



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-63, IES LM-79, ANSI C82.77

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

General Information		Lamp Details: CY4424		Driver Details: CY2019	
DUT Lab ID	SRIS 2824-8	Seasoning	€Á[~ !Á	Type	LED Power Supply
Lamp Type	LED/SSL	Test Product	SLA-20-P-41	Manufacturer	Meanwell
Current Mode	AC	Manufacturer	EPISTAR	Catalog No.	IDLV-45-12
Test Report	S2008061-R1	Lamp Catalog No.	OMNICHIP (320404-xx-300-12-4.4)	Maximum Power	45 W
Test Date	6 August 2020	Drive Current	180 mA	Input Voltage	120.00 V
Report Date	14 Decemb [^] ! Á G G E Á	Nominal Color	4100 K	Operating Frequency	60 Hz
Ambient	24.2 °C	Burning Position	Junction Horizontal	Input Power	3.74 W

Luminaire Data

General Information		Optics		Aperture (feet)	
Manufacturer	ANDlight	Reflector	None	X	0.0260
Name	SLAB	Housing	Black Body	Y	0.5417
Catalog No.	SLA-20-P-41	Lens	Polycarbonate	Z	0.4583

Stabilization Time: I í Á ã ~ ¢ • Á

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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	iRDC	CIF-3000A	974998	N.P.C.R.	N.P.C.R.
Input Power Meter	Yokogawa	WT210	27E116584	2020-07-22	2021-09-22
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	110802	2019-09-05	2020-09-05

Environment Equipment

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Temperature Humidity Sensor	Omega	HH311	120504176	2020-07-16	2021-07-16

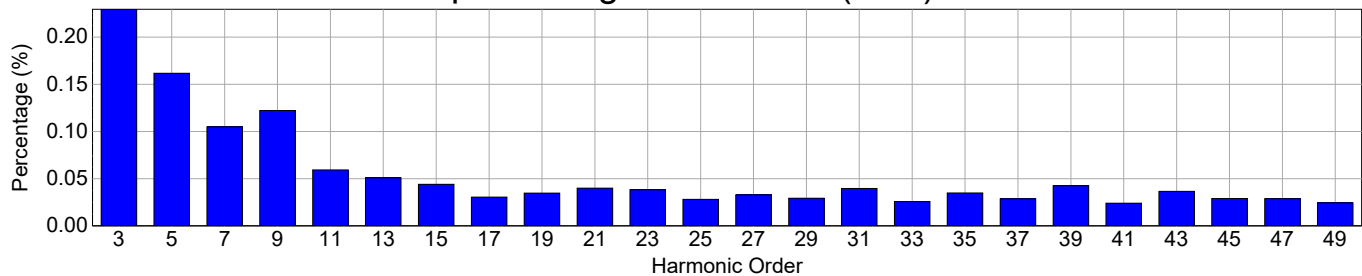


Electrical Measurements

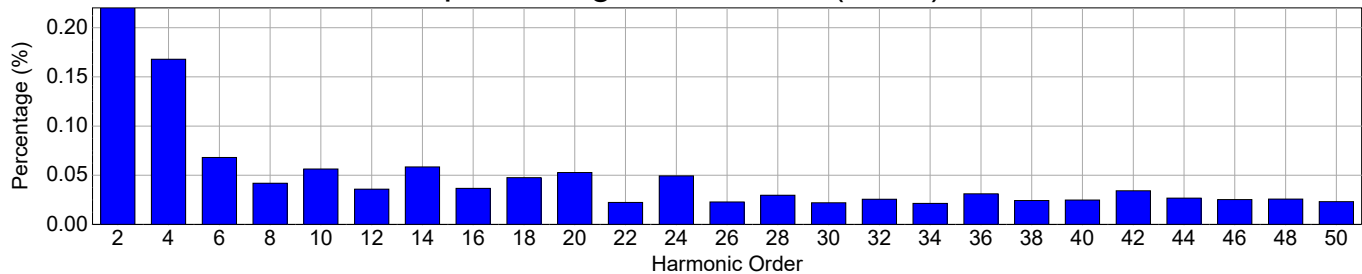
Input

Frequency	60 Hz	Active Power	3.74 W	THDV [ANSI]	0.48 %
Voltage	120.1 V(rms)	Apparent Power	5.83 VA	THDA [ANSI]	15.33 %
Current	0.0486 A(rms)	Power Factor	0.641	Max. Harmonic At	7th order

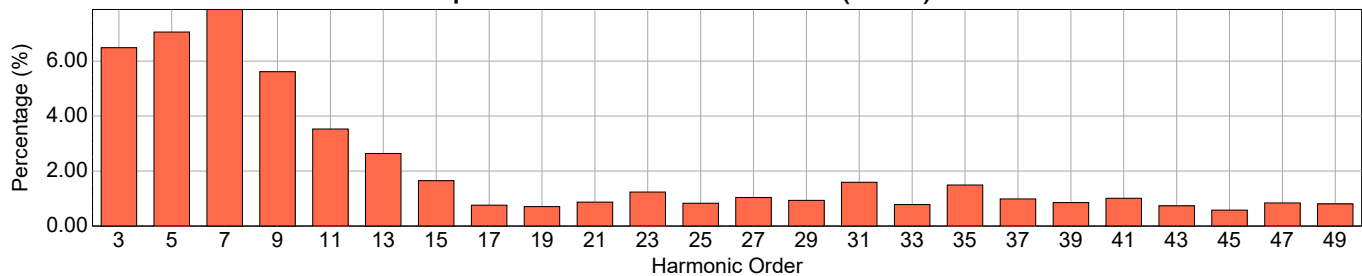
Input Voltage Harmonics (Odd)



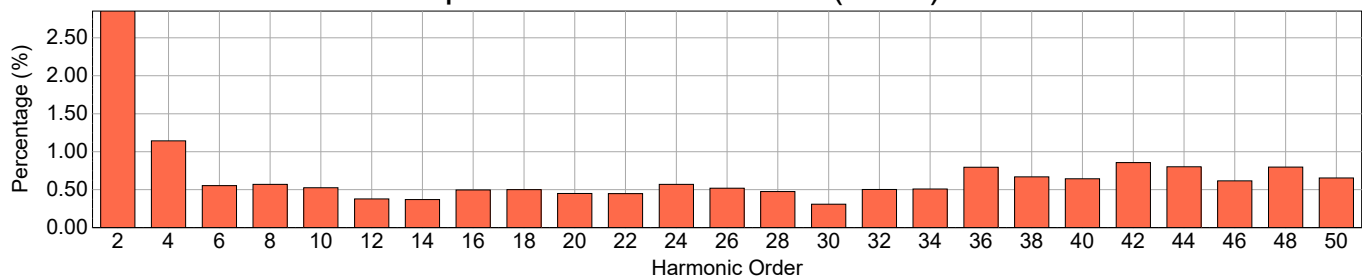
Input Voltage Harmonics (Even)



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	0.220	2.854
3	180	0.230	6.484	4	240	0.168	1.143
5	300	0.162	7.055	6	360	0.068	0.552
7	420	0.105	7.880	8	480	0.042	0.571
9	540	0.122	5.616	10	600	0.056	0.527
11	660	0.059	3.529	12	720	0.036	0.378
13	780	0.051	2.640	14	840	0.059	0.369
15	900	0.044	1.651	16	960	0.037	0.497
17	1020	0.031	0.762	18	1080	0.048	0.500
19	1140	0.035	0.705	20	1200	0.053	0.449
21	1260	0.040	0.870	22	1320	0.022	0.448
23	1380	0.038	1.234	24	1440	0.049	0.570
25	1500	0.028	0.827	26	1560	0.023	0.519
27	1620	0.033	1.037	28	1680	0.030	0.475
29	1740	0.029	0.932	30	1800	0.022	0.309
31	1860	0.040	1.591	32	1920	0.026	0.503
33	1980	0.026	0.782	34	2040	0.021	0.510
35	2100	0.035	1.492	36	2160	0.031	0.795
37	2220	0.029	0.989	38	2280	0.024	0.668
39	2340	0.043	0.850	40	2400	0.025	0.643
41	2460	0.024	1.012	42	2520	0.034	0.857
43	2580	0.037	0.738	44	2640	0.027	0.803
45	2700	0.029	0.578	46	2760	0.025	0.616
47	2820	0.029	0.841	48	2880	0.026	0.797
49	2940	0.024	0.808	50	3000	0.023	0.655



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Photometric Report: S2008061-R1

Prepared for: ANDlight · Test Date: 06 August 2020

Luminaire: SLAB · Lumcat: SLA-20-P-41

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		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	69	87	79	72	67	71	66	62	58	55	52				48
3		88	76	67	59	83	72	64	57	79	69	61	55	63	56	51	51	47	44				40
4		81	67	57	50	76	64	55	48	72	61	53	47	56	49	44	46	41	37				34
5		74	60	50	43	70	57	48	42	66	55	46	40	50	43	38	41	36	33				30
6		68	54	44	37	65	51	43	36	61	49	41	35	45	38	33	37	33	29				26
7		63	49	39	33	60	47	38	32	57	45	37	31	41	34	29	34	29	26				23
8		59	44	35	29	56	42	34	28	53	41	33	28	37	31	26	31	27	23				21
9		55	41	32	26	52	39	31	25	49	37	30	25	34	28	23	29	24	21				19
10		51	37	29	24	49	36	28	23	46	34	27	22	32	26	21	27	22	19				17

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0 - 10	3	2.42	2.42
10 - 20	10	6.97	6.97
20 - 30	15	10.32	10.32
30 - 40	17	11.78	11.78
40 - 50	16	11.49	11.49
50 - 60	15	10.43	10.43
60 - 70	13	8.92	8.92
70 - 80	11	7.43	7.43
80 - 90	9	6.19	6.19
90 - 120	21	14.51	14.51
90 - 130	26	18.09	18.09
90 - 150	32	22.73	22.73
90 - 180	34	24.05	24.05
0 - 180	142	100.00	100.00

Average Luminance (Cd/m²)

Angle	0 Degree	45 Degree	90 Degree
45.0	1290	1402	1008
55.0	1165	1366	939
65.0	1069	1522	1009
75.0	1203	2032	1297
85.0	2505	4734	3038

Luminaire Luminous Flux: 142

Measured Input Power: 3.74 W

Total Luminaire Efficiency: N/A

Luminaire Luminous Efficacy: 38.0 lm/W

Luminaire Spacing Criterion (0 Degree): 1.2310

Luminaire Spacing Criterion (90 Degree): 1.1487

Category: Up and Down

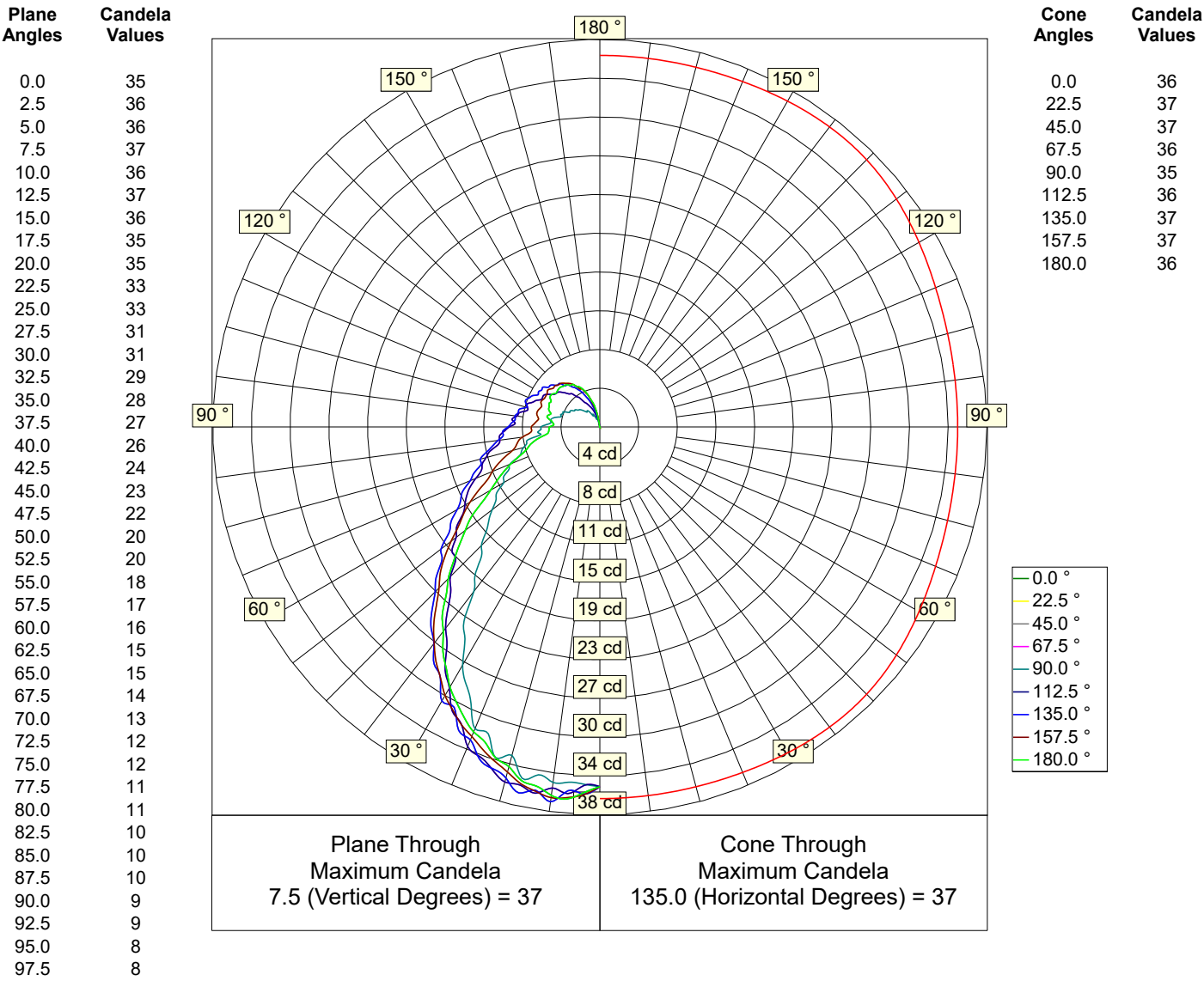


Photometric Report: S2008061-R1

Prepared for: ANDlight · Test Date: 06 August 2020

Luminaire: SLAB · Lumcat: SLA-20-P-41

Luminous Intensity - Polar Curve for each Plane(1)



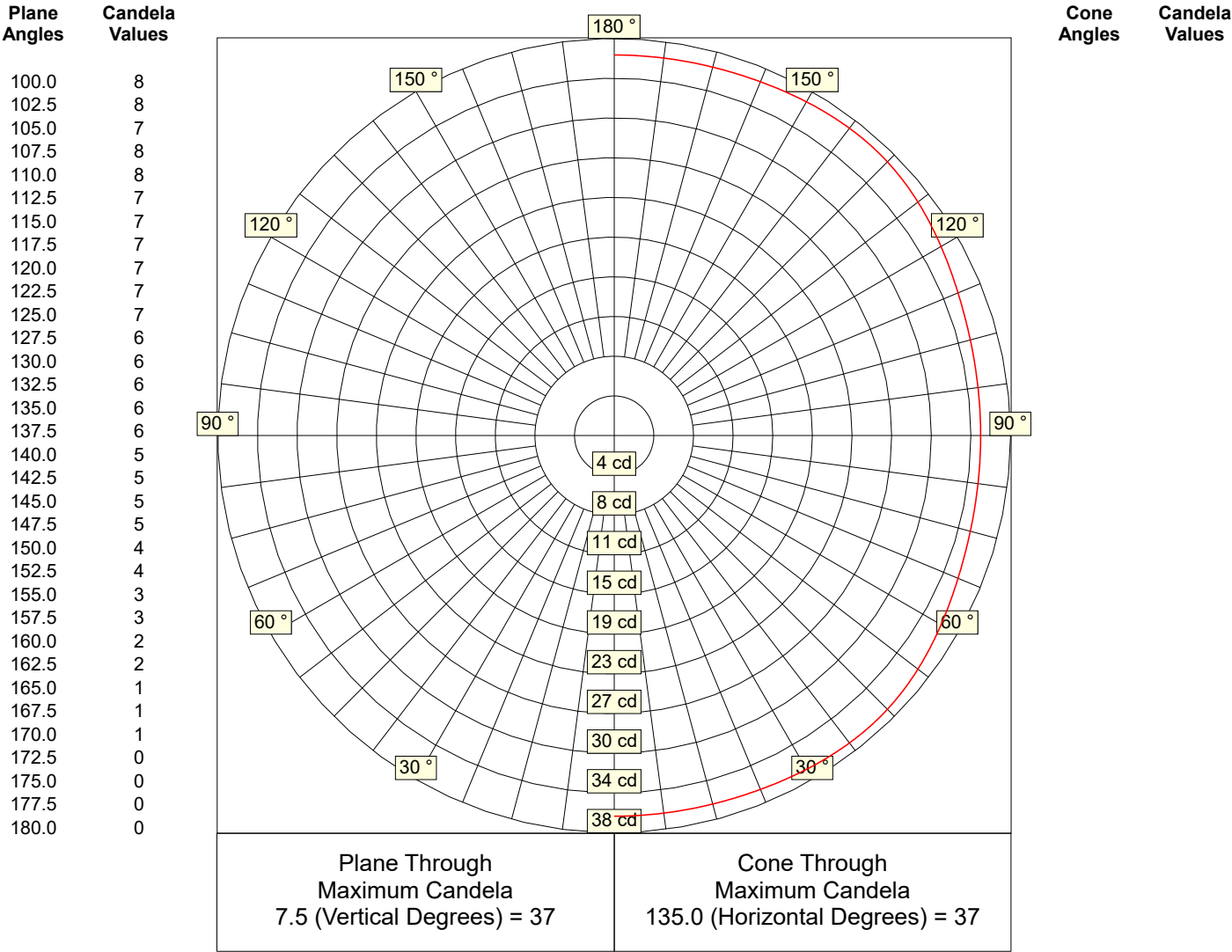


Photometric Report: S2008061-R1

Prepared for: ANDlight · Test Date: 06 August 2020

Luminaire: SLAB · Lumcat: SLA-20-P-41

Luminous Intensity - Polar Curve for each Plane(2)





IES File Headers

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IESNA:LM-63
[ISSUEDATE]      06 August 2020
[TESTLAB]        Spectra Lux
[TEST]           S2008061-R1
[MANUFAC]        ANDlight
[LUMCAT]          SLA-20-P-41
[LUMINAIRE]       SLAB
[LAMP]           Clusters of EPISTAR OMNICHIP (320404-xx-300-12-4.4) LEDs c/w Meanwell Driver IDLV-45-12 @ 120.00V
[_BURNING]        Horizontal (142 Luminaire Lumens)
[_REFLECTOR]      None
[_LENS]           Polycarbonate
[_HOUSING]        Black Body
[_NOMINAL COLOR] 4100 K
[_DRIVE CURRENT] 180 mA

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Candela Table

Lateral Angles

	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0
Vertical Angles	0.0	35	35	35	35	35	35	35	35
	2.5	36	36	36	35	35	36	36	36
	5.0	37	36	36	36	35	36	36	37
	7.5	36	37	37	36	35	36	37	36
	10.0	36	36	36	36	35	36	36	36
	12.5	36	36	37	36	35	36	37	36
	15.0	34	35	36	36	33	36	35	34
	17.5	34	34	35	35	34	35	34	34
	20.0	33	34	35	34	32	34	34	33
	22.5	32	33	33	34	32	34	33	32
	25.0	31	32	33	32	30	32	32	31
	27.5	30	31	31	31	28	31	31	30
	30.0	29	30	31	30	27	30	30	29
	32.5	28	29	29	28	25	28	29	28
	35.0	27	28	28	26	23	26	28	27
	37.5	25	27	27	25	20	25	27	25
	40.0	24	25	26	23	19	23	25	24
	42.5	22	24	24	22	17	22	24	22
	45.0	21	22	23	21	16	21	22	21
	47.5	19	21	22	19	15	19	21	19
Angles	50.0	18	20	20	19	14	19	20	18
	52.5	17	18	20	18	13	18	18	17
	55.0	15	17	18	17	12	17	17	15
	57.5	14	16	17	16	12	16	16	14
	60.0	12	15	16	15	11	15	15	12
	62.5	11	13	15	15	11	15	13	11
	65.0	10	12	15	14	10	14	12	10
	67.5	9	11	14	13	10	13	11	9
	70.0	8	11	13	12	8	12	11	8
	72.5	8	10	12	12	8	12	10	8
	75.0	7	9	12	12	8	12	9	7
	77.5	7	8	11	11	7	11	8	7
	80.0	6	8	11	10	7	10	8	6
	82.5	5	8	10	10	6	10	8	5
	85.0	5	7	10	10	6	10	7	5
	87.5	5	7	10	9	6	9	7	5
	90.0	5	7	9	9	6	9	7	5



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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 A n g l e s	92.5	5	6	9	8	5	8	9	6	5
	95.0	5	6	8	9	5	9	8	6	5
	97.5	5	6	8	8	5	8	8	6	5
	100.0	5	6	8	8	5	8	8	6	5
	102.5	5	6	8	7	4	7	8	6	5
	105.0	5	6	7	7	4	7	7	6	5
	107.5	5	6	8	7	4	7	8	6	5
	110.0	5	6	8	7	4	7	8	6	5
	112.5	5	6	7	7	4	7	7	6	5
	115.0	5	6	7	6	3	6	7	6	5
	117.5	5	6	7	6	3	6	7	6	5
	120.0	6	6	7	6	3	6	7	6	6
	122.5	6	6	7	6	3	6	7	6	6
	125.0	6	6	7	6	3	6	7	6	6
	127.5	5	6	6	5	3	5	6	6	5
	130.0	5	6	6	5	3	5	6	6	5
	132.5	5	6	6	5	2	5	6	6	5
	135.0	5	6	6	5	2	5	6	6	5
	137.5	5	6	6	4	2	4	6	6	5
	140.0	5	6	5	4	2	4	5	6	5
142.5	5	5	5	4	2	4	5	5	5	
145.0	5	5	5	4	2	4	5	5	5	
147.5	5	5	5	3	2	3	5	5	5	
150.0	5	5	4	3	1	3	4	5	5	
152.5	4	4	4	2	1	2	4	4	4	
155.0	4	4	3	2	1	2	3	4	4	
157.5	4	4	3	2	1	2	3	4	4	
160.0	3	3	2	2	1	2	2	3	3	
162.5	3	3	2	1	1	1	2	3	3	
165.0	2	2	1	1	1	1	1	2	2	
167.5	2	1	1	1	0	1	1	1	2	
170.0	1	1	1	1	0	1	1	1	1	
172.5	0	0	0	0	0	0	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	