	644	644	644	
5°	647	647	641	641	633	62
15°	636	633	625	625	614	179
25°	604	601	596	593	579	279
35°	560	555	550	544	528	352
45°	506	501	498	496	480	392
55°	442	436	442	447	428	395
65°	350	358	377	383	374	345
75°	218	256	312	337	331	231
85°	75	194	280	302	302	75
90°	0	218	253	251	240	26
95°	278	302	275	272	267	260
105°	585	463	286	245	232	607
115°	644	488	280	216	199	632
125°	512	407	264	205	180	461
135°	356	299	226	197	186	278
145°	242	232	210	189	172	156
155°	210	208	199	191	178	98
165°	202	199	197	194	183	57
175°	199	199	197	197	189	19
180°	197	197	197	197	197	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	643.9	643.9	643.9	643.9	643.9
2.5°	649.3	646.6	641.3	643.9	635.9
5°	646.6	646.6	641.3	641.3	633.2
7.5°	646.6	643.9	638.6	638.6	630.5
10°	643.9	641.3	635.9	635.9	627.8
12.5°	638.6	638.6	630.5	630.5	622.4
15°	635.9	633.2	625.1	625.1	614.3
17.5°	627.8	625.1	619.7	617.0	606.2
20°	622.4	619.7	611.6	608.9	598.1
22.5°	614.3	611.6	603.5	600.8	590.1
25°	603.5	600.8	595.5	592.8	579.3
27.5°	595.5	592.8	584.7	582.0	568.5
30°	584.7	582.0	573.9	568.5	557.7
32.5°	573.9	568.5	565.8	557.7	544.3
35°	560.4	555.0	549.6	544.3	528.1
37.5°	549.6	544.3	538.9	533.5	517.3
40°	536.2	528.1	525.4	520.0	506.5
42.5°	522.7	514.6	511.9	509.2	493.1
45°	506.5	501.1	498.5	495.8	479.6
47.5°	493.1	485.0	485.0	482.3	468.8
50°	476.9	468.8	474.2	471.5	455.3
52.5°	460.7	455.3	458.0	460.7	444.6
55°	441.9	436.5	441.9	447.3	428.4
57.5°	423.0	420.3	428.4	431.1	414.9
60°	404.2	401.5	414.9	414.9	398.8
62.5°	377.2	379.9	396.1	398.8	385.3
65°	350.3	358.3	377.2	382.6	374.5
67.5°	320.6	336.8	358.3	371.8	363.7
70°	288.3	312.5	339.5	358.3	350.3
72.5°	256.0	285.6	323.3	347.6	339.5
75°	218.2	256.0	312.5	336.8	331.4
77.5°	185.9	229.0	299.1	328.7	326.0
80°	145.5	207.5	291.0	320.6	317.9
82.5°	107.8	194.0	285.6	312.5	309.9
85°	75.4	194.0	280.2	301.8	301.8
87.5°	40.4	204.8	274.8	293.7	291.0
90°	0.0	218.2	253.3	250.6	239.8
92.5°	148.2	258.7	269.4	272.1	269.4
95°	277.5	301.8	274.8	272.1	266.7
97.5°	374.5	344.9	280.2	264.0	258.7
100°	458.0	390.7	280.2	258.7	250.6
102.5°	533.5	428.4	285.6	250.6	239.8
105°	584.7	463.4	285.6	245.2	231.7
107.5°	625.1	487.7	285.6	239.8	226.3
110°	649.3	498.5	285.6	234.4	212.9



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	657.4	498.5	282.9	223.6	207.5
115°	643.9	487.7	280.2	215.5	199.4
117.5°	622.4	474.2	280.2	210.2	191.3
120°	590.1	455.3	277.5	207.5	185.9
122.5°	552.3	431.1	272.1	204.8	183.2
125°	511.9	406.8	264.0	204.8	180.5
127.5°	471.5	379.9	253.3	207.5	183.2
130°	433.8	353.0	242.5	207.5	185.9
132.5°	396.1	326.0	231.7	204.8	185.9
135°	355.7	299.1	226.3	196.7	185.9
137.5°	317.9	274.8	220.9	191.3	177.8
140°	285.6	258.7	215.5	188.6	175.1
142.5°	261.4	245.2	212.9	185.9	172.4
145°	242.5	231.7	210.2	188.6	172.4
147.5°	229.0	223.6	207.5	188.6	172.4
150°	220.9	218.2	204.8	188.6	175.1
152.5°	215.5	212.9	202.1	191.3	177.8
155°	210.2	207.5	199.4	191.3	177.8
157.5°	207.5	204.8	199.4	191.3	180.5
160°	204.8	202.1	199.4	191.3	183.2
162.5°	202.1	202.1	196.7	194.0	183.2
165°	202.1	199.4	196.7	194.0	183.2
167.5°	199.4	199.4	196.7	194.0	185.9
170°	199.4	199.4	196.7	194.0	185.9
172.5°	199.4	199.4	196.7	194.0	185.9
175°	199.4	199.4	196.7	196.7	188.6
177.5°	199.4	199.4	196.7	196.7	188.6
180°	196.7	196.7	196.7	196.7	196.7



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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	12.04	13.08	12.89	13.97	15.10	12.69	13.73	13.54	14.62	15.75
	3H	14.13	15.08	15.00	15.98	17.13	15.46	16.41	16.33	17.31	18.46
	4H	14.92	15.82	15.80	16.73	17.89	16.92	17.82	17.80	18.73	19.89
	6H	15.49	16.33	16.39	17.25	18.42	18.54	19.38	19.43	20.29	21.47
	8H	15.68	16.49	16.58	17.42	18.59	19.41	20.21	20.31	21.14	22.32
	12H	15.80	16.57	16.71	17.50	18.70	20.36	21.13	21.27	22.05	23.26
4H	2H	12.87	13.77	13.75	14.68	15.84	13.35	14.26	14.24	15.16	16.32
	3H	15.21	15.99	16.11	16.92	18.10	16.36	17.13	17.25	18.07	19.25
	4H	16.17	16.89	17.08	17.82	19.02	17.98	18.70	18.89	19.63	20.83
	6H	16.92	17.56	17.85	18.51	19.71	19.80	20.43	20.72	21.38	22.58
	8H	17.20	17.80	18.13	18.75	19.96	20.77	21.37	21.70	22.32	23.53
	12H	17.40	17.94	18.34	18.91	20.13	21.84	22.38	22.78	23.35	24.57
8H	4H	16.89	17.49	17.82	18.44	19.65	18.39	18.98	19.31	19.93	21.15
	6H	17.92	18.43	18.87	19.42	20.63	20.43	20.94	21.38	21.93	23.14
	8H	18.38	18.83	19.34	19.81	21.04	21.57	22.03	22.53	23.01	24.24
	12H	18.75	19.16	19.72	20.13	21.41	22.84	23.25	23.81	24.22	25.50
12H	4H	17.10	17.64	18.04	18.61	19.83	18.43	18.97	19.37	19.94	21.16
	6H	18.29	18.75	19.25	19.73	20.96	20.56	21.01	21.51	21.99	23.22
	8H	18.88	19.29	19.84	20.26	21.54	21.78	22.19	22.75	23.16	24.44