

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: P624668

Luminaire Tested: S930DIP-W230-X2-USTD-W

Issue Date: 11/3/2022

Test Information

Test Method: LM-79-2019
Report Number: P624668
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35531-R2)
Test Lab: INNOVATION CENTER
Issue Date: 11/3/2022
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S930DIP-W230-X2-USTD-W
Description: NEO-RAY COVERA DIRECT/INDIRECT 2-FOOT LED WaveStream LUMINAIRE
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

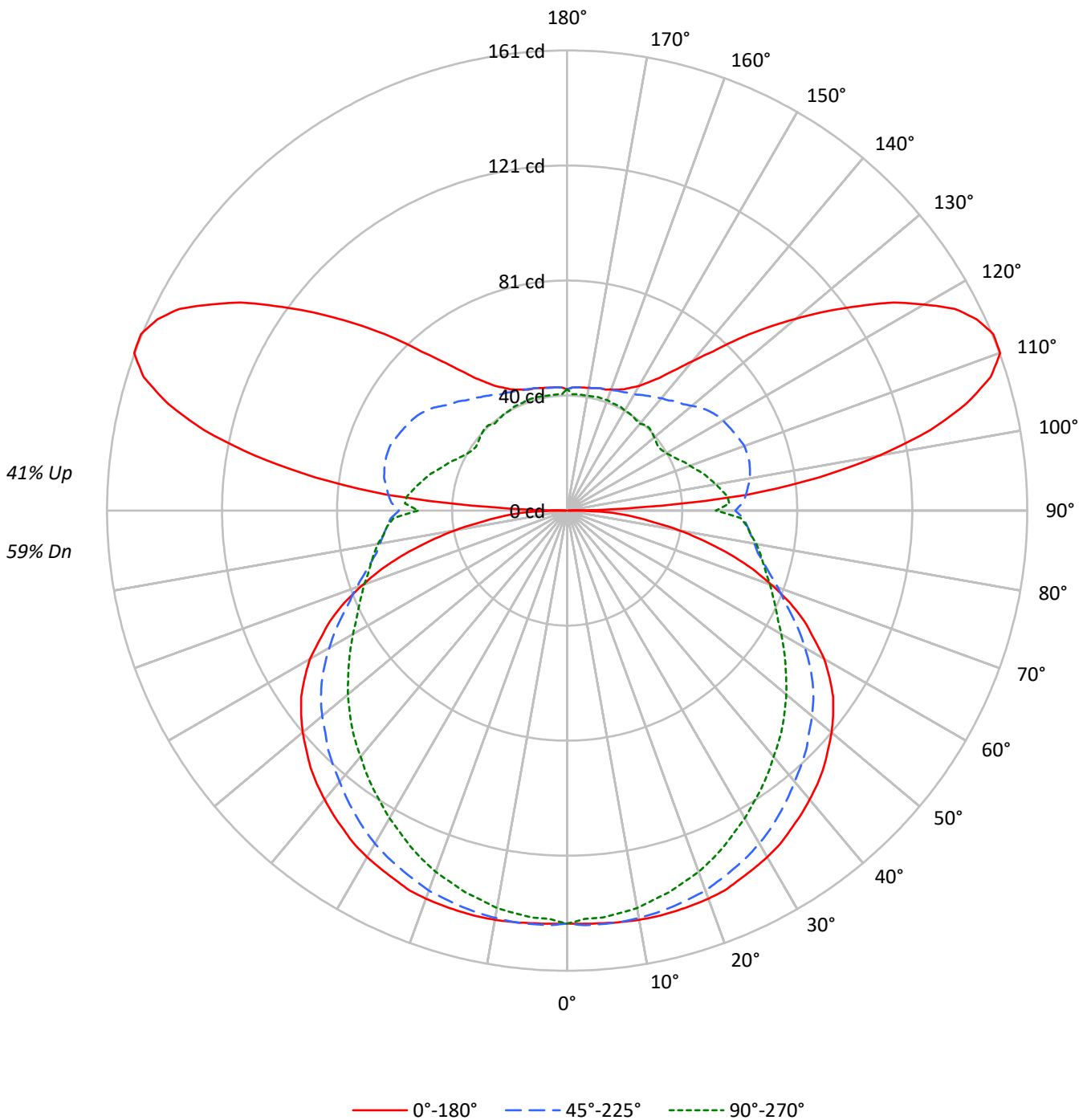
Lumens per Lamp: N/A
Luminaire Lumens: 1016.2 lumens
Efficiency: N/A
Efficacy: 98.7 lumens/watt
Spacing Criteria (0/90/45): 1.44 / 1.28 / 1.52
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1.92' x H: 0.17')
CIE Type: General Diffuse

Input Watts (W): 10.3
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										
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	50	30	10	0														
RCR																																						
0	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64	59																				
1	97	92	87	82	90	85	81	77	74	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	26	23	20																				
6	61	47	38	32	56	44	36	30	38	32	27	33	27	23	28	23	20	17																				
7	56	43	34	28	52	40	32	26	35	28	23	30	24	20	25	21	18	15																				
8	52	38	30	24	48	36	28	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	24	19	42	30	23	18	26	20	16	23	18	15	20	16	13	11																				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1217	1217	1217
5°	1216	1203	1183
10°	1225	1188	1157
15°	1237	1176	1130
20°	1256	1167	1105
25°	1273	1156	1080
30°	1297	1150	1057
35°	1321	1141	1037
40°	1353	1135	1022
45°	1392	1138	1016
50°	1434	1142	1011
55°	1484	1149	1009
60°	1521	1146	1017
65°	1539	1144	1045
70°	1515	1167	1102
75°	1445	1227	1195
80°	1293	1372	1348
85°	1096	1643	1584

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°
 Vertical Angle: 90°
 Luminance: 2608 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	13.8	1.4
10°-20°	40.4	4.0
20°-30°	63.5	6.2
30°-40°	80.7	7.9
40°-50°	90.9	8.9
50°-60°	93.1	9.2
60°-70°	86.1	8.5
70°-80°	72.3	7.1
80°-90°	59.7	5.9
90°-100°	68.8	6.8
100°-110°	86.5	8.5
110°-120°	82.3	8.1
120°-130°	64.4	6.3
130°-140°	45.5	4.5
140°-150°	31.0	3.1
150°-160°	21.0	2.1
160°-170°	12.4	1.2
170°-180°	4.1	0.4
0°-30°	117.6	11.6
0°-40°	198.3	19.5
0°-60°	382.3	37.6
0°-90°	600.4	59.1
90°-120°	237.6	23.4
90°-150°	378.4	37.2
90°-180°	416.0	40.9
0°-180°	1016.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	144	144	144	144	144	
5°	145	145	145	145	143	14
15°	145	145	143	141	138	41
25°	142	141	138	134	130	66
35°	136	134	130	124	118	86
45°	127	123	118	112	107	98
55°	114	109	105	99	93	101
65°	92	90	87	84	80	90
75°	59	63	71	73	71	62
85°	23	49	63	64	63	22
90°	0	54	59	55	52	6
95°	63	76	63	58	56	60
105°	145	114	66	53	50	150
115°	158	121	64	48	43	155
125°	125	99	61	45	39	112
135°	85	72	54	45	41	66
145°	57	54	49	44	40	37
155°	47	47	46	44	41	22
165°	44	44	44	43	41	13
175°	43	43	43	43	41	4
180°	42	42	42	42	42	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	144.5	144.5	144.5	144.5	144.5
2.5°	144.7	144.9	145.2	145.2	143.0
5°	144.9	145.0	145.2	145.0	142.9
7.5°	145.2	145.0	145.2	144.5	142.0
10°	145.4	145.2	144.7	143.9	141.2
12.5°	145.4	145.0	144.2	142.5	139.5
15°	145.2	144.7	143.4	141.3	138.2
17.5°	144.9	144.4	142.4	139.7	136.2
20°	144.5	143.7	141.5	138.3	134.5
22.5°	143.9	142.5	139.8	136.3	132.2
25°	142.5	141.3	138.2	134.0	129.7
27.5°	141.3	139.8	136.5	131.7	126.8
30°	140.0	138.2	134.5	129.2	124.3
32.5°	138.5	136.3	132.2	126.6	121.3
35°	136.3	134.0	129.5	124.0	118.5
37.5°	134.3	131.8	126.8	121.1	115.6
40°	132.0	129.2	123.8	118.0	112.4
42.5°	129.7	126.5	121.1	115.5	109.6
45°	127.0	123.3	118.3	112.3	106.6
47.5°	123.8	120.1	114.8	109.1	103.3
50°	120.8	117.1	111.9	105.8	100.1
52.5°	117.3	113.4	108.6	102.3	96.6
55°	113.6	109.3	104.9	98.9	93.2
57.5°	108.9	105.3	100.6	95.1	89.9
60°	103.9	100.4	96.1	91.4	86.5
62.5°	97.4	95.4	91.6	87.9	83.2
65°	91.6	90.2	86.7	84.5	80.5
67.5°	84.4	84.7	82.2	81.4	77.9
70°	76.2	78.2	78.4	78.5	75.5
72.5°	68.0	70.8	74.5	75.5	73.0
75°	58.8	63.2	71.2	73.3	71.0
77.5°	49.1	56.0	68.3	71.3	69.2
80°	39.8	51.0	66.5	69.2	67.2
82.5°	30.1	48.5	64.8	66.7	64.8
85°	22.6	48.6	63.3	64.5	63.2
87.5°	14.5	50.8	61.8	62.2	60.8
90°	0.3	54.5	58.8	54.6	52.0
92.5°	25.7	64.8	61.5	58.5	56.8
95°	63.0	76.0	62.8	58.0	56.3
97.5°	88.9	87.5	63.8	56.8	54.5
100°	111.1	97.6	65.0	55.8	52.8
102.5°	130.2	106.8	65.5	54.5	51.1
105°	144.7	114.3	66.0	53.1	49.5
107.5°	155.4	119.8	66.0	51.8	47.5
110°	161.2	123.3	66.0	50.5	45.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	161.4	123.3	65.2	48.8	44.4
115°	158.2	120.8	64.5	47.8	42.6
117.5°	152.9	116.8	63.7	46.3	41.3
120°	144.2	111.8	63.0	45.4	40.1
122.5°	135.5	105.6	62.0	45.1	39.3
125°	124.8	99.1	60.7	44.9	38.9
127.5°	114.6	92.2	59.1	45.1	39.3
130°	104.3	85.4	57.0	45.6	39.8
132.5°	94.6	77.9	55.1	45.8	40.3
135°	85.0	71.7	54.0	45.4	40.8
137.5°	75.5	66.0	52.3	44.4	40.6
140°	68.2	61.3	51.3	44.1	39.6
142.5°	62.0	57.3	50.0	44.3	39.8
145°	56.8	54.3	49.0	44.3	40.1
147.5°	53.3	51.8	48.0	44.3	40.4
150°	50.3	49.6	46.9	44.1	40.4
152.5°	48.5	48.1	46.4	44.1	40.8
155°	46.8	46.8	45.8	43.9	40.8
157.5°	45.8	45.8	45.4	43.8	40.8
160°	45.1	45.3	44.9	43.8	41.1
162.5°	44.4	44.6	44.6	43.6	41.1
165°	44.3	44.3	44.3	43.4	41.1
167.5°	43.9	43.9	43.9	43.3	40.9
170°	43.6	43.6	43.6	43.1	40.8
172.5°	43.4	43.3	43.3	42.9	40.8
175°	43.3	43.3	43.3	42.9	40.8
177.5°	43.1	43.1	43.1	42.8	40.8
180°	42.4	42.4	42.4	42.4	42.4



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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	9.84	10.88	10.69	11.77	12.90	9.47	10.52	10.33	11.41	12.54
	3H	12.02	12.97	12.89	13.87	15.02	12.13	13.08	13.00	13.98	15.13
	4H	12.84	13.75	13.73	14.66	15.82	13.50	14.40	14.38	15.31	16.47
	6H	13.46	14.31	14.36	15.22	16.40	14.98	15.82	15.88	16.73	17.91
	8H	13.68	14.48	14.58	15.42	16.59	15.75	16.56	16.65	17.49	18.66
	12H	13.83	14.60	14.74	15.53	16.73	16.57	17.34	17.48	18.27	19.47
4H	2H	10.49	11.40	11.38	12.30	13.46	10.22	11.12	11.10	12.03	13.19
	3H	12.93	13.70	13.83	14.64	15.82	13.09	13.87	13.99	14.80	15.98
	4H	13.93	14.64	14.84	15.57	16.78	14.62	15.34	15.53	16.27	17.47
	6H	14.73	15.36	15.65	16.31	17.51	16.29	16.92	17.21	17.87	19.07
	8H	15.04	15.63	15.96	16.58	17.80	17.16	17.75	18.08	18.70	19.92
	12H	15.28	15.82	16.22	16.78	18.01	18.08	18.63	19.03	19.59	20.82
8H	4H	14.49	15.08	15.42	16.03	17.25	15.08	15.67	16.00	16.62	17.84
	6H	15.55	16.05	16.50	17.04	18.26	16.97	17.48	17.92	18.47	19.68
	8H	16.04	16.49	16.99	17.47	18.70	18.01	18.46	18.97	19.44	20.67
	12H	16.46	16.86	17.42	17.84	19.11	19.13	19.53	20.09	20.51	21.78
12H	4H	14.64	15.18	15.58	16.14	17.37	15.14	15.68	16.08	16.64	17.87
	6H	15.84	16.29	16.79	17.27	18.50	17.12	17.57	18.08	18.55	19.78
	8H	16.44	16.84	17.40	17.82	19.09	18.24	18.65	19.21	19.62	20.90