

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P33910

Luminaire Tested: **S122DS-135-SR0048-1D-UDD-4-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P33910  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DS-135-SR0048-1D-UDD-4-W  
Description: NEORAY DIRECT- INDIRECT 2" FIXTURE WITH A DROP DIFFUSE  
LENS.LL1  
Light Source: [117] NICHIA 3500K LED  
Nichia 757D  
Ballast/Driver: [1] OSRAM SYLVANIA ELECTRONIC DRIVER  
OT50WPRG1400C

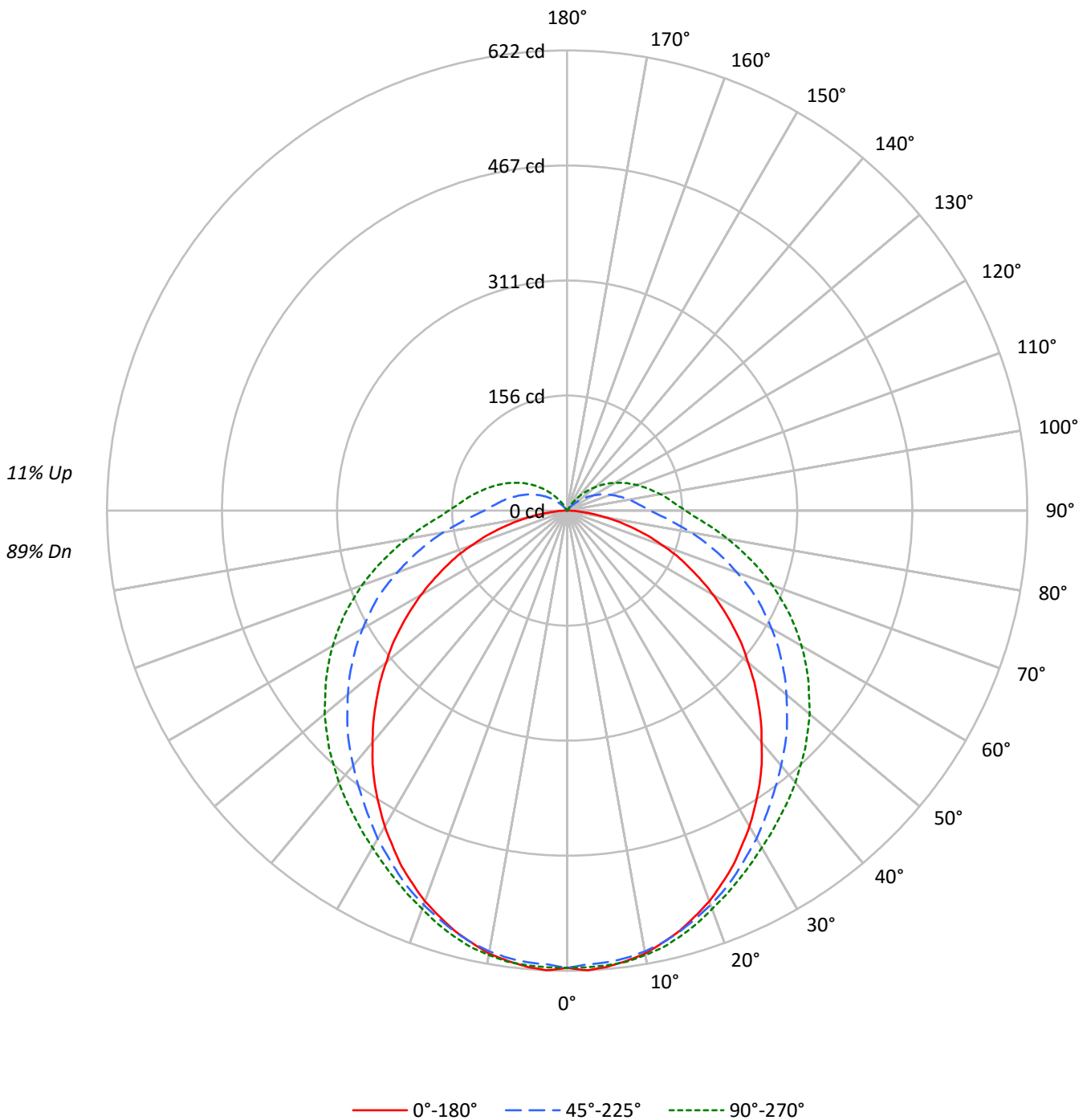
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2267.9 lumens  
Efficiency: N/A  
Efficacy: 81.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.27 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.17')  
CIE Type: Semi-Direct  
  
Input Watts (W): 27.9  
Input Voltage (V): 120.02  
Input Current (A<sub>in</sub>): 0.2339  
Voltage Rise (V): NR  
Power Factor: 0.9971  
Total Harmonic Distortion (THDi): 7.69%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 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	116	116	116	116	112	112	112	112	105	105	105	98	98	98	92	92	92	89
1	104	98	93	89	100	95	90	86	89	85	81	83	80	77	77	75	73	70
2	94	85	77	71	90	82	75	69	76	70	66	71	67	62	67	63	59	56
3	85	74	65	58	81	71	63	57	67	60	54	62	57	52	58	54	49	47
4	78	65	56	48	74	63	54	47	59	51	46	55	49	44	52	46	42	39
5	71	58	48	41	68	56	47	41	52	45	39	49	43	38	46	41	36	34
6	66	52	42	36	63	50	42	35	47	40	34	45	38	33	42	36	32	29
7	61	47	38	31	58	45	37	31	43	35	30	40	34	29	38	32	28	26
8	56	43	34	28	54	41	33	28	39	32	27	37	31	26	35	29	25	23
9	53	39	31	25	51	38	30	25	36	29	24	34	28	23	32	27	23	21
10	49	36	28	23	48	35	27	22	33	26	22	32	25	21	30	25	20	19

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

	0°	45°	90°
0°	9978	9978	9978
5°	9996	9334	9196
10°	9895	8779	8502
15°	9720	8223	7844
20°	9512	7683	7218
25°	9262	7174	6682
30°	8975	6697	6217
35°	8676	6242	5831
40°	8329	5862	5501
45°	8001	5522	5195
50°	7634	5177	4905
55°	7280	4856	4614
60°	6867	4526	4326
65°	6383	4206	4034
70°	5803	3809	3716
75°	5075	3428	3388
80°	3911	3053	3066
85°	2384	2695	2772



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	58.6	2.6
10°-20°	166.8	7.4
20°-30°	249.8	11.0
30°-40°	301.1	13.3
40°-50°	321.2	14.2
50°-60°	310.1	13.7
60°-70°	269.4	11.9
70°-80°	205.0	9.0
80°-90°	136.1	6.0
90°-100°	94.1	4.2
100°-110°	68.8	3.0
110°-120°	46.3	2.0
120°-130°	26.8	1.2
130°-140°	11.7	0.5
140°-150°	2.2	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	475.2	21.0
0°-40°	776.3	34.2
0°-60°	1407.6	62.1
0°-90°	2018.0	89.0
90°-120°	209.2	9.2
90°-150°	249.9	11.0
90°-180°	250.0	11.0
0°-180°	2267.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	618	618	618	618	618	
5°	619	617	613	619	617	59
15°	588	590	589	596	595	166
25°	530	536	541	550	550	244
35°	453	466	480	498	503	283
45°	365	388	420	446	455	282
55°	274	308	354	388	398	245
65°	182	228	284	320	332	181
75°	94	148	206	244	257	100
85°	19	76	137	174	186	23
90°	0	54	112	148	160	1
95°	0	44	97	132	142	0
105°	0	26	73	104	114	0
115°	0	12	52	79	88	0
125°	0	2	31	54	62	0
135°	0	0	12	30	36	0
145°	1	0	0	8	13	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P33910

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	618	618	618	618	618	618	618	618	618	618	618
2.5°	622	620	617	618	619	619	618	618	616	614	614
5°	619	617	614	616	617	617	617	616	615	613	614
7.5°	614	612	610	611	612	614	613	613	612	610	611
10°	608	605	603	605	606	608	608	608	607	605	606
12.5°	598	597	595	598	599	601	601	601	599	598	600
15°	588	586	584	587	589	591	591	591	590	589	591
17.5°	575	573	573	575	578	580	580	581	579	578	580
20°	562	560	559	563	565	567	567	568	567	567	569
22.5°	546	545	545	548	550	552	554	554	554	555	556
25°	530	529	530	533	535	538	540	540	540	541	544
27.5°	511	511	512	516	519	522	524	525	525	526	530
30°	493	492	493	498	501	505	507	508	509	512	515
32.5°	473	472	474	479	483	486	490	492	493	496	500
35°	453	452	454	459	464	468	471	473	477	480	485
37.5°	432	432	435	440	445	449	453	456	460	465	470
40°	409	410	413	420	425	431	435	438	444	450	456
42.5°	388	388	392	399	404	411	417	420	428	435	442
45°	365	365	371	378	384	392	398	403	411	420	426
47.5°	343	344	350	357	364	373	379	386	395	403	411
50°	319	321	328	336	344	354	361	369	378	387	395
52.5°	298	299	306	315	323	333	343	352	362	371	379
55°	274	277	284	293	303	313	324	334	345	354	364
57.5°	251	255	263	271	282	294	305	315	326	337	346
60°	228	232	241	250	262	274	286	298	308	319	328
62.5°	205	210	218	228	242	255	267	279	290	301	311
65°	182	188	196	208	221	234	247	260	271	284	292
67.5°	161	165	174	187	201	215	228	240	252	264	275
70°	137	144	152	166	180	194	208	221	233	244	255
72.5°	116	121	130	145	159	174	188	202	214	225	236
75°	94	100	110	124	140	155	169	182	195	206	217
77.5°	73	79	91	106	120	135	150	163	176	188	199
80°	52	60	71	86	102	116	131	144	158	170	180
82.5°	35	42	54	68	84	99	114	127	141	152	163
85°	19	27	40	54	69	84	99	112	125	137	147
87.5°	8	15	27	42	56	71	86	99	111	123	134
90°	0	7	18	32	47	61	75	89	101	112	122
92.5°	0	5	14	27	41	55	69	81	93	104	114
95°	0	3	12	23	37	50	63	75	87	97	107
97.5°	0	1	9	20	32	45	58	70	81	91	100
100°	0	0	6	16	28	41	53	64	75	85	94
102.5°	0	0	4	13	24	36	48	59	70	79	88
105°	0	0	2	10	21	32	43	54	64	73	82
107.5°	0	0	0	7	17	28	39	49	59	68	76
110°	0	0	0	5	14	24	34	44	53	62	71



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CATALOG NUMBER: S122DS-135-SR0048-1D-UDD-4-W

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	0	0	0	2	11	20	30	39	48	57	65
115°	0	0	0	1	8	16	26	35	43	52	59
117.5°	0	0	0	0	5	13	21	30	38	46	54
120°	0	0	0	0	2	9	17	25	33	41	48
122.5°	0	0	0	0	0	6	14	21	29	36	43
125°	0	0	0	0	0	3	10	17	24	31	37
127.5°	0	0	0	0	0	0	6	13	19	26	32
130°	0	0	0	0	0	0	3	9	15	21	27
132.5°	0	0	0	0	0	0	0	5	11	16	22
135°	0	0	0	0	0	0	0	1	7	12	16
137.5°	0	0	0	0	0	0	0	0	3	7	12
140°	0	0	0	0	0	0	0	0	0	3	7
142.5°	0	0	0	0	0	0	0	0	0	0	3
145°	1	1	0	0	0	0	0	0	0	0	0
147.5°	0	0	0	0	0	0	0	0	0	0	0
150°	0	0	0	0	0	0	0	0	0	0	0
152.5°	0	0	0	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0	0	0	0
157.5°	0	0	0	0	0	0	0	0	0	0	0
160°	0	0	0	0	0	0	0	0	0	0	0
162.5°	0	0	0	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0	0	0	0
167.5°	0	0	0	0	0	0	0	0	0	0	0
170°	0	0	0	0	0	0	0	0	0	0	0
172.5°	0	0	0	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0	0	0	0
177.5°	0	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0	0	0



TEST NUMBER: P33910

CATALOG NUMBER: S122DS-135-SR0048-1D-UDD-4-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	618	618	618	618	618	618	618	618
2.5°	617	618	619	619	619	619	619	618
5°	616	618	619	619	619	619	618	617
7.5°	613	615	616	616	616	617	616	615
10°	609	610	611	612	612	612	611	610
12.5°	602	604	605	605	605	605	605	604
15°	593	594	596	596	596	597	595	595
17.5°	583	585	586	585	586	586	585	585
20°	572	573	574	574	575	575	574	573
22.5°	559	561	562	562	563	564	563	562
25°	546	548	550	550	551	552	551	550
27.5°	533	535	536	537	539	539	539	538
30°	518	521	522	524	526	527	527	526
32.5°	504	507	510	512	514	515	515	515
35°	489	493	497	500	502	503	504	503
37.5°	476	480	484	488	490	491	491	492
40°	462	467	471	474	477	479	479	480
42.5°	448	453	458	462	465	467	467	467
45°	433	440	444	448	452	454	455	455
47.5°	418	425	430	435	438	440	441	441
50°	403	410	416	421	424	426	428	428
52.5°	387	395	400	405	409	412	413	412
55°	372	379	385	390	394	397	398	398
57.5°	354	362	369	374	378	381	382	382
60°	338	345	352	357	362	365	366	366
62.5°	320	328	335	341	345	348	349	349
65°	302	310	317	323	326	329	331	332
67.5°	283	291	299	304	308	311	313	313
70°	265	273	280	285	289	293	294	295
72.5°	246	254	261	267	271	274	275	276
75°	226	235	242	247	252	256	257	257
77.5°	207	216	223	229	233	236	237	238
80°	190	198	205	210	214	217	220	220
82.5°	172	181	188	193	197	201	202	203
85°	157	165	172	177	181	185	186	186
87.5°	143	151	157	162	167	169	171	171
90°	131	139	145	151	155	158	159	160
92.5°	123	131	137	142	145	148	150	150
95°	115	123	129	134	138	141	142	142
97.5°	109	116	122	126	130	133	134	135
100°	102	109	115	119	123	125	127	128
102.5°	96	103	108	113	116	118	120	120
105°	90	96	102	106	110	112	113	114
107.5°	84	90	96	100	103	106	107	107
110°	78	84	89	94	97	99	100	101





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CATALOG NUMBER: S122DS-135-SR0048-1D-UDD-4-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	72	78	83	87	90	93	94	94
115°	66	72	77	81	84	86	87	88
117.5°	60	66	71	75	78	80	81	81
120°	54	60	64	69	71	74	75	75
122.5°	49	54	58	62	65	67	68	69
125°	43	48	52	56	59	61	62	62
127.5°	37	42	46	50	52	54	55	56
130°	32	37	40	44	46	48	49	49
132.5°	26	31	34	38	40	42	43	43
135°	21	25	28	31	34	35	36	36
137.5°	16	20	23	25	28	29	30	30
140°	11	14	17	20	22	23	24	24
142.5°	6	9	12	14	16	17	18	18
145°	1	4	7	9	10	11	12	13
147.5°	0	0	0	0	0	0	0	0
150°	0	0	0	0	0	0	0	0
152.5°	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0
157.5°	0	0	0	0	0	0	0	0
160°	0	0	0	0	0	0	0	0
162.5°	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0
167.5°	0	0	0	0	0	0	0	0
170°	0	0	0	0	0	0	0	0
172.5°	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0
177.5°	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0

(END OF REPORT)