



Les Industries Spectralux Inc. Spectralux Industries Inc.

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

ISO/IEC 17025
NVLAP
NVLAP LAB CODE: 200899-0

Moving Mirror Goniophotometer Test Report

Standard(s): IESNA LM-15-03, IES LM-79-08, ANSI C82.77-2002

Customer Andlight, 505B Railway Street, Vancouver, BC, Canada, V6A 1A7

General Information		SSL Details		Electrical Details	
Test Report	S1710163-R1	Description	Cluster of Seoul LEDs	Alimentation	Direct DC
Test Date	16 October 2017	Serial Number	SRIS-2824	Power Supply	Amrel SSPS 150-7
Report Date	17 October 2017	Photometric Method	Absolute	Operating Mode	Constant Voltage
Ambient	24.2°C	Lamp Lumens	-1	Input Voltage	12 VDC
Humidity	42.7 %	Test Position	Vertical Base Up	Input Current	0.15574 ADC
Lamp Type	SSL	Nominal Color	3000K	Active Power	1.87W

Luminaire Data

General Information		Optics		Aperture (feet)	
Manufacturer	Andlight	Reflector	None	X	0.4583
Name	SLAB W20 WALL	Housing	Fern Green Felt Body	Y	0.5417
Catalog No.	SLA-W20-W-WW-FRN-012	Lens	Polycarbonate	Z	0.1667

Lamp Stabilization Time: 1 hour 55 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
Test Power Supply	American Reliance	SPS150-7	B10155	N.P.C.R.	N.P.C.R.
Shunt Resistor	Fluke	Y5020	5675013	2017/05/10	2018/05/10
Current Multimeter	HP Agilent	HP34401A	US36106747	2017/05/16	2018/05/16
Voltage Multimeter	HP Agilent	HP34401A	US36112752	2017/05/10	2018/05/10

Photometric Equipment

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Photodetector	Inphora	IPR-PDET19	110803	2016/10/05	2017/10/05

Environment Equipment

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Temperature Humidity Sensor	Omega	HH311	120504178	2016/04/20	2018/04/20



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Electrical Measurements

Input Voltage	12.00 V (DC)	Shunt Voltage	1.561E-003 V (DC)
Input Current	0.15574 A (DC)	Shunt Resistor	.01001673 Ω
Input Power	1.87 W	Load Voltage	11.9984 V (DC)



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Photometric Report: S1710163-R1

Prepared for: Andlight · Test Date: 16 October 2017

Luminaire: SLAB W20 WALL · Lumcat: SLA-W20-W-WW-FRN-012

Coefficients of Utilization - Zonal Cavity Method

RCR	RC RW				0.9				0.8				0.7				0.5			0.1			0
	0.7	0.5	0.3	0.1	0.7	0.5	0.3	0.1	0.7	0.5	0.3	0.1	0.7	0.5	0.3	0.1	0.5	0.3	0.1	0.5	0.3	0.1	0
0	119	119	119	119	113	113	113	113	108	108	108	108	98	98	98		80	80	80				76
1	107	101	95	90	101	96	91	86	96	91	87	83	82	79	76		67	65	63				59
2	97	87	79	72	92	83	76	70	87	79	72	67	71	66	62		58	55	52				48
3	88	76	67	60	83	73	64	58	79	69	62	55	63	57	51		51	47	44				40
4	81	67	58	50	76	64	55	49	72	61	53	47	56	49	44		46	41	38				35
5	74	60	50	43	70	57	48	42	66	55	47	40	50	43	38		41	37	33				30
6	69	54	44	38	65	52	43	36	61	49	41	35	45	38	33		38	33	29				26
7	63	49	40	33	60	47	38	32	57	45	37	31	41	34	29		34	29	26				23
8	59	44	35	29	56	43	34	29	53	41	33	28	38	31	26		32	27	23				21
9	55	41	32	26	52	39	31	26	50	38	30	25	35	28	24		29	24	21				19
10	51	37	29	24	49	36	28	23	46	35	27	23	32	26	21		27	22	19				17

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0 - 10	3	2.42	2.42
10 - 20	9	7.08	7.08
20 - 30	13	10.43	10.43
30 - 40	15	12.11	12.11
40 - 50	14	11.27	11.27
50 - 60	12	10.09	10.09
60 - 70	10	8.73	8.73
70 - 80	9	7.37	7.37
80 - 90	7	6.21	6.21
90 - 120	18	14.59	14.59
90 - 130	22	18.20	18.20
90 - 150	27	22.85	22.85
90 - 180	29	24.29	24.29
0 - 180	120	100.00	100.00

Average Luminance (Cd/m²)

Angle	0 Degree	45 Degree	90 Degree
45.0	801	1266	1167
55.0	865	1135	1036
65.0	800	1345	1071
75.0	956	1627	866
85.0	3021	4005	2932

Luminaire Luminous Flux: 120

Measured Input Power: 1.87 W

Total Luminaire Efficiency: N/A

Luminaire Luminous Efficacy: 64.2 lm/W

Luminaire Spacing Criterion (0 Degree): 0.9929

Luminaire Spacing Criterion (90 Degree): 1.1269

CIE Type: Direct/Indirect



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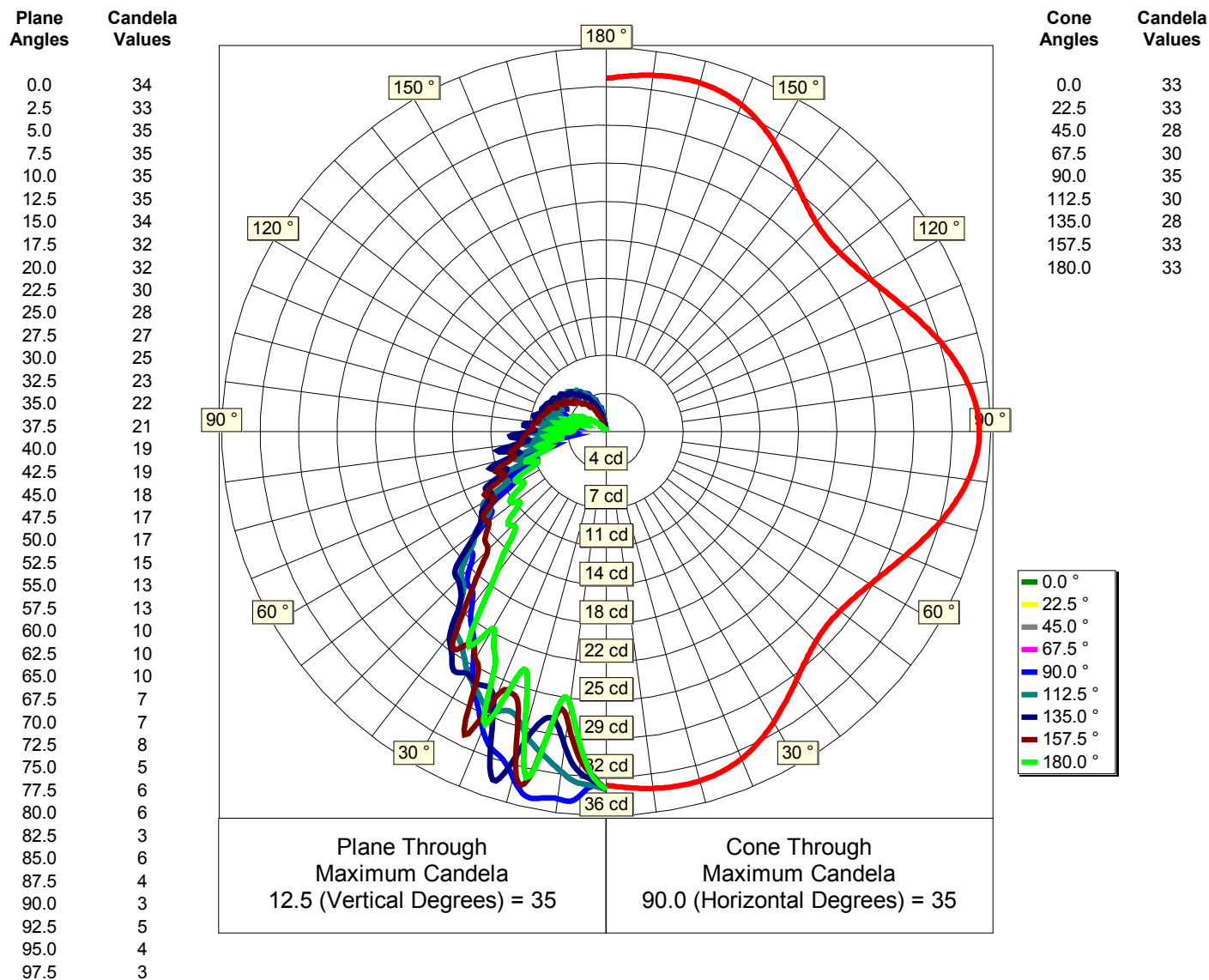
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Luminous Intensity - Polar Curve for each Plane(1)





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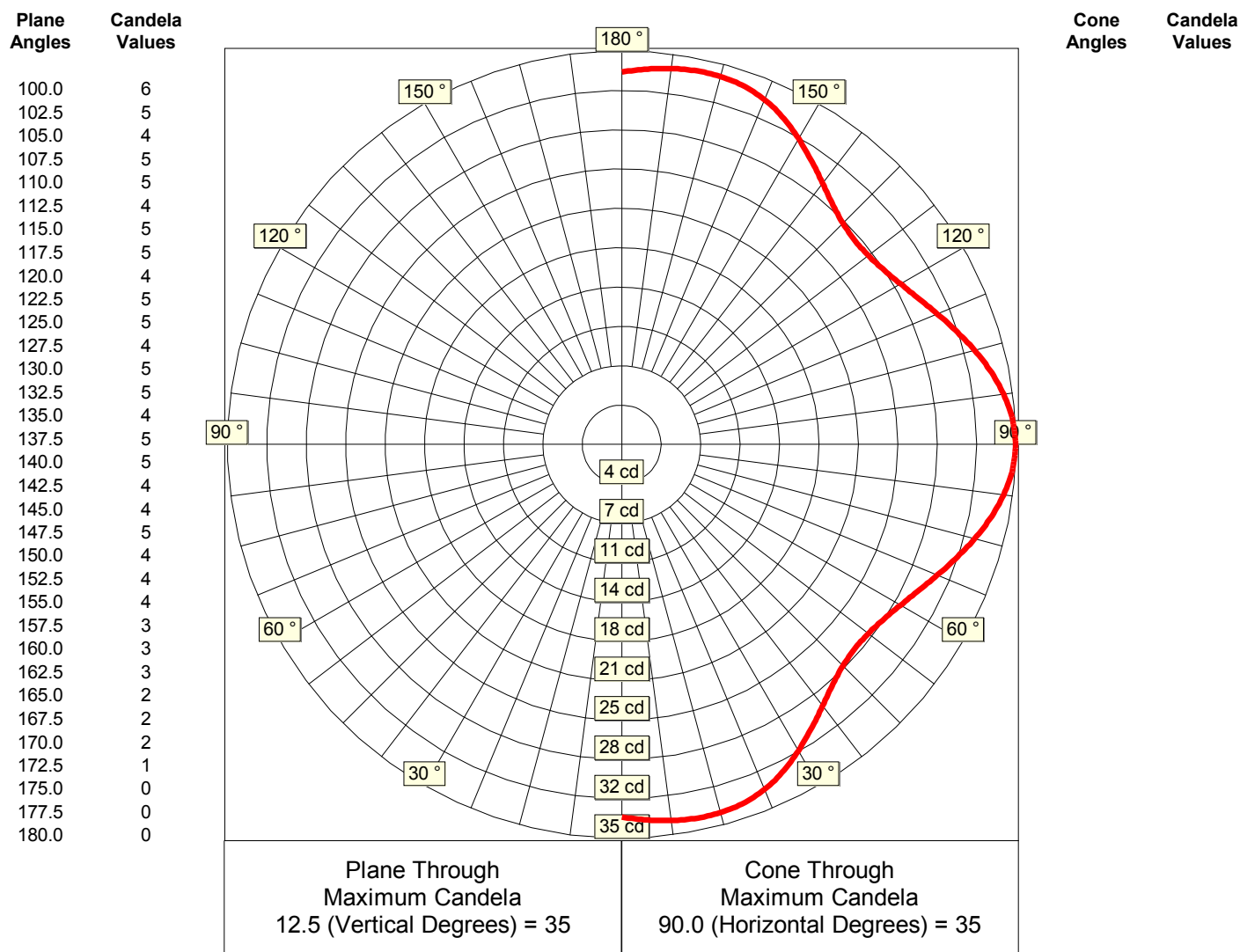
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Photometric Report: S1710163-R1

Prepared for: Andlight · Test Date: 16 October 2017

Luminaire: SLAB W20 WALL · Lumcat: SLA-W20-W-WW-FRN-012

Luminous Intensity - Polar Curve for each Plane(2)





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IES File Headers

IESNA:LM-63-2002
[ISSUEDATE] 16 October 2017
[TESTLAB] Spectra Lux Industries Inc.
[TEST] S1710163-R1
[MANUFAC] Andlight
[LUMCAT] SLA-W20-W-WW-FRN-012
[LUMINAIRE] SLAB W20 WALL
[LAMP] Cluster of 3000K Seoul LEDs Operating at 12 Volts DC
[_BURNING] Vertical Base Up (120 Luminaire Lumens)
[_REFLECTOR] None
[_LENS] Polycarbonate
[_HOUSING] Fern Green Felt Body
[DISTRIBUTION] Direct/Indirect

Candela Table

Lateral Angles

	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0
0.0	34	34	34	34	34	34	34	34	34
2.5	32	32	33	33	33	33	33	32	32
5.0	29	30	32	33	35	33	32	30	29
7.5	26	27	30	32	35	32	30	27	26
10.0	27	27	28	31	35	31	28	27	27
12.5	33	33	28	30	35	30	28	33	33
15.0	30	33	31	29	34	29	31	33	30
17.5	25	27	34	28	32	28	34	27	25
20.0	25	26	32	28	32	28	32	26	25
22.5	30	27	28	28	30	28	28	27	30
25.0	25	31	26	28	28	28	26	31	25
27.5	23	26	27	27	27	27	27	26	23
30.0	21	24	26	26	25	26	26	24	21
32.5	24	23	27	25	23	25	27	23	24
35.0	21	25	25	24	22	24	25	25	21
37.5	17	23	24	23	21	23	24	23	17
40.0	15	20	21	21	19	21	21	20	15
42.5	13	17	20	20	19	20	20	17	13
45.0	12	16	20	19	18	19	20	16	12
47.5	12	15	19	18	17	18	19	15	12
50.0	11	15	17	16	17	16	17	15	11
52.5	11	14	15	15	15	15	15	14	11
55.0	11	14	14	13	13	13	14	14	11
57.5	9	13	14	13	13	13	14	13	9
60.0	9	12	13	13	10	13	13	12	9
62.5	9	13	12	11	10	11	12	13	9
65.0	7	11	12	11	10	11	12	11	7
67.5	7	10	11	11	7	11	11	10	7
70.0	8	11	10	8	7	8	10	11	8
72.5	6	10	11	9	8	9	11	10	6
75.0	5	9	9	9	5	9	9	9	5
77.5	7	9	9	6	6	6	9	9	7
80.0	5	9	10	7	6	7	10	9	5
82.5	4	8	8	8	3	8	8	8	4
85.0	6	8	8	5	6	5	8	8	6
87.5	4	8	9	6	4	6	9	8	4
90.0	3	7	7	7	3	7	7	7	3



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Lateral Angles

		0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0
V e r t i c a l	92.5	5	7	7	5	5	5	7	7	5
	95.0	3	7	8	5	4	5	8	7	3
	97.5	3	7	7	6	3	6	7	7	3
	100.0	5	6	7	5	6	5	7	6	5
	102.5	3	6	7	5	5	5	7	6	3
	105.0	3	6	7	6	4	6	7	6	3
	107.5	4	6	6	6	5	6	6	6	4
	110.0	2	6	6	5	5	5	6	6	2
	112.5	3	6	6	6	4	6	6	6	3
	115.0	3	5	6	6	5	6	6	5	3
	117.5	2	5	6	5	5	5	6	5	2
	120.0	3	5	6	5	4	5	6	5	3
	122.5	3	5	6	6	5	6	6	5	3
	125.0	2	5	6	5	5	5	6	5	2
	127.5	2	5	5	5	4	5	5	5	2
	130.0	2	4	5	5	5	5	5	4	2
	132.5	1	4	5	5	5	5	5	4	1
	135.0	1	4	5	5	4	5	5	4	1
	137.5	1	4	5	5	5	5	5	4	1
	A n g l e s	140.0	1	3	5	4	5	4	5	3
142.5		0	3	4	5	4	5	4	3	0
145.0		0	3	4	5	4	5	4	3	0
147.5		0	3	4	4	5	4	4	3	0
150.0		0	3	4	4	4	4	4	3	0
152.5		0	2	4	4	4	4	4	2	0
155.0		0	2	3	3	4	3	3	2	0
157.5		0	2	3	3	3	3	3	2	0
160.0		0	1	3	3	3	3	3	1	0
162.5		0	0	2	3	3	3	2	0	0
165.0		0	0	2	2	2	2	2	0	0
167.5		0	0	1	2	2	2	1	0	0
170.0		0	0	1	1	2	1	1	0	0
172.5		0	0	0	1	1	1	0	0	0
175.0		0	0	0	0	0	0	0	0	0
177.5		0	0	0	0	0	0	0	0	0
180.0	0	0	0	0	0	0	0	0	0	