

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: P24875

Luminaire Tested: 23XR-1-L35-ETG4D-1DD-SI

Test Date: 09/16/14



Test Information

Test Method: LM-79-2019
Report Number: P24875
Test Lab: INNOVATION CENTER-P2
Test Date: 09/16/14
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: 23XR-1-L35-ETG4D-1DD-SI
Description: NEORAY; ASYMMETRIC LINEAR SLOT LED (1.2A)
Light Source: (98) 3500K LEDS
Ballast/Driver: (1) LG ELECTRONIC DRIVER
CLUNVCC200024VD010

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2193.5 lumens
Efficiency: N/A
Efficacy: 77.8 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.22 / 1.36
Luminous Opening: Rectangular (W 4' x L: 0.19' x H: 0')
CIE Type: Direct

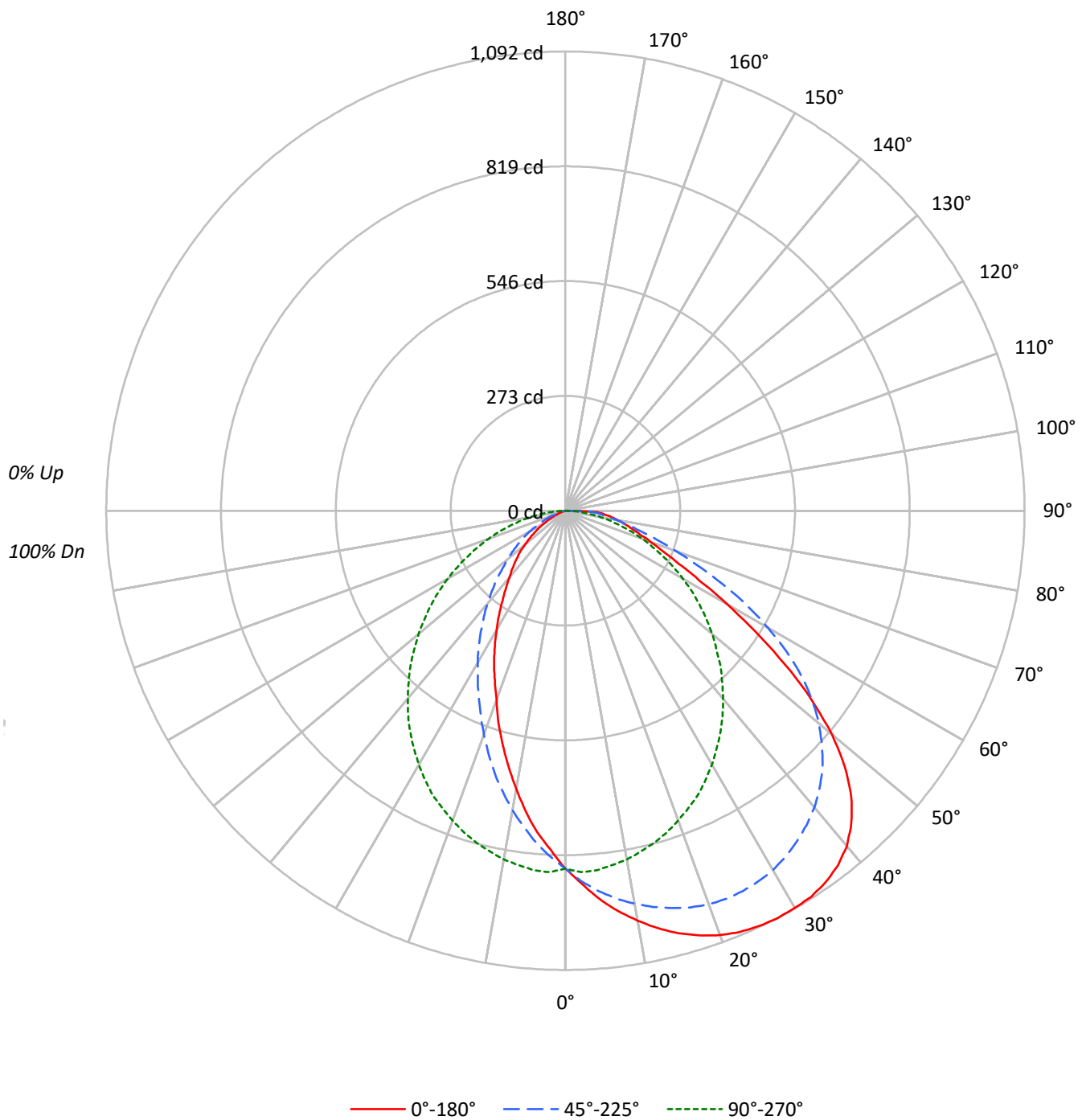
Input Watts (W): 28.2
Input Voltage (V): 120.12
Input Current (Ain): 0.23658
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 7.27
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: HR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	109	105	101	97	107	102	99	95	98	95	92	94	92	90	91	89	87	85		
2	100	92	85	80	97	90	84	79	87	82	77	83	79	75	80	77	74	72		
3	91	81	73	67	89	80	72	67	77	71	65	74	69	64	71	67	63	61		
4	84	72	64	57	82	71	63	57	68	62	56	66	60	55	64	59	55	53		
5	77	65	56	50	75	64	55	49	62	54	49	60	53	48	58	52	48	46		
6	71	58	50	43	70	58	49	43	56	48	43	54	48	43	52	47	42	40		
7	66	53	45	38	65	52	44	38	51	43	38	49	43	38	48	42	38	36		
8	62	49	40	34	60	48	40	34	46	39	34	45	39	34	44	38	34	32		
9	58	45	36	31	56	44	36	31	43	36	31	42	35	31	41	35	30	29		
10	54	41	33	28	53	41	33	28	40	33	28	39	32	28	38	32	28	26		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	12213	12213	12213	12213	12213
5°	13355	13081	12361	11425	11064
10°	14428	13830	12271	10536	9793
15°	15452	14531	12139	9628	8558
20°	16403	15212	11974	8644	7316
25°	17261	15804	11813	7728	6350
30°	18080	16357	11551	6911	5419
35°	18905	16820	11266	6132	4555
40°	19503	17255	10923	5396	3878
45°	19525	17557	10575	4648	3369
50°	18465	17572	10181	3974	2791
55°	15964	17165	9733	3403	2202
60°	12687	15931	9243	2727	1579
65°	10086	13957	8694	2038	951
70°	9022	11707	8141	1259	126
75°	9039	10092	7375	222	0
80°	10331	9918	6695	0	0
85°	14985	13009	5599	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 87.5°

Luminance: 25006 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	80.4	3.7
10°-20°	228.1	10.4
20°-30°	340.9	15.5
30°-40°	407.4	18.6
40°-50°	416.8	19.0
50°-60°	348.0	15.9
60°-70°	220.8	10.1
70°-80°	110.2	5.0
80°-90°	40.7	1.9
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°	649.4	29.6
0°-40°	1056.9	48.2
0°-60°	1821.7	83.0
0°-90°	2193.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2193.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	851	851	851	851	851	
5°	927	908	858	793	768	90
15°	1040	978	817	648	576	295
25°	1090	998	746	488	401	503
35°	1079	960	643	350	260	674
45°	962	865	521	229	166	734
55°	638	686	389	136	88	568
65°	297	411	256	60	28	305
75°	163	182	133	4	0	174
85°	91	79	34	0	0	92
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	851	851	851	851	851	851	851	851	851	851	851
2.5°	887	885	887	888	888	889	887	887	892	882	875
5°	927	924	925	924	922	921	917	916	919	908	898
7.5°	960	958	959	956	953	951	945	942	943	930	917
10°	990	986	986	983	979	977	970	965	965	949	933
12.5°	1017	1014	1013	1008	1004	999	992	985	982	965	947
15°	1040	1037	1035	1032	1026	1020	1011	1001	997	978	957
17.5°	1059	1056	1054	1049	1043	1037	1026	1015	1008	989	964
20°	1074	1070	1067	1061	1054	1047	1035	1023	1015	996	969
22.5°	1084	1079	1076	1070	1062	1054	1041	1028	1018	999	970
25°	1090	1086	1082	1075	1067	1059	1045	1030	1018	998	968
27.5°	1092	1088	1084	1077	1068	1060	1045	1030	1015	994	962
30°	1091	1088	1083	1077	1066	1056	1041	1023	1008	987	954
32.5°	1088	1084	1079	1071	1059	1049	1032	1013	996	975	942
35°	1079	1076	1070	1062	1048	1038	1021	1001	982	960	926
37.5°	1064	1060	1055	1047	1034	1023	1006	985	965	942	908
40°	1041	1038	1032	1025	1011	1003	986	966	945	921	887
42.5°	1007	1005	1001	994	983	975	959	940	920	895	862
45°	962	960	958	953	945	938	925	908	889	865	833
47.5°	902	902	901	902	894	890	881	868	852	828	800
50°	827	830	829	831	831	831	828	819	805	787	763
52.5°	738	741	743	751	754	759	763	761	753	740	717
55°	638	640	647	653	668	677	686	693	694	686	668
57.5°	536	539	552	555	574	587	602	616	625	624	615
60°	442	442	454	460	480	495	516	533	553	555	556
62.5°	360	361	371	377	394	409	430	450	473	486	492
65°	297	297	304	308	322	335	351	374	393	411	426
67.5°	249	250	254	258	266	275	287	305	322	340	360
70°	215	213	216	219	223	228	236	249	262	279	296
72.5°	185	185	187	189	190	192	199	205	215	227	238
75°	163	162	163	164	164	165	166	171	176	182	190
77.5°	143	143	143	143	142	142	143	143	145	147	151
80°	125	125	124	124	123	122	121	121	120	120	120
82.5°	108	108	107	107	105	105	103	101	100	97	95
85°	91	91	90	90	89	88	85	84	81	79	75
87.5°	76	76	75	74	73	72	69	67	65	62	57
90°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	851	851	851	851	851	851	851	851	851	851	851
2.5°	870	868	865	859	858	858	861	860	853	848	838
5°	891	884	878	871	865	862	861	858	846	838	824
7.5°	907	898	889	879	869	862	859	850	837	824	809
10°	921	908	897	884	871	861	854	842	825	809	791
12.5°	931	916	902	886	870	856	846	830	811	792	770
15°	939	921	904	885	866	849	836	817	794	773	747
17.5°	944	924	904	883	860	841	824	802	777	752	724
20°	946	923	901	876	851	829	809	784	757	729	698
22.5°	944	919	894	868	840	815	792	765	733	704	671
25°	940	913	886	857	827	799	774	746	710	678	644
27.5°	933	902	874	844	811	781	753	722	685	651	615
30°	923	890	859	827	792	760	730	697	658	623	584
32.5°	909	874	842	808	770	738	705	670	630	593	555
35°	893	856	822	787	747	711	678	643	601	563	523
37.5°	873	836	799	763	723	684	650	614	571	532	491
40°	851	813	773	737	696	659	620	583	541	502	461
42.5°	824	787	746	708	667	627	589	552	510	470	430
45°	795	758	716	676	636	596	558	521	479	438	399
47.5°	762	725	683	643	602	564	525	487	446	407	367
50°	725	690	649	608	568	530	492	456	415	375	336
52.5°	686	652	611	572	532	495	458	422	382	344	305
55°	643	611	574	535	495	460	424	389	352	313	275
57.5°	594	567	534	496	458	424	389	356	319	282	247
60°	542	520	491	455	420	389	355	322	288	252	219
62.5°	486	470	446	415	381	353	321	289	256	223	191
65°	427	418	400	376	344	316	287	256	225	194	164
67.5°	367	364	354	334	306	279	252	224	195	166	139
70°	307	314	308	291	268	244	220	194	166	138	113
72.5°	250	257	257	249	230	209	187	164	139	112	88
75°	199	207	211	207	194	174	156	133	111	87	64
77.5°	158	163	167	164	158	142	126	107	85	63	42
80°	122	124	127	126	122	112	98	81	61	40	23
82.5°	94	93	93	91	90	82	72	57	39	19	9
85°	71	68	66	62	59	53	47	34	17	5	0
87.5°	53	49	44	39	34	28	23	14	2	0	0
90°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	851	851	851	851	851	851	851	851	851	851	851
2.5°	835	831	826	822	820	823	827	818	816	813	811
5°	817	811	804	796	793	793	793	782	776	773	769
7.5°	799	788	778	768	761	758	756	743	737	732	726
10°	777	764	750	737	728	723	718	703	694	688	682
12.5°	754	737	720	705	695	686	677	661	651	643	637
15°	728	710	690	672	658	648	636	618	607	598	591
17.5°	703	681	658	638	621	607	594	577	562	551	544
20°	674	650	623	602	583	566	549	532	516	505	496
22.5°	646	617	590	567	545	526	507	488	473	462	454
25°	615	585	555	530	508	488	467	449	435	424	415
27.5°	584	551	521	493	471	451	430	414	403	389	378
30°	552	518	486	458	436	417	396	379	364	352	342
32.5°	520	485	452	424	402	384	361	345	331	318	308
35°	487	452	418	394	371	350	329	312	299	286	275
37.5°	455	419	389	364	340	318	298	281	268	256	245
40°	423	388	359	334	309	288	267	251	239	228	220
42.5°	392	358	330	304	280	258	238	224	213	203	196
45°	360	329	301	274	252	229	212	198	189	181	175
47.5°	330	299	272	245	223	202	187	176	168	161	156
50°	300	271	243	217	196	178	165	155	149	142	136
52.5°	272	243	215	191	170	156	145	137	128	121	115
55°	244	215	189	166	148	136	125	115	109	102	96
57.5°	216	188	164	142	128	116	105	96	89	83	80
60°	190	162	139	121	109	95	86	78	72	67	63
62.5°	163	136	116	101	88	77	68	62	56	52	48
65°	137	113	96	80	69	60	52	46	41	37	34
67.5°	113	91	75	61	52	44	38	32	27	24	21
70°	89	70	57	45	37	30	24	19	14	11	9
72.5°	66	51	40	30	23	16	11	7	3	1	0
75°	46	34	24	16	10	4	0	0	0	0	0
77.5°	28	19	11	5	0	0	0	0	0	0	0
80°	13	7	1	0	0	0	0	0	0	0	0
82.5°	2	0	0	0	0	0	0	0	0	0	0
85°	0	0	0	0	0	0	0	0	0	0	0
87.5°	0	0	0	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0	0

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CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	851	851	851	851
2.5°	809	807	804	807
5°	768	766	765	768
7.5°	724	724	719	721
10°	677	674	671	672
12.5°	630	626	625	624
15°	583	578	576	576
17.5°	534	530	527	529
20°	488	484	480	479
22.5°	446	443	439	438
25°	409	404	401	401
27.5°	371	366	362	363
30°	335	330	326	327
32.5°	301	296	292	293
35°	270	265	261	260
37.5°	241	236	232	232
40°	215	211	209	207
42.5°	192	189	186	186
45°	172	169	167	166
47.5°	153	150	147	147
50°	132	128	126	125
52.5°	112	109	107	106
55°	93	91	88	88
57.5°	75	74	72	71
60°	59	57	57	55
62.5°	44	43	42	41
65°	31	29	28	28
67.5°	18	16	15	15
70°	6	5	3	3
72.5°	0	0	0	0
75°	0	0	0	0
77.5°	0	0	0	0
80°	0	0	0	0
82.5°	0	0	0	0
85°	0	0	0	0
87.5°	0	0	0	0
90°	0	0	0	0

(END OF REPORT)