

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: P624674

Luminaire Tested: S930DIP-W235-X4-USTD-W

Issue Date: 11/3/2022

Test Information

Test Method: LM-79-2019
Report Number: P624674
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-W235-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

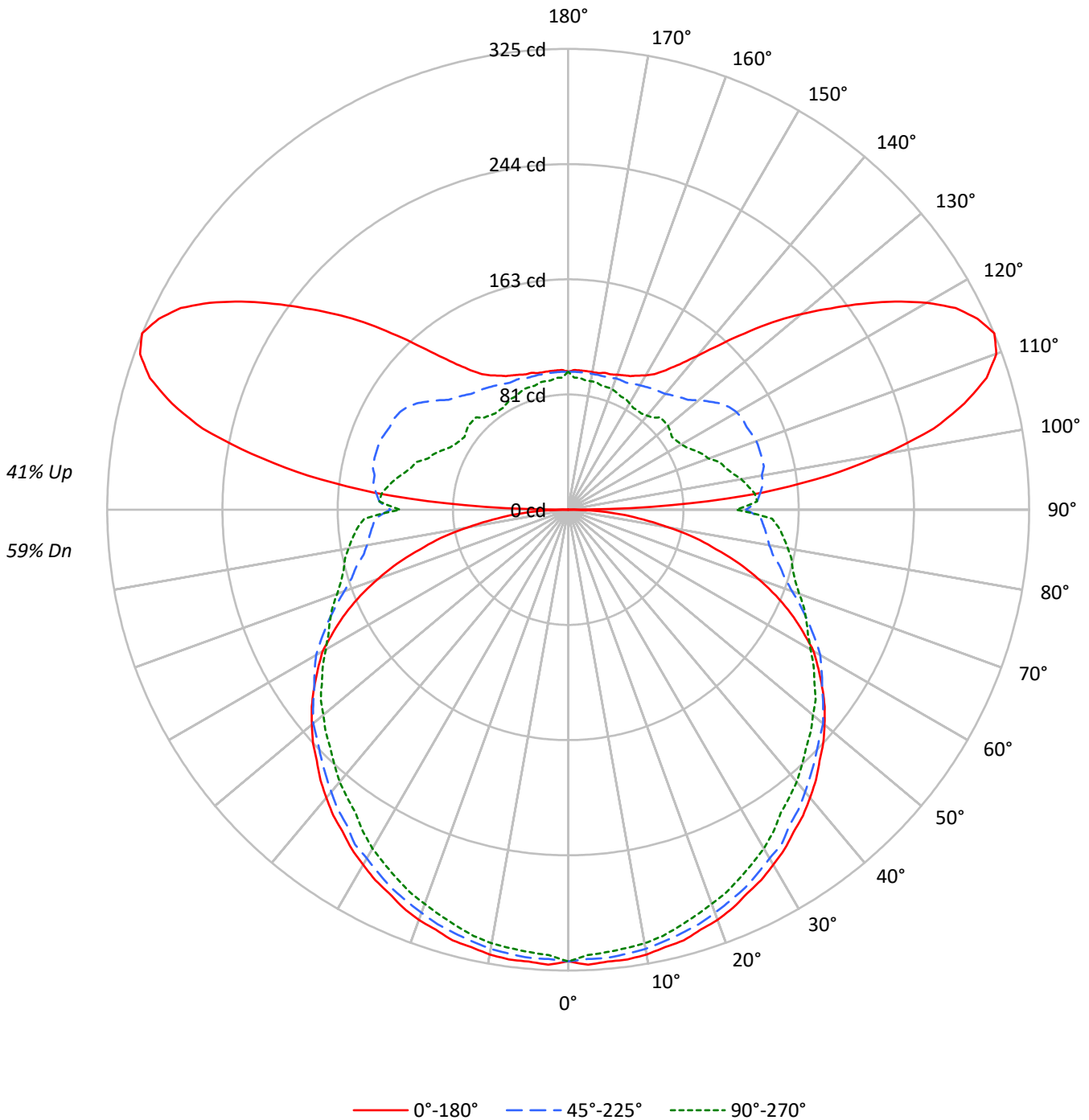
Lumens per Lamp: N/A
Luminaire Lumens: 2157.1 lumens
Efficiency: N/A
Efficacy: 107.9 lumens/watt
Spacing Criteria (0/90/45): 1.35 / 1.29 / 1.48
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 3.83' x H: 0.17')
CIE Type: General Diffuse

Input Watts (W): 20
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	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°	1342	1342	1342
5°	1347	1317	1296
10°	1352	1298	1272
15°	1356	1277	1242
20°	1359	1261	1216
25°	1360	1248	1192
30°	1372	1233	1173
35°	1383	1221	1143
40°	1407	1217	1139
45°	1431	1216	1130
50°	1470	1232	1137
55°	1511	1238	1147
60°	1566	1272	1160
65°	1580	1287	1202
70°	1569	1317	1265
75°	1512	1418	1380
80°	1401	1603	1578
85°	1204	1986	1870

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°
 Vertical Angle: 90°
 Luminance: 3349 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.2	1.4
10°-20°	87.6	4.1
20°-30°	135.9	6.3
30°-40°	170.4	7.9
40°-50°	190.1	8.8
50°-60°	195.1	9.0
60°-70°	181.7	8.4
70°-80°	154.8	7.2
80°-90°	129.9	6.0
90°-100°	148.3	6.9
100°-110°	181.7	8.4
110°-120°	172.0	8.0
120°-130°	135.8	6.3
130°-140°	95.7	4.4
140°-150°	65.6	3.0
150°-160°	45.6	2.1
160°-170°	27.5	1.3
170°-180°	9.3	0.4
0°-30°	253.7	11.8
0°-40°	424.1	19.7
0°-60°	809.3	37.5
0°-90°	1275.7	59.1
90°-120°	502.1	23.3
90°-150°	799.1	37.0
90°-180°	881.0	40.8
0°-180°	2157.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	318	318	318	318	318	
5°	320	320	317	317	313	31
15°	314	313	309	309	304	89
25°	298	297	294	293	286	138
35°	277	275	272	269	261	174
45°	251	248	247	245	237	194
55°	219	216	219	221	212	196
65°	173	177	187	189	185	171
75°	108	127	155	167	164	114
85°	37	96	139	149	149	37
90°	0	108	125	124	119	13
95°	137	149	136	135	132	129
105°	289	229	141	121	115	300
115°	318	241	139	107	99	312
125°	253	201	131	101	89	228
135°	176	148	112	97	92	138
145°	120	115	104	93	85	77
155°	104	103	99	95	88	49
165°	100	99	97	96	91	28
175°	99	99	97	97	93	9
180°	97	97	97	97	97	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	318.5	318.5	318.5	318.5	318.5
2.5°	321.2	319.9	317.2	318.5	314.5
5°	319.9	319.9	317.2	317.2	313.2
7.5°	319.9	318.5	315.9	315.9	311.9
10°	318.5	317.2	314.5	314.5	310.5
12.5°	315.9	315.9	311.9	311.9	307.9
15°	314.5	313.2	309.2	309.2	303.9
17.5°	310.5	309.2	306.5	305.2	299.9
20°	307.9	306.5	302.5	301.2	295.9
22.5°	303.9	302.5	298.5	297.2	291.9
25°	298.5	297.2	294.5	293.2	286.5
27.5°	294.5	293.2	289.2	287.9	281.2
30°	289.2	287.9	283.9	281.2	275.9
32.5°	283.9	281.2	279.9	275.9	269.2
35°	277.2	274.6	271.9	269.2	261.2
37.5°	271.9	269.2	266.6	263.9	255.9
40°	265.2	261.2	259.9	257.2	250.6
42.5°	258.6	254.6	253.2	251.9	243.9
45°	250.6	247.9	246.6	245.2	237.2
47.5°	243.9	239.9	239.9	238.6	231.9
50°	235.9	231.9	234.6	233.2	225.2
52.5°	227.9	225.2	226.6	227.9	219.9
55°	218.6	215.9	218.6	221.2	211.9
57.5°	209.2	207.9	211.9	213.2	205.2
60°	199.9	198.6	205.2	205.2	197.3
62.5°	186.6	187.9	195.9	197.3	190.6
65°	173.3	177.3	186.6	189.3	185.3
67.5°	158.6	166.6	177.3	183.9	179.9
70°	142.6	154.6	167.9	177.3	173.3
72.5°	126.6	141.3	159.9	171.9	167.9
75°	108.0	126.6	154.6	166.6	163.9
77.5°	92.0	113.3	147.9	162.6	161.3
80°	72.0	102.6	143.9	158.6	157.3
82.5°	53.3	96.0	141.3	154.6	153.3
85°	37.3	96.0	138.6	149.3	149.3
87.5°	20.0	101.3	135.9	145.3	143.9
90°	0.0	108.0	125.3	123.9	118.6
92.5°	73.3	127.9	133.3	134.6	133.3
95°	137.3	149.3	135.9	134.6	131.9
97.5°	185.3	170.6	138.6	130.6	127.9
100°	226.6	193.3	138.6	127.9	123.9
102.5°	263.9	211.9	141.3	123.9	118.6
105°	289.2	229.2	141.3	121.3	114.6
107.5°	309.2	241.2	141.3	118.6	112.0
110°	321.2	246.6	141.3	116.0	105.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	325.2	246.6	139.9	110.6	102.6
115°	318.5	241.2	138.6	106.6	98.6
117.5°	307.9	234.6	138.6	104.0	94.6
120°	291.9	225.2	137.3	102.6	92.0
122.5°	273.2	213.2	134.6	101.3	90.6
125°	253.2	201.3	130.6	101.3	89.3
127.5°	233.2	187.9	125.3	102.6	90.6
130°	214.6	174.6	120.0	102.6	92.0
132.5°	195.9	161.3	114.6	101.3	92.0
135°	175.9	147.9	112.0	97.3	92.0
137.5°	157.3	135.9	109.3	94.6	88.0
140°	141.3	127.9	106.6	93.3	86.6
142.5°	129.3	121.3	105.3	92.0	85.3
145°	120.0	114.6	104.0	93.3	85.3
147.5°	113.3	110.6	102.6	93.3	85.3
150°	109.3	108.0	101.3	93.3	86.6
152.5°	106.6	105.3	100.0	94.6	88.0
155°	104.0	102.6	98.6	94.6	88.0
157.5°	102.6	101.3	98.6	94.6	89.3
160°	101.3	100.0	98.6	94.6	90.6
162.5°	100.0	100.0	97.3	96.0	90.6
165°	100.0	98.6	97.3	96.0	90.6
167.5°	98.6	98.6	97.3	96.0	92.0
170°	98.6	98.6	97.3	96.0	92.0
172.5°	98.6	98.6	97.3	96.0	92.0
175°	98.6	98.6	97.3	97.3	93.3
177.5°	98.6	98.6	97.3	97.3	93.3
180°	97.3	97.3	97.3	97.3	97.3



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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	9.59	10.63	10.45	11.52	12.65	10.24	11.28	11.10	12.17	13.30
	3H	11.69	12.64	12.55	13.54	14.69	13.02	13.97	13.88	14.87	16.02
	4H	12.47	13.38	13.35	14.28	15.44	14.47	15.38	15.35	16.28	17.44
	6H	13.05	13.89	13.94	14.80	15.98	16.09	16.94	16.99	17.85	19.02
	8H	13.23	14.04	14.14	14.97	16.15	16.96	17.77	17.86	18.70	19.87
	12H	13.35	14.12	14.26	15.05	16.25	17.91	18.68	18.82	19.61	20.81
4H	2H	10.42	11.33	11.31	12.23	13.39	10.91	11.81	11.79	12.72	13.88
	3H	12.76	13.54	13.66	14.48	15.65	13.91	14.69	14.81	15.62	16.80
	4H	13.72	14.44	14.63	15.37	16.57	15.54	16.26	16.45	17.19	18.39
	6H	14.48	15.11	15.40	16.07	17.26	17.35	17.98	18.27	18.94	20.14
	8H	14.76	15.35	15.68	16.30	17.52	18.33	18.92	19.25	19.87	21.09
	12H	14.95	15.50	15.90	16.46	17.69	19.39	19.93	20.34	20.90	22.12
8H	4H	14.45	15.04	15.37	15.99	17.21	15.94	16.54	16.87	17.49	18.71
	6H	15.48	15.98	16.43	16.97	18.19	17.99	18.49	18.94	19.48	20.69
	8H	15.93	16.39	16.89	17.37	18.60	19.13	19.58	20.09	20.56	21.79
	12H	16.31	16.71	17.27	17.69	18.96	20.40	20.80	21.36	21.78	23.05
12H	4H	14.65	15.20	15.60	16.16	17.39	15.98	16.53	16.93	17.49	18.72
	6H	15.85	16.30	16.81	17.28	18.51	18.11	18.57	19.07	19.54	20.77
	8H	16.43	16.84	17.40	17.81	19.09	19.34	19.74	20.30	20.72	21.99