



Spectra Lux

2750 Sabourin, Saint-Laurent (Quebec) H4S 1M2 Canada
Tel.: (514) 332-0082 Fax: (514) 332-3590 www.spectralux.ca



Lab Code: 200899-0

Moving Mirror Goniophotometer Test Report

Standard(s): IES LM-79:2019, ANSI C82.2:2002, ANSI C82.77-10:2021

Customer ANDlight, 1951 Franklin St., Vancouver, British Columbia , Canada, V5L 0C7

General Information		Lamp Details: CY5447		Driver Details: CY2569	
DUT Lab ID	SRIS 3157-4	Seasoning	0 Hour	Type	LED Power Supply
Lamp Type	LED/SSL	Test Product	COL-175-4-P-H-30K	Manufacturer	Meanwell
Current Mode	AC	Manufacturer	Nichia	Catalog No.	PWM-90-24
Test Report	S2212054-R1	Lamp Catalog No.	N.K.	Maximum Power	90 W
Test Date	5 December 2022	Drive Current	N.K.	Input Voltage	120.00 V
Report Date	8 December 2022	Nominal Color	3000 K	Operating Frequency	60 Hz
Ambient	24.6 °C	Burning Position	Horizontal	Input Power	45.99 W

Luminaire Data

General Information		Optics		Aperture (feet)	
Manufacturer	ANDlight	Optics	None	X	-0.5833
Name	Column Series	Housing	(4) Facetted Horizontal Cylinders	Y	3.5000
Catalog No.	COL-175-4-P-H-30K	Lens	(4) Acrylic Diffusers	Z	-0.5833

Stabilization Time: 1 hour 15 minutes

Approved Signatory: Chrisnel Blot

Signature:



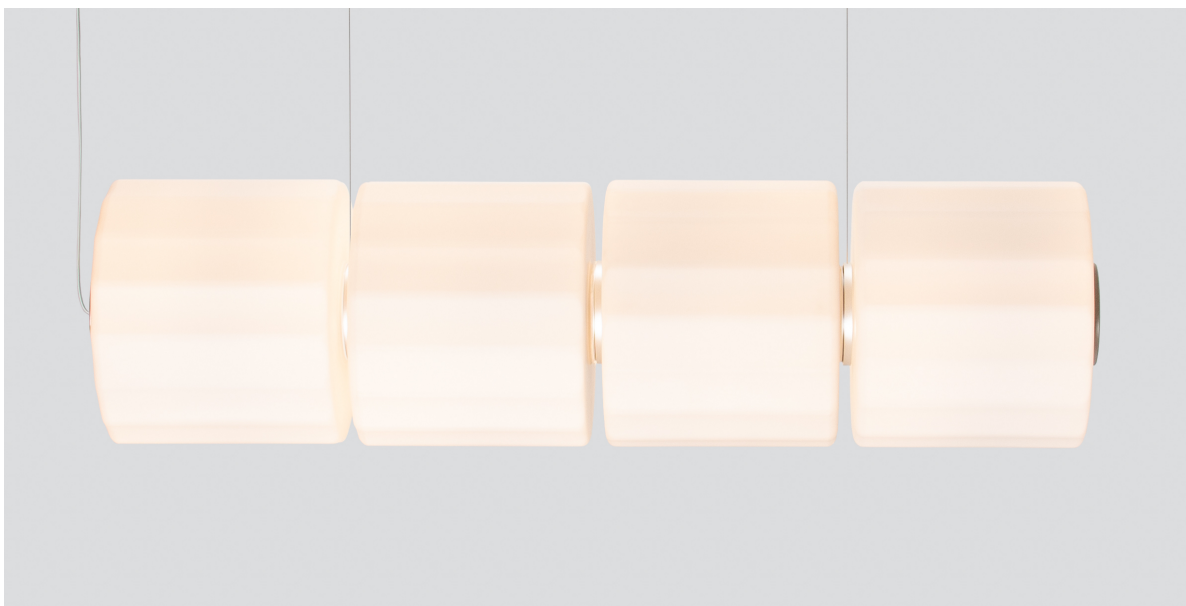
Luminaire Test Method

Precise installation and alignment of the luminaire to the rotation axis of the photometer is governed by a servomotor controlled via a microcontroller. A laser is used to validate the luminaire positioning. Before photometric measurements are taken, luminaire is operated long enough to reach stabilization and temperature equilibrium.

All movement commands issued to the photometer axes are mediated by the software to ensure the motion is within the limits of operation. The photometric detector used is a silicon detector corrected to closely match the spectral luminous efficiency photopic curve with a quality index less than 1.5%. Proper shielding is incorporated to the photometric test bench such that only the light from the unit under test is measured.

Luminous intensity measurements are performed at a distance great enough so that the inverse-square law applies. During each measurement the computer records the luminous intensity associated to the corresponding angles of radiation, as well as input electrical operational parameters and temperature measurements. Candela values are reported in IES format as per LM-63.

Equipment, reference standards are traceable to National Institute of Standards and Technology (NIST) and National Research Council of Canada (NRC).





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Electrical Equipment

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Power Supply	Inventfine	CHP-500	GZBXD010148	N.P.C.R.	N.P.C.R.
Input Power Meter	Yokogawa	WT210	27E116584	2022/09/22	2023/09/22
Output Power Meter	N/A	N/A	N/A	N.P.C.R.	N.P.C.R.

Photometric Equipment

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Photometer	N/A	N/A	N/A	N.P.C.R.	N.P.C.R.
Photodetector	INPHORA	IPR-PDET 19	110803	2022/09/07	2023/09/07

Environment Equipment

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Temperature Humidity Sensor	Omega	HH311	120504176	2022/09/07	2023/09/07

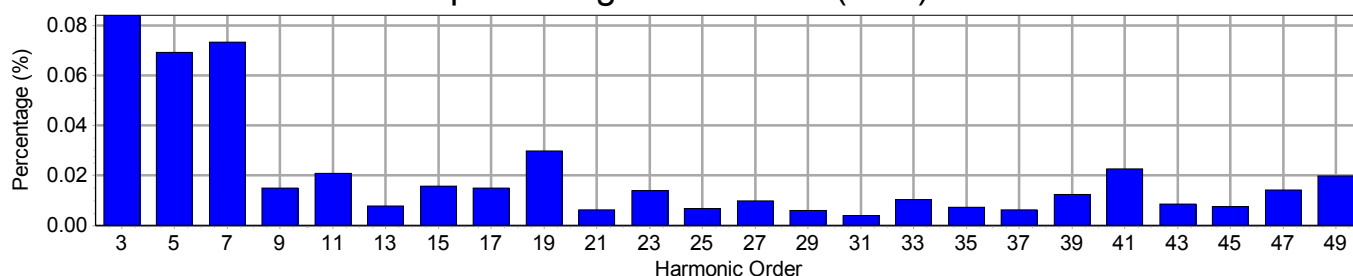


Electrical Measurements

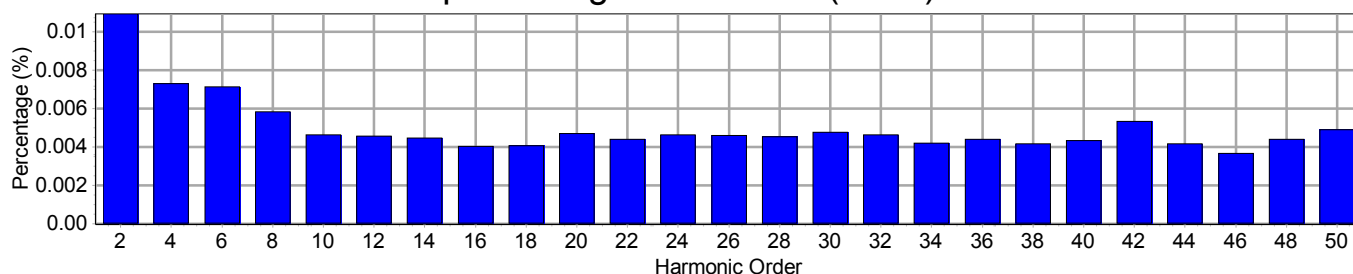
Input

Frequency	60 Hz	Active Power	45.99 W	THDV [ANSI]	0.14 %
Voltage	120.1 V(rms)	Apparent Power	46.50 VA	THDA [ANSI]	6.20 %
Current	0.3873 A(rms)	Power Factor	0.989	Max. Harmonic At	5th order

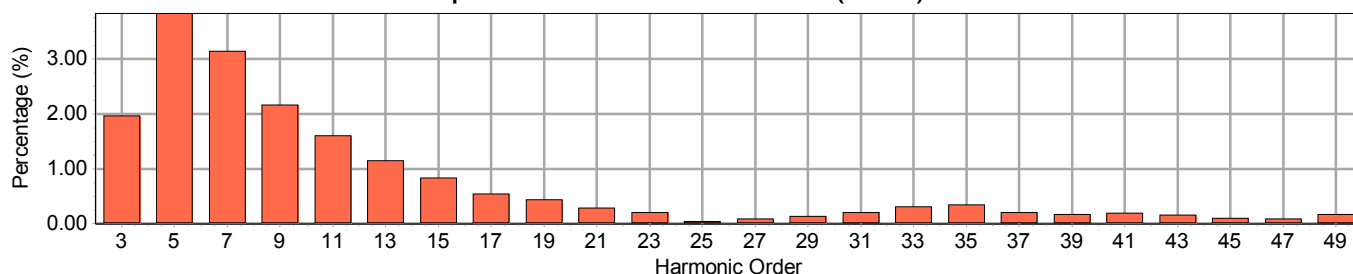
Input Voltage Harmonics (Odd)



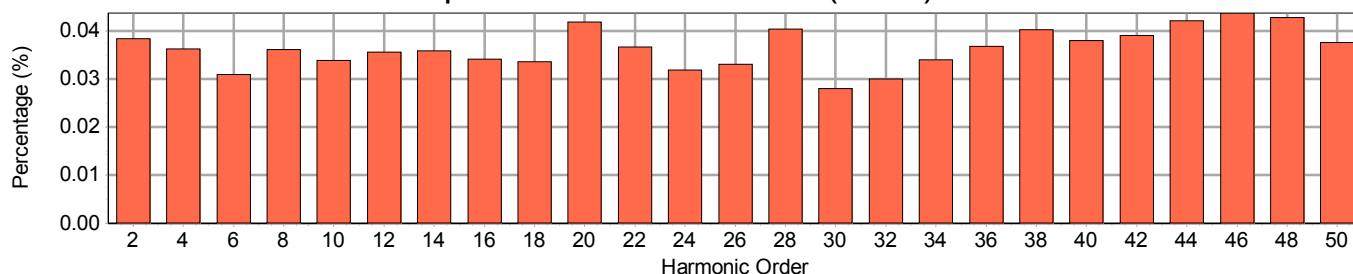
Input Voltage Harmonics (Even)



Input Current Harmonics (Odd)



Input Current Harmonics (Even)





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Harmonic Measurements

Odd Harmonics				Even Harmonics			
Harmonic Order	Frequency (HZ)	Voltage Harmonics (%)	Current Harmonics (%)	Harmonic Order	Frequency (HZ)	Voltage Harmonics (%)	Current Harmonics (%)
1	60	100.000	100.000	2	120	0.011	0.038
3	180	0.084	1.962	4	240	0.007	0.036
5	300	0.069	3.826	6	360	0.007	0.031
7	420	0.073	3.135	8	480	0.006	0.036
9	540	0.015	2.155	10	600	0.005	0.034
11	660	0.021	1.594	12	720	0.005	0.036
13	780	0.008	1.141	14	840	0.004	0.036
15	900	0.016	0.837	16	960	0.004	0.034
17	1020	0.015	0.543	18	1080	0.004	0.034
19	1140	0.030	0.433	20	1200	0.005	0.042
21	1260	0.006	0.282	22	1320	0.004	0.037
23	1380	0.014	0.209	24	1440	0.005	0.032
25	1500	0.007	0.043	26	1560	0.005	0.033
27	1620	0.010	0.093	28	1680	0.005	0.040
29	1740	0.006	0.130	30	1800	0.005	0.028
31	1860	0.004	0.202	32	1920	0.005	0.030
33	1980	0.011	0.313	34	2040	0.004	0.034
35	2100	0.007	0.347	36	2160	0.004	0.037
37	2220	0.006	0.203	38	2280	0.004	0.040
39	2340	0.013	0.171	40	2400	0.004	0.038
41	2460	0.023	0.192	42	2520	0.005	0.039
43	2580	0.009	0.155	44	2640	0.004	0.042
45	2700	0.007	0.097	46	2760	0.004	0.044
47	2820	0.014	0.081	48	2880	0.004	0.043
49	2940	0.020	0.167	50	3000	0.005	0.038



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Lab Code: 200899-0

Photometric Report: S2212054-R1

Prepared for: ANDlight · Test Date: 05 December 2022

Luminaire: Column Series · Lumcat: COL-175-4-P-H-30K

Coefficients of Utilization - Zonal Cavity Method

RCR	RC				0.9				0.8				0.7				0.5			0.1			0
	RW	0.7	0.5	0.3	0.1	0.7	0.5	0.3	0.1	0.7	0.5	0.3	0.1	0.5	0.3	0.1	0.5	0.3	0.1	0.5	0.3	0.1	0
0		116	116	116	116	107	107	107	107	98	98	98	98	83	83	83	55	55	55				49
1		103	96	90	85	94	88	83	78	86	81	77	72	67	64	61	43	41	40				34
2		92	82	73	66	84	75	68	62	77	69	62	57	57	52	48	36	34	31				26
3		84	71	61	54	76	65	57	50	69	60	52	46	49	44	39	31	28	25				21
4		76	62	52	44	69	57	48	41	63	52	44	38	43	37	32	27	24	21				17
5		69	55	45	37	63	50	41	35	58	46	38	32	38	32	27	24	21	18				14
6		64	49	39	32	58	45	36	30	53	41	33	28	34	28	23	22	18	15				12
7		59	44	34	28	54	40	32	26	49	37	29	24	31	25	20	20	16	13				10
8		54	39	30	24	50	36	28	22	45	34	26	21	28	22	18	18	14	12				9
9		50	36	27	21	46	33	25	20	42	31	23	18	26	20	16	17	13	10				8
10		47	33	24	19	43	30	23	18	39	28	21	16	24	18	14	15	12	9				7

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0 - 10	23	0.90	0.90
10 - 20	67	2.64	2.64
20 - 30	108	4.24	4.24
30 - 40	142	5.57	5.57
40 - 50	166	6.54	6.54
50 - 60	181	7.12	7.12
60 - 70	186	7.33	7.33
70 - 80	186	7.30	7.30
80 - 90	182	7.18	7.18
90 - 120	573	22.52	22.52
90 - 130	763	30.02	30.02
90 - 150	1090	42.87	42.87
90 - 180	1301	51.17	51.17
0 - 180	2543	100.00	100.00

Average Luminance (Cd/m²)

Angle	0 Degree	45 Degree	90 Degree
45.0	432	520	584
55.0	439	609	714
65.0	449	791	962
75.0	467	1239	1570
85.0	617	3603	4682

Luminaire Luminous Flux: 2543

Measured Input Power: 45.99 W

Total Luminaire Efficiency: N/A

Luminaire Luminous Efficacy: 55.3 lm/W

Luminaire Spacing Criterion (0 Degree): 1.3404

Luminaire Spacing Criterion (90 Degree): 1.5561

Category: Up and Down

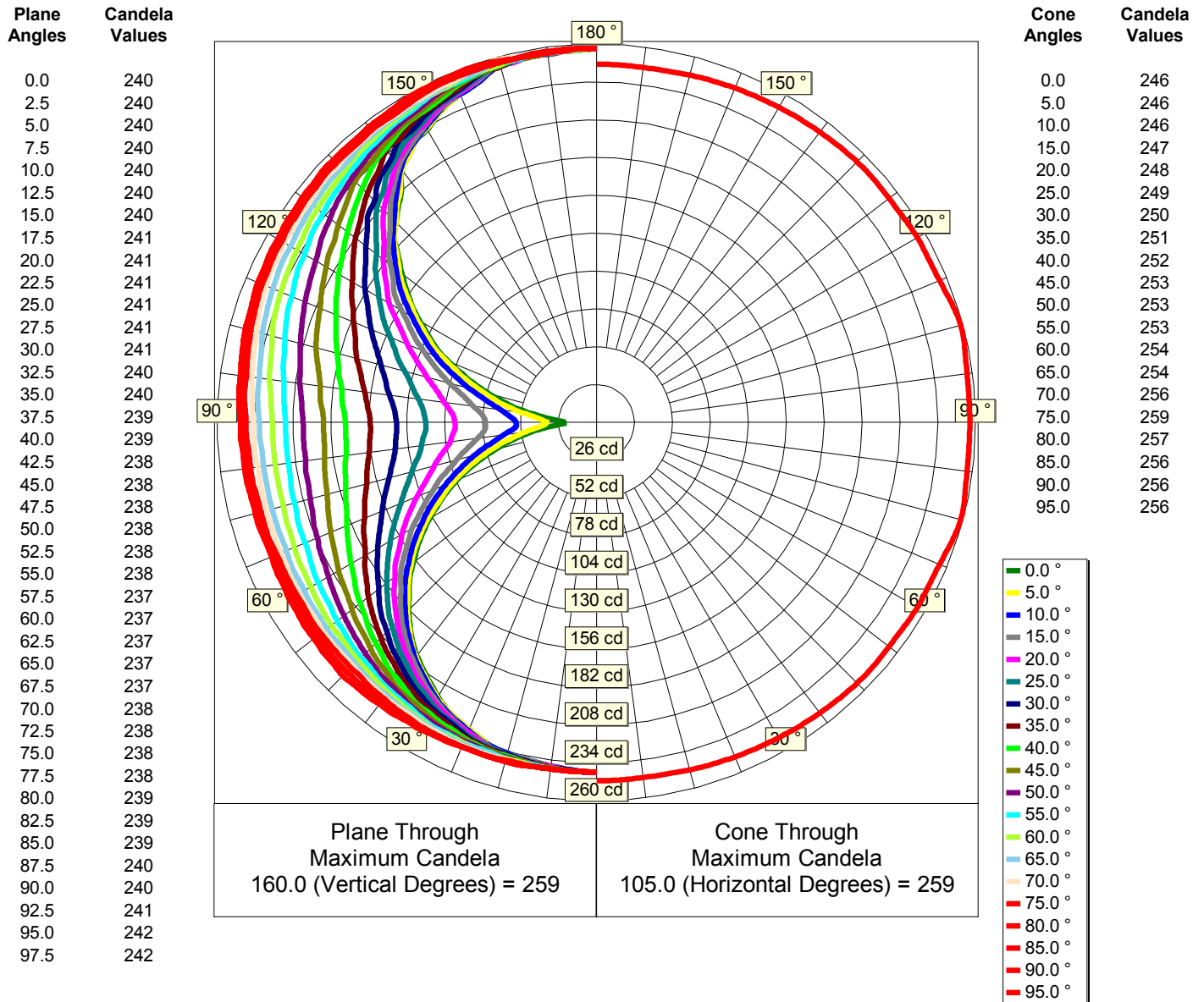


Photometric Report: S2212054-R1

Prepared for: ANDlight · Test Date: 05 December 2022

Luminaire: Column Series · Lumcat: COL-175-4-P-H-30K

Luminous Intensity - Polar Curve for each Plane(1)



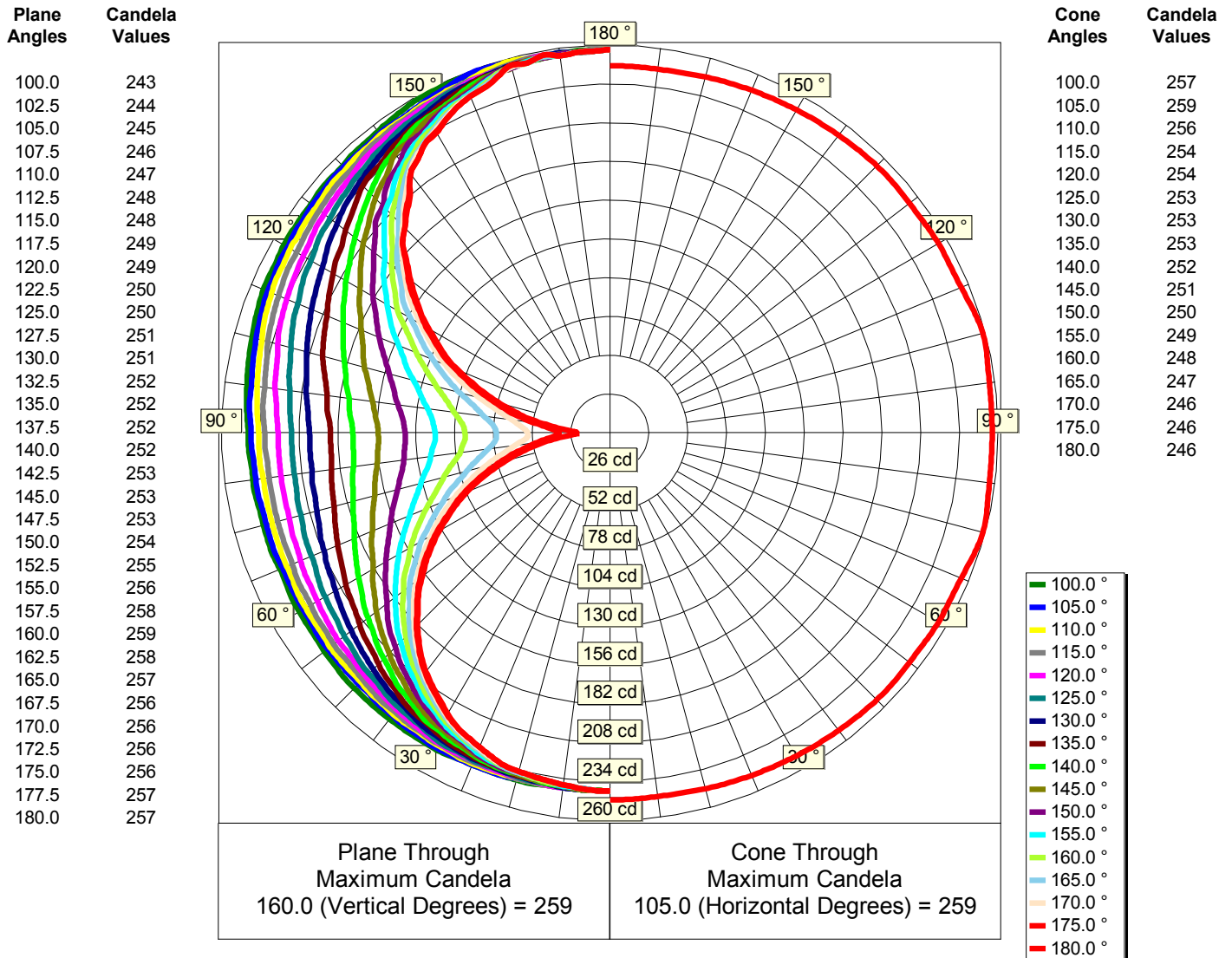


Photometric Report: S2212054-R1

Prepared for: ANDlight · Test Date: 05 December 2022

Luminaire: Column Series · Lumcat: COL-175-4-P-H-30K

Luminous Intensity - Polar Curve for each Plane(2)





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IES File Headers

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IESNA:LM-63
[ISSUEDATE]      05 December 2022
[TESTLAB]        Spectra Lux
[TEST]           S2212054-R1
[MANUFAC]        ANDlight
[LUMCAT]          COL-175-4-P-H-30K
[LUMINAIRE]       Column Series
[LAMP]           Clusters of Nichia LEDs c/w Meanwell Driver PWM-90-24 @ 120.00V
[_BURNING]        Horizontal (2,543 Luminaire Lumens)
[_OPTICS]         None
[_LENS]           (4) Acrylic Diffusers
[_HOUSING]        (4) Facetted Horizontal Cylinders
[_NOMINAL COLOR] 3000 K
[_DRIVE CURRENT] N.K.
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Candela Table

Lateral Angles

	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0
V e r t i c a l	0.0	240	240	240	240	240	240	240	240	240
	2.5	240	240	240	240	240	240	240	240	240
	5.0	239	239	239	239	239	239	240	240	240
	7.5	238	238	238	238	239	239	239	239	239
	10.0	237	237	237	237	238	238	238	239	239
	12.5	236	236	236	236	237	237	238	238	238
	15.0	235	235	235	236	236	236	237	237	238
	17.5	234	234	234	235	235	236	236	237	237
	20.0	231	231	232	232	233	234	235	236	237
	22.5	228	228	229	230	230	232	233	234	235
	25.0	225	225	226	227	228	229	230	232	233
	27.5	222	222	223	224	225	227	228	230	232
	30.0	217	218	219	220	222	224	226	228	230
	32.5	212	213	214	216	218	220	223	226	229
	35.0	207	208	209	211	214	217	220	223	226
	37.5	202	203	204	206	209	212	216	220	223
	40.0	196	197	198	201	204	208	212	216	221
	42.5	189	190	192	195	199	203	208	213	217
	45.0	182	183	185	189	193	198	203	209	214
A n g l e s	47.5	174	175	178	182	187	193	199	205	211
	50.0	167	168	171	175	181	187	194	201	207
	52.5	158	160	163	169	174	181	188	197	204
	55.0	150	152	155	161	168	175	183	192	201
	57.5	141	143	147	153	160	169	178	188	197
	60.0	132	134	138	146	154	163	173	183	194
	62.5	122	124	130	137	147	157	168	179	191
	65.0	113	115	121	129	140	151	163	176	188
	67.5	103	106	112	121	133	145	159	172	185
	70.0	93	96	103	114	126	140	155	169	182
	72.5	82	86	95	106	120	135	151	166	180
	75.0	72	76	86	99	115	131	147	163	178
	77.5	62	67	78	93	110	127	144	161	176
	80.0	52	57	70	87	105	123	141	159	175
	82.5	42	49	64	82	101	121	139	157	173
	85.0	32	41	58	78	99	119	138	156	172
	87.5	24	36	55	76	97	117	137	155	172
	90.0	22	34	55	76	97	117	137	155	172



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Lateral Angles

	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	
V e r t i c a l	92.5	25	37	57	77	98	118	138	156	173	188
	95.0	33	42	61	80	101	120	140	158	175	190
	97.5	43	51	66	85	105	123	143	160	176	191
	100.0	55	61	73	90	109	127	146	163	179	193
	102.5	65	71	81	96	114	131	149	166	181	196
	105.0	76	80	90	104	120	136	153	170	184	199
	107.5	87	91	99	112	126	142	157	173	187	201
	110.0	98	101	109	120	133	147	162	176	190	203
	112.5	110	112	119	128	140	153	167	180	193	205
	115.0	121	123	128	137	147	160	172	184	197	208
	117.5	130	132	137	145	155	166	177	189	200	211
	120.0	140	142	146	154	164	172	183	193	204	214
	122.5	150	151	156	164	170	178	188	198	207	217
	125.0	159	161	165	170	177	185	193	203	211	219
	127.5	168	170	173	178	184	190	199	208	215	223
	130.0	177	178	181	186	190	197	205	212	219	226
	132.5	188	188	189	192	198	205	212	217	223	230
	135.0	194	194	196	200	206	212	215	222	227	234
A n g l e s	137.5	201	202	204	208	212	216	222	226	231	236
	140.0	208	209	212	215	218	223	226	230	235	237
	142.5	219	219	220	222	225	227	230	236	237	240
	145.0	224	224	226	227	229	232	236	237	240	242
	147.5	230	230	230	231	234	235	237	240	243	244
	150.0	232	233	234	235	236	238	240	243	244	245
	152.5	237	237	238	239	240	242	243	244	245	247
	155.0	241	241	242	242	243	244	245	246	247	249
	157.5	244	244	244	245	245	246	247	248	250	251
	160.0	246	246	246	247	248	249	250	251	252	253
	162.5	250	250	250	251	252	252	253	253	253	253
	165.0	255	255	254	254	254	254	253	253	254	255
	167.5	254	254	254	254	254	255	255	256	255	255
	170.0	257	257	257	256	256	256	255	255	255	255
	172.5	255	255	255	255	255	255	256	256	256	256
	175.0	256	256	256	256	256	256	256	256	256	256
	177.5	256	256	256	256	256	256	256	256	256	256
	180.0	257	257	257	257	257	257	257	257	257	257



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Lateral Angles

	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0
V e r t i c a l	0.0	240	240	240	240	240	240	240	240	240
	2.5	240	240	240	240	240	240	240	240	240
	5.0	240	240	240	240	240	240	240	240	240
	7.5	240	240	240	240	240	240	240	240	240
	10.0	239	239	240	240	240	240	240	240	240
	12.5	239	239	239	240	240	241	241	241	241
	15.0	238	239	239	240	240	241	241	241	241
	17.5	238	238	239	239	240	241	241	241	241
	20.0	237	238	239	239	240	241	241	241	241
	22.5	237	238	238	239	240	241	241	241	241
	25.0	236	237	238	239	240	241	241	242	241
	27.5	235	237	238	238	239	241	242	241	242
	30.0	234	236	237	238	239	241	242	241	243
	32.5	233	234	236	237	238	240	242	241	243
	35.0	231	233	235	237	238	240	242	241	244
	37.5	229	232	234	236	238	239	242	241	244
	40.0	228	231	233	236	237	239	242	242	245
	42.5	226	229	232	235	237	238	242	242	245
	45.0	224	228	231	234	236	238	242	242	246
	47.5	222	227	230	233	236	238	242	242	245
A n g l e s	50.0	220	225	229	233	236	238	241	242	245
	52.5	218	224	229	233	236	238	241	242	244
	55.0	216	222	228	232	235	238	240	242	244
	57.5	214	221	227	232	235	237	240	242	243
	60.0	212	220	226	231	235	237	240	241	243
	62.5	210	219	225	231	235	237	240	241	242
	65.0	209	217	225	231	234	237	239	241	242
	67.5	207	216	224	230	234	237	239	240	241
	70.0	206	216	223	230	234	238	240	241	241
	72.5	204	215	223	230	234	238	240	241	242
	75.0	203	214	222	230	234	238	240	241	242
	77.5	202	214	222	230	234	238	240	242	242
	80.0	202	213	222	230	234	239	241	242	243
	82.5	201	213	222	230	234	239	241	243	243
	85.0	201	213	222	230	235	239	241	243	243
	87.5	201	213	222	231	235	240	242	244	244
	90.0	201	213	222	231	235	240	242	244	244
	92.5	202	214	223	232	236	241	243	245	245
	95.0	203	215	224	233	237	242	244	246	246
	97.5	205	216	226	233	238	242	245	246	246
	100.0	206	218	227	234	239	243	246	247	247
	102.5	208	219	228	235	240	244	247	248	248
	105.0	210	221	230	237	241	245	248	249	249
	107.5	212	223	232	238	243	246	249	249	249
	110.0	214	225	233	239	244	247	250	250	250
	112.5	216	226	234	240	245	248	251	251	251
	115.0	218	228	235	241	246	248	251	251	251
	117.5	220	230	236	242	246	249	251	252	252
	120.0	222	231	237	242	247	249	252	252	252
	122.5	225	233	238	243	247	250	252	253	253
	125.0	228	235	240	244	248	250	252	253	253
	127.5	230	236	241	245	248	251	252	254	253
	130.0	233	238	242	246	249	251	253	254	253
	132.5	235	239	243	247	250	252	253	255	254



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Lateral Angles

	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	
V e r t i c a l	135.0	237	241	244	247	250	252	253	255	254	255
	137.5	239	242	246	248	251	252	254	255	254	255
	140.0	241	244	247	250	251	252	254	255	254	255
	142.5	243	245	248	250	252	253	255	256	255	256
	145.0	244	247	249	251	252	253	256	256	255	256
	147.5	246	248	250	251	252	253	257	256	255	256
	150.0	247	249	251	252	253	254	258	256	255	256
	152.5	249	251	252	252	253	255	258	256	256	256
	155.0	251	252	252	253	254	256	258	256	256	256
	157.5	252	252	253	254	254	258	258	256	256	256
	160.0	253	253	254	254	256	259	257	256	256	256
	162.5	254	254	254	255	257	258	256	256	256	256
	165.0	255	255	255	256	258	257	256	256	256	256
	167.5	255	255	256	257	257	256	256	256	256	256
	170.0	256	256	257	257	256	256	256	256	257	256
	172.5	257	257	256	256	256	256	256	256	257	256
	175.0	256	256	256	256	256	256	257	257	257	257
	177.5	256	256	256	257	257	257	257	257	257	257
	180.0	257	257	257	257	257	257	257	257	257	257
A n g l e s											



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Lab Code: 200899-0

Lateral Angles

	100.0	105.0	110.0	115.0	120.0	125.0	130.0	135.0	140.0	145.0
V e r t i c a l	0.0	240	240	240	240	240	240	240	240	240
	2.5	240	240	240	240	240	240	240	240	240
	5.0	240	240	240	240	240	240	240	240	240
	7.5	240	240	240	240	240	240	239	239	239
	10.0	240	240	240	240	239	239	239	239	238
	12.5	241	240	240	240	239	239	238	238	238
	15.0	241	240	240	240	239	239	238	237	237
	17.5	241	241	240	239	239	238	237	237	236
	20.0	241	241	240	239	239	238	237	236	235
	22.5	241	241	240	239	238	238	237	236	235
	25.0	241	241	240	239	238	237	236	235	233
	27.5	242	241	239	238	238	237	235	234	232
	30.0	242	241	239	238	237	236	234	232	230
	32.5	242	240	238	237	236	234	233	230	229
	35.0	242	240	238	237	235	233	231	229	226
	37.5	242	239	238	236	234	232	229	227	223
	40.0	242	239	237	236	233	231	228	224	221
	42.5	242	238	237	235	232	229	226	222	217
	45.0	242	238	236	234	231	228	224	219	214
A n g l e s	47.5	242	238	236	233	230	227	222	216	211
	50.0	241	238	236	233	229	225	220	214	207
	52.5	241	238	236	233	229	224	218	211	204
	55.0	240	238	235	232	228	222	216	208	201
	57.5	240	237	235	232	227	221	214	206	197
	60.0	240	237	235	231	226	220	212	204	194
	62.5	240	237	235	231	225	219	210	201	191
	65.0	239	237	234	231	225	217	209	199	188
	67.5	239	237	234	230	224	216	207	197	185
	70.0	240	238	234	230	223	216	206	195	182
	72.5	240	238	234	230	223	215	204	193	180
	75.0	240	238	234	230	222	214	203	191	178
	77.5	240	238	234	230	222	214	202	190	176
	80.0	241	239	234	230	222	213	202	189	175
	82.5	241	239	234	230	222	213	201	188	173
	85.0	241	239	235	230	222	213	201	187	172
	87.5	242	240	235	231	222	213	201	187	172
	90.0	242	240	235	231	222	213	201	187	172
	92.5	243	241	236	232	223	214	202	188	173
	95.0	244	242	237	233	224	215	203	190	175
	97.5	245	242	238	233	226	216	205	191	176
	100.0	246	243	239	234	227	218	206	193	179
	102.5	247	244	240	235	228	219	208	196	181
	105.0	248	245	241	237	230	221	210	199	184
	107.5	249	246	243	238	232	223	212	201	187
	110.0	250	247	244	239	233	225	214	203	190
	112.5	251	248	245	240	234	226	216	205	193
	115.0	251	248	246	241	235	228	218	208	197
	117.5	251	249	246	242	236	230	220	211	200
	120.0	252	249	247	242	237	231	222	214	204
	122.5	252	250	247	243	238	233	225	217	207
	125.0	252	250	248	244	240	235	228	219	211
	127.5	252	251	248	245	241	236	230	223	215
	130.0	253	251	249	246	242	238	233	226	219
	132.5	253	252	250	247	243	239	235	230	223



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Lateral Angles

	100.0	105.0	110.0	115.0	120.0	125.0	130.0	135.0	140.0	145.0	
V e r t i c a l	135.0	253	252	250	247	244	241	237	234	227	222
	137.5	254	252	251	248	246	242	239	236	231	226
	140.0	254	252	251	250	247	244	241	237	235	230
	142.5	255	253	252	250	248	245	243	240	237	236
	145.0	256	253	252	251	249	247	244	242	240	237
	147.5	257	253	252	251	250	248	246	244	243	240
	150.0	258	254	253	252	251	249	247	245	244	243
	152.5	258	255	253	252	252	251	249	247	245	244
	155.0	258	256	254	253	252	252	251	249	247	246
	157.5	258	258	254	254	253	252	252	251	250	248
	160.0	257	259	256	254	254	253	253	253	252	251
	162.5	256	258	257	255	254	254	254	253	253	253
	165.0	256	257	258	256	255	255	255	255	254	253
	167.5	256	256	257	257	256	255	255	255	255	256
	170.0	256	256	256	257	257	256	256	255	255	255
	172.5	256	256	256	256	256	257	257	256	256	256
	175.0	257	256	256	256	256	256	256	256	256	256
	177.5	257	257	257	257	256	256	256	256	256	256
	180.0	257	257	257	257	257	257	257	257	257	257
A n g l e s											



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Lateral Angles

	150.0	155.0	160.0	165.0	170.0	175.0	180.0
V e r t i c a l	0.0	240	240	240	240	240	240
	2.5	240	240	240	240	240	240
	5.0	239	239	239	239	239	239
	7.5	239	239	238	238	238	238
	10.0	238	238	238	237	237	237
	12.5	237	237	237	236	236	236
	15.0	236	236	236	235	235	235
	17.5	236	235	235	234	234	234
	20.0	235	234	233	232	231	231
	22.5	233	232	230	229	228	228
	25.0	230	229	228	227	226	225
	27.5	228	227	225	224	223	222
	30.0	226	224	222	220	219	218
	32.5	223	220	218	216	214	213
	35.0	220	217	214	211	209	208
	37.5	216	212	209	206	204	203
	40.0	212	208	204	201	198	197
	42.5	208	203	199	195	192	190
	45.0	203	198	193	189	185	183
A n g l e s	47.5	199	193	187	182	178	175
	50.0	194	187	181	175	171	168
	52.5	188	181	174	169	163	160
	55.0	183	175	168	161	155	152
	57.5	178	169	160	153	147	143
	60.0	173	163	154	146	138	134
	62.5	168	157	147	137	130	124
	65.0	163	151	140	129	121	115
	67.5	159	145	133	121	112	106
	70.0	155	140	126	114	103	96
	72.5	151	135	120	106	95	86
	75.0	147	131	115	99	86	76
	77.5	144	127	110	93	78	67
	80.0	141	123	105	87	70	57
	82.5	139	121	101	82	64	49
	85.0	138	119	99	78	58	41
	87.5	137	117	97	76	55	36
	90.0	137	117	97	76	55	34
	92.5	138	118	98	77	57	37
	95.0	140	120	101	80	61	42
	97.5	143	123	105	85	66	51
	100.0	146	127	109	90	73	61
	102.5	149	131	114	96	81	71
	105.0	153	136	120	104	90	80
	107.5	157	142	126	112	99	91
	110.0	162	147	133	120	109	101
	112.5	167	153	140	128	119	112
	115.0	172	160	147	137	128	123
	117.5	177	166	155	145	137	132
	120.0	183	172	164	154	146	142
	122.5	188	178	170	164	156	151
	125.0	193	185	177	170	165	161
	127.5	199	190	184	178	173	170
	130.0	205	197	190	186	181	178
	132.5	212	205	198	192	189	188



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Lateral Angles

	150.0	155.0	160.0	165.0	170.0	175.0	180.0
V e r t i c a l	135.0	215	212	206	200	196	194
	137.5	222	216	212	208	204	202
	140.0	226	223	218	215	212	209
	142.5	230	227	225	222	220	219
	145.0	236	232	229	227	226	224
	147.5	237	235	234	231	230	230
	150.0	240	238	236	235	234	233
	152.5	243	242	240	239	238	237
	155.0	245	244	243	242	242	241
	157.5	247	246	245	245	244	244
	160.0	250	249	248	247	246	246
	162.5	253	252	252	251	250	250
	165.0	253	254	254	254	254	255
	167.5	255	255	254	254	254	254
	170.0	255	256	256	256	257	257
	172.5	256	255	255	255	255	255
	175.0	256	256	256	256	256	256
	177.5	256	256	256	256	256	256
	180.0	257	257	257	257	257	257
A n g l e s							