



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: CY5446		Driver Details: CY2568	
DUT Lab ID	SRIS 3157-3	Seasoning	0 Hour	Type	LED Power Supply
Lamp Type	LED/SSL	Test Product	COL-175-3-P-H-30K	Manufacturer	Meanwell
Current Mode	AC	Manufacturer	Nichia	Catalog No.	PWM-90-24
Test Report	S2212051-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	24.8 °C	Burning Position	Horizontal	Input Power	37.66 W

Luminaire Data

General Information		Optics		Aperture (feet)	
Manufacturer	ANDlight	Optics	None	X	-0.5833
Name	Column Series	Housing	(3) Facetted Horizontal Cylinders	Y	2.6250
Catalog No.	COL-175-3-P-H-30K	Lens	(3) Acrylic Diffusers	Z	-0.5833

Stabilization Time: 1 hour

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

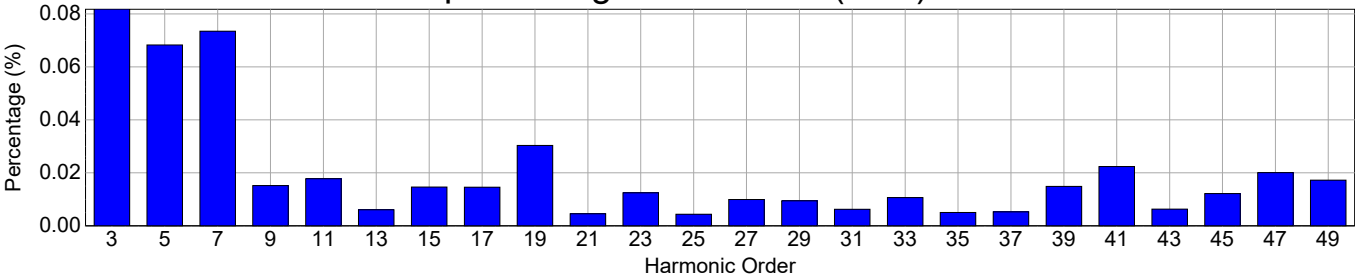


Electrical Measurements

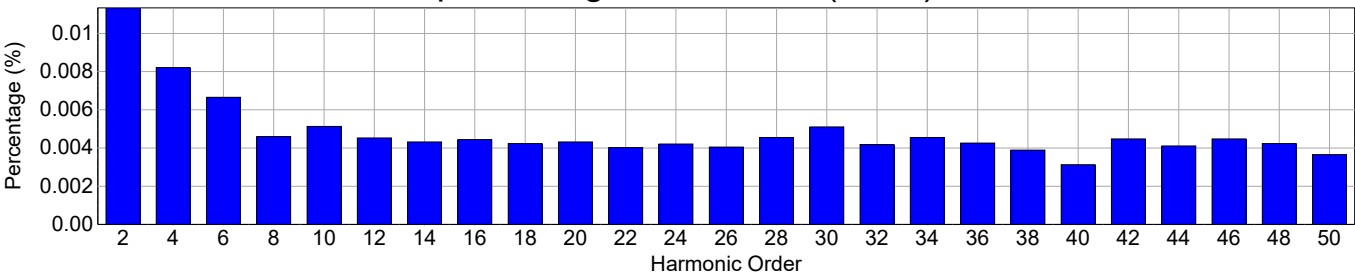
Input

Frequency	60 Hz	Active Power	37.66 W	THDV [ANSI]	0.14 %
Voltage	120.0 V(rms)	Apparent Power	38.27 VA	THDA [ANSI]	7.42 %
Current	0.3190 A(rms)	Power Factor	0.984	Max. Harmonic At	5th order

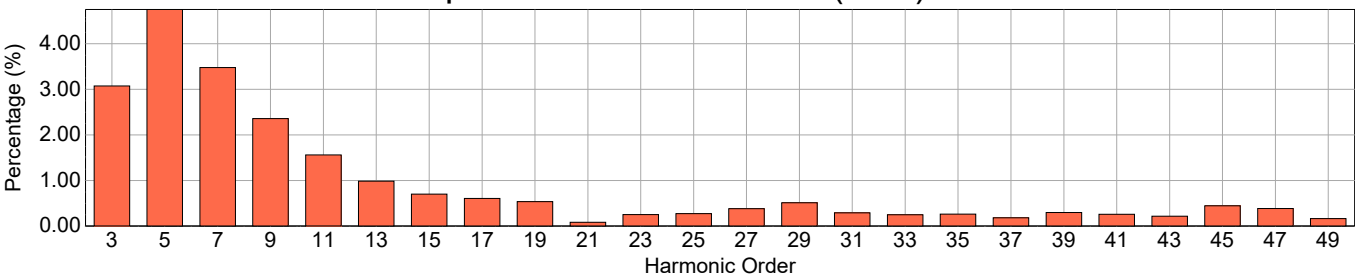
Input Voltage Harmonics (Odd)



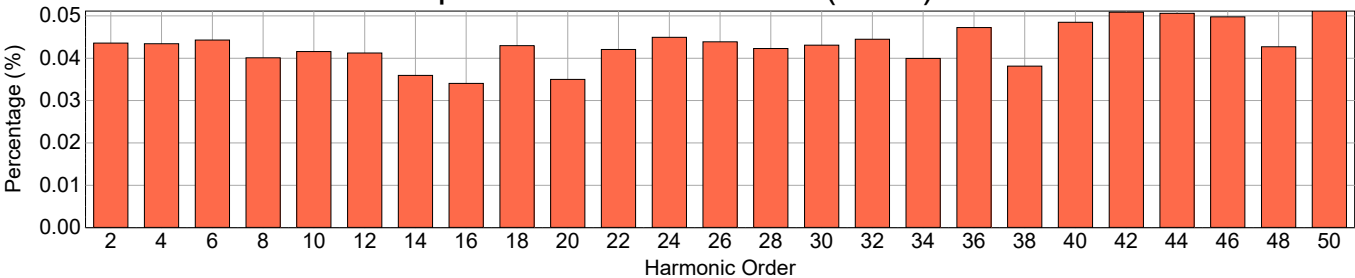
Input Voltage Harmonics (Even)



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	0.044
3	180	0.082	3.073	4	240	0.008	0.043
5	300	0.068	4.751	6	360	0.007	0.044
7	420	0.073	3.475	8	480	0.005	0.040
9	540	0.015	2.357	10	600	0.005	0.042
11	660	0.018	1.559	12	720	0.005	0.041
13	780	0.006	0.983	14	840	0.004	0.036
15	900	0.015	0.701	16	960	0.004	0.034
17	1020	0.015	0.605	18	1080	0.004	0.043
19	1140	0.030	0.535	20	1200	0.004	0.035
21	1260	0.005	0.082	22	1320	0.004	0.042
23	1380	0.012	0.251	24	1440	0.004	0.045
25	1500	0.004	0.272	26	1560	0.004	0.044
27	1620	0.010	0.382	28	1680	0.005	0.042
29	1740	0.009	0.512	30	1800	0.005	0.043
31	1860	0.006	0.288	32	1920	0.004	0.044
33	1980	0.011	0.246	34	2040	0.005	0.040
35	2100	0.005	0.262	36	2160	0.004	0.047
37	2220	0.005	0.182	38	2280	0.004	0.038
39	2340	0.015	0.298	40	2400	0.003	0.049
41	2460	0.022	0.257	42	2520	0.004	0.051
43	2580	0.006	0.216	44	2640	0.004	0.051
45	2700	0.012	0.445	46	2760	0.004	0.050
47	2820	0.020	0.384	48	2880	0.004	0.043
49	2940	0.017	0.162	50	3000	0.004	0.051



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Photometric Report: S2212051-R1

Prepared for: ANDlight · Test Date: 05 December 2022

Luminaire: Column Series · Lumcat: COL-175-3-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	79	86	81	77	72	67	64	61	43	42	40				34
2		92	82	73	66	84	75	68	62	77	69	63	57	57	52	48	36	34	31				26
3		84	71	61	54	76	65	57	50	69	60	52	46	50	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		70	55	45	37	63	51	42	35	58	46	38	32	39	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				11
8		54	40	30	24	50	37	28	23	45	34	26	21	28	22	18	18	15	12				9
9		50	36	27	21	46	33	25	20	42	31	23	19	26	20	16	17	13	11				8
10		47	33	24	19	43	30	23	18	39	28	21	16	24	18	14	16	12	9				7

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0 - 10	19	0.91	0.91
10 - 20	55	2.70	2.70
20 - 30	88	4.30	4.30
30 - 40	115	5.62	5.62
40 - 50	134	6.57	6.57
50 - 60	145	7.12	7.12
60 - 70	149	7.32	7.32
70 - 80	148	7.28	7.28
80 - 90	146	7.16	7.16
90 - 120	454	22.29	22.29
90 - 130	607	29.76	29.76
90 - 150	869	42.63	42.63
90 - 180	1040	51.03	51.03
0 - 180	2039	100.00	100.00

Average Luminance (Cd/m²)

Angle	0 Degree	45 Degree	90 Degree
45.0	459	560	621
55.0	461	652	765
65.0	461	837	1044
75.0	484	1315	1713
85.0	668	3802	5112

Luminaire Luminous Flux: 2039

Measured Input Power: 37.66 W

Total Luminaire Efficiency: N/A

Luminaire Luminous Efficacy: 54.1 lm/W

Luminaire Spacing Criterion (0 Degree): 1.3306

Luminaire Spacing Criterion (90 Degree): 1.5327

Category: Up and Down

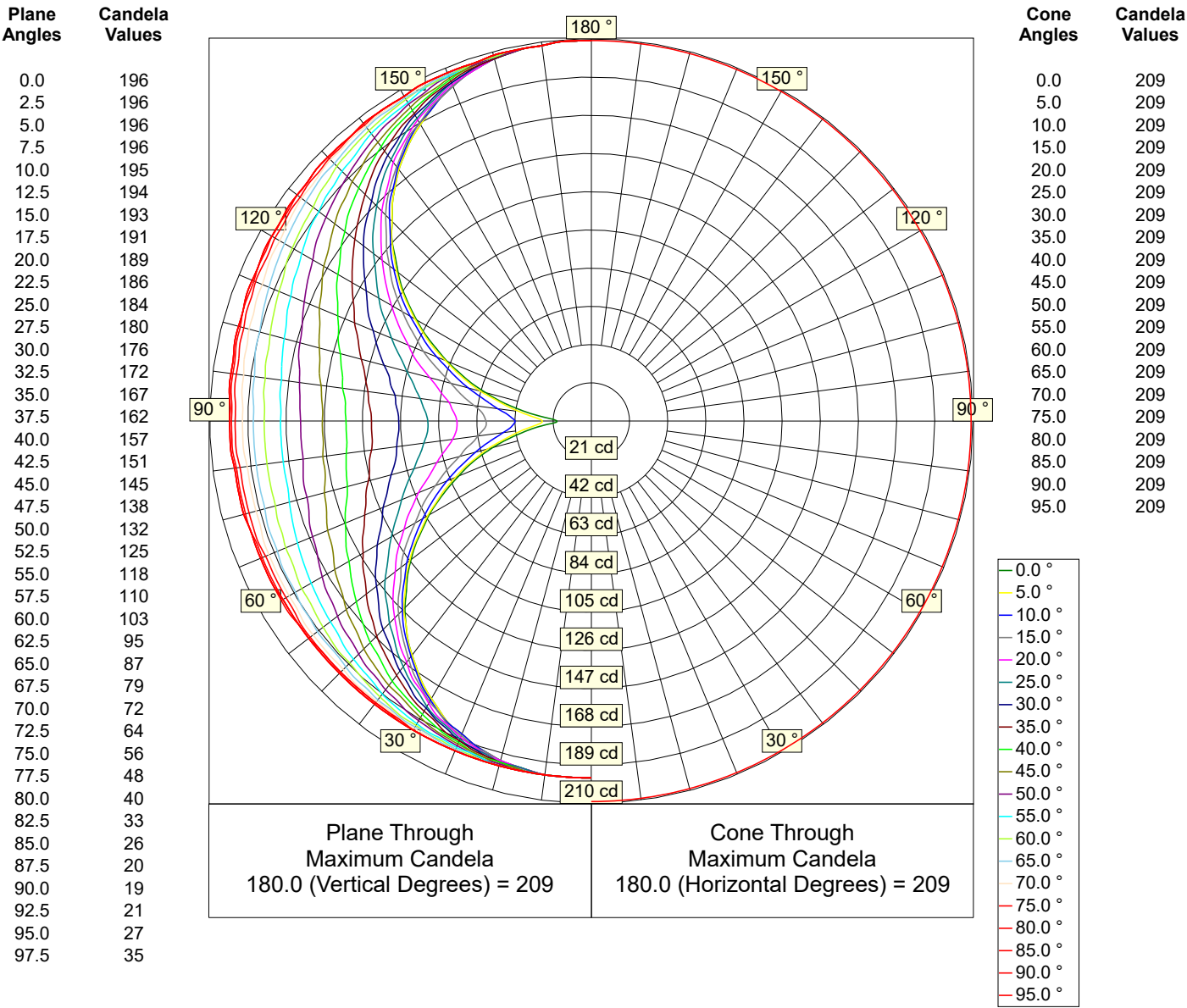


Photometric Report: S2212051-R1

Prepared for: ANDlight · Test Date: 05 December 2022

Luminaire: Column Series · Lumcat: COL-175-3-P-H-30K

Luminous Intensity - Polar Curve for each Plane(1)



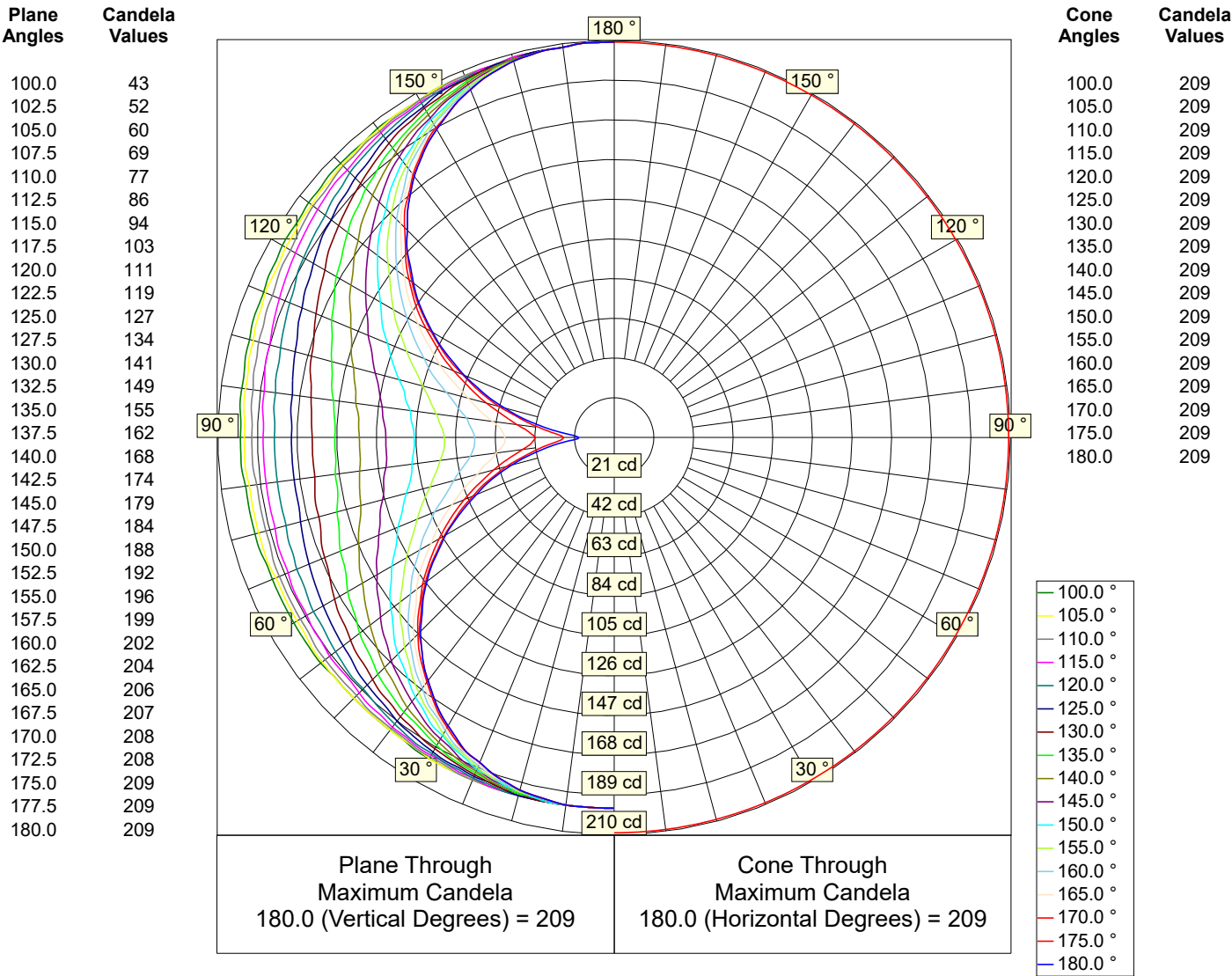


Photometric Report: S2212051-R1

Prepared for: ANDlight · Test Date: 05 December 2022

Luminaire: Column Series · Lumcat: COL-175-3-P-H-30K

Luminous Intensity - Polar Curve for each Plane(2)





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IES File Headers

IESNA:LM-63
[ISSUEDATE] 05 December 2022
[TESTLAB] Spectra Lux
[TEST] S2212051-R1
[MANUFAC] ANDlight
[LUMCAT] COL-175-3-P-H-30K
[LUMINAIRE] Column Series
[LAMP] Clusters of Nichia LEDs c/w Meanwell Driver PWM-90-24 @ 120.00V
[_BURNING] Horizontal (2,039 Luminaire Lumens)
[_OPTICS] None
[_LENS] (3) Acrylic Diffusers
[_HOUSING] (3) Facetted Horizontal Cylinders
[_NOMINAL COLOR] 3000 K
[_DRIVE CURRENT] N.K.

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	0.0	196	196	196	196	196	196	196	196	196
	2.5	196	196	196	196	196	196	196	196	196
	5.0	196	196	196	196	196	196	196	196	196
	7.5	196	196	196	196	196	196	196	196	196
	10.0	195	195	195	195	195	196	196	196	196
	12.5	194	194	194	194	194	195	195	195	195
	15.0	193	193	193	193	194	194	194	194	195
	17.5	191	191	191	191	192	193	193	194	194
	20.0	189	189	189	190	191	191	192	193	193
	22.5	186	186	186	187	188	189	190	191	192
e	25.0	184	184	184	185	185	186	187	189	191
	27.5	180	180	181	181	183	184	185	186	188
	30.0	176	176	177	178	179	181	182	184	188
	32.5	172	172	173	174	175	177	180	182	184
	35.0	167	167	168	170	172	174	176	179	182
	37.5	162	162	163	165	167	170	173	176	180
	40.0	157	157	158	160	163	166	169	173	177
	42.5	151	151	153	155	158	161	165	170	174
	45.0	145	146	147	150	153	157	162	167	172
	47.5	138	139	141	144	148	152	158	163	169
r	50.0	132	133	134	137	142	148	153	160	166
	52.5	125	126	128	132	136	143	149	156	163
	55.0	118	119	121	126	131	137	145	152	160
	57.5	110	111	114	119	125	132	140	149	157
	60.0	103	104	107	112	119	127	136	145	154
	62.5	95	96	100	106	114	122	131	142	152
	65.0	87	89	93	100	108	117	127	138	149
	67.5	79	81	86	93	103	113	124	135	147
	70.0	72	74	79	87	97	109	120	132	144
	72.5	64	66	72	81	92	105	117	130	141
t	75.0	56	59	66	75	88	101	114	127	139
	77.5	48	51	60	71	84	98	111	125	138
	80.0	40	44	54	66	80	95	109	124	137
	82.5	33	38	49	63	77	93	108	122	136
	85.0	26	32	45	60	75	91	107	121	135
	87.5	20	28	43	58	74	90	106	121	135
	90.0	19	27	42	58	74	90	106	121	135



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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	21	29	44	59	75	91	107	122	136	148
	95.0	27	34	47	61	77	93	108	123	136	149
	97.5	35	40	52	65	79	95	109	124	138	150
	100.0	43	47	57	70	83	98	112	126	139	152
	102.5	52	54	63	75	87	101	114	128	141	153
	105.0	60	63	70	80	92	105	118	131	143	155
	107.5	69	71	77	86	98	109	122	134	146	157
	110.0	77	79	84	93	104	114	126	137	148	159
	112.5	86	87	92	100	109	119	130	141	151	162
	115.0	94	96	100	106	115	124	135	144	154	164
	117.5	103	104	107	113	121	130	139	148	158	167
	120.0	111	112	115	120	127	135	143	152	161	170
	122.5	119	120	123	127	133	140	148	156	164	172
	125.0	127	128	130	134	139	145	153	160	168	175
	127.5	134	135	137	140	145	151	158	164	171	178
	130.0	141	142	144	147	151	157	163	168	175	181
	132.5	149	149	150	153	157	162	167	172	178	183
	135.0	155	155	157	160	163	167	171	176	181	186
A n g l e s	137.5	162	162	164	166	168	172	176	180	184	188
	140.0	168	168	169	171	173	177	180	184	187	191
	142.5	174	174	175	176	179	181	184	187	190	193
	145.0	179	179	180	181	183	185	187	190	193	195
	147.5	184	184	185	186	187	189	191	193	195	197
	150.0	188	188	189	189	191	192	194	195	197	199
	152.5	192	192	192	193	194	195	196	198	199	201
	155.0	196	196	196	196	197	198	199	200	201	202
	157.5	199	199	199	199	200	201	201	202	203	204
	160.0	202	202	202	202	202	203	203	204	205	205
	162.5	204	204	204	204	204	205	205	205	206	206
	165.0	206	206	206	206	206	206	206	206	207	207
	167.5	207	207	207	207	207	207	207	207	207	207
	170.0	208	208	208	208	208	208	208	208	208	208
	172.5	208	208	208	208	208	208	208	208	208	208
	175.0	209	209	209	209	209	209	209	209	209	209
	177.5	209	209	209	209	209	209	209	209	209	209
	180.0	209	209	209	209	209	209	209	209	209	209



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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	196	196	196	196	196	196	196	196	196
	2.5	196	196	196	196	196	196	196	196	196
	5.0	196	196	196	196	196	196	196	196	196
	7.5	196	196	196	196	196	196	196	196	196
	10.0	196	196	196	196	196	196	196	196	196
	12.5	196	196	196	196	196	196	196	196	196
	15.0	195	196	196	196	196	196	196	196	196
	17.5	195	195	196	196	196	196	196	196	196
	20.0	194	194	195	196	196	196	196	196	196
	22.5	193	194	195	195	196	196	196	196	196
	25.0	192	193	194	195	196	196	196	196	196
	27.5	191	193	194	194	195	196	196	196	196
	30.0	190	192	193	194	195	196	196	196	196
	32.5	189	191	193	194	195	196	196	196	196
	35.0	187	190	192	193	194	195	196	196	196
	37.5	186	189	191	193	194	195	196	196	196
	40.0	184	187	190	192	194	195	196	196	196
	42.5	183	186	189	192	194	195	196	196	196
	45.0	181	185	188	191	193	195	196	196	196
	47.5	179	184	188	190	193	195	196	196	196
A n g l e s	50.0	178	182	187	190	193	195	196	196	196
	52.5	176	181	186	190	193	195	196	196	196
	55.0	174	180	185	189	193	195	196	196	196
	57.5	173	179	184	189	192	194	196	196	196
	60.0	171	178	184	188	192	194	196	196	196
	62.5	169	177	183	188	192	194	196	197	197
	65.0	167	176	182	188	192	194	196	197	197
	67.5	166	175	182	187	192	194	196	197	197
	70.0	165	174	181	187	192	195	196	197	197
	72.5	163	173	181	187	191	195	197	197	197
	75.0	162	172	180	186	191	195	197	198	198
	77.5	162	171	180	186	191	195	197	198	198
	80.0	161	171	180	186	191	195	197	198	198
	82.5	160	171	180	186	191	195	197	198	198
	85.0	160	171	180	186	192	196	198	199	199
	87.5	160	171	180	186	192	196	198	199	199
	90.0	160	171	180	186	192	196	198	199	199
	92.5	161	171	180	186	192	196	198	199	199
	95.0	161	172	181	187	193	197	199	200	200
	97.5	162	172	181	187	193	197	199	200	200
	100.0	163	173	182	188	194	197	199	200	200
	102.5	165	174	182	189	194	198	200	201	201
	105.0	166	175	183	189	195	198	200	201	201
	107.5	167	176	184	190	195	199	201	201	201
	110.0	169	178	185	191	196	199	201	202	202
	112.5	171	179	186	192	196	200	201	202	202
	115.0	173	181	187	193	197	200	202	202	202
	117.5	175	182	189	194	198	200	202	203	203
	120.0	177	184	190	195	198	201	203	203	203
	122.5	180	186	191	196	199	201	203	203	203
	125.0	182	188	192	197	200	202	203	204	204
	127.5	184	189	193	198	201	202	204	204	204
	130.0	186	191	195	199	201	203	204	204	204
	132.5	188	192	196	200	202	203	205	205	205



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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	190	194	198	200	203	204	205	205	205
	137.5	192	195	199	201	203	204	205	205	205
	140.0	194	197	200	202	204	205	205	205	205
	142.5	196	199	201	203	204	205	206	206	206
	145.0	198	200	202	204	205	206	206	206	206
	147.5	199	201	203	204	205	206	206	206	206
	150.0	201	202	204	205	206	206	206	206	206
	152.5	202	204	205	205	206	207	207	207	207
	155.0	204	205	205	206	207	207	207	207	207
	157.5	205	205	206	206	207	207	207	207	207
	160.0	206	206	206	207	207	207	207	207	207
	162.5	206	207	207	207	207	207	207	207	207
	165.0	207	207	207	208	208	208	208	208	208
	167.5	207	208	208	208	208	208	208	208	208
	170.0	208	208	208	208	208	208	208	208	208
	172.5	208	208	208	208	208	208	208	208	208
A n g l e s	175.0	209	209	209	209	209	209	209	209	209
	177.5	209	209	209	209	209	209	209	209	209
	180.0	209	209	209	209	209	209	209	209	209



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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 A n g l e s	0.0	196	196	196	196	196	196	196	196	196
	2.5	196	196	196	196	196	196	196	196	196
	5.0	196	196	196	196	196	196	196	196	196
	7.5	196	196	196	196	196	196	196	196	196
	10.0	196	196	196	196	196	196	196	196	196
	12.5	196	196	196	196	196	196	195	195	195
	15.0	196	196	196	196	196	195	195	194	194
	17.5	196	196	196	196	195	195	194	194	193
	20.0	196	196	196	196	195	194	193	193	192
	22.5	196	196	196	195	195	194	193	192	191
	25.0	196	196	196	195	194	193	192	191	190
	27.5	196	196	195	194	194	193	191	190	188
	30.0	196	196	195	194	193	192	190	188	186
	32.5	196	195	195	194	193	191	189	186	184
	35.0	195	195	194	193	192	190	187	184	182
	37.5	195	195	194	193	191	189	186	183	180
	40.0	195	195	194	192	190	187	184	181	177
	42.5	195	195	194	192	189	186	183	179	174
	45.0	195	195	193	191	188	185	181	177	172
	47.5	195	195	193	190	188	184	179	174	169
	50.0	195	195	193	190	187	182	178	172	166
	52.5	196	195	193	190	186	181	176	170	163
	55.0	196	195	193	189	185	180	174	167	160
	57.5	196	194	192	189	184	179	173	165	157
	60.0	196	194	192	188	184	178	171	163	154
	62.5	196	194	192	188	183	177	169	160	152
	65.0	196	194	192	188	182	176	167	158	149
	67.5	196	194	192	187	182	175	166	157	147
	70.0	196	195	192	187	181	174	165	155	144
	72.5	197	195	191	187	181	173	163	153	141
	75.0	197	195	191	186	180	172	162	152	139
	77.5	197	195	191	186	180	171	162	150	138
	80.0	197	195	191	186	180	171	161	149	137
	82.5	197	195	191	186	180	171	160	149	136
	85.0	198	196	192	186	180	171	160	148	135
	87.5	198	196	192	186	180	171	160	148	135
	90.0	198	196	192	186	180	171	160	148	135
	92.5	198	196	192	186	180	171	161	148	136
	95.0	199	197	193	187	181	172	161	149	136
	97.5	199	197	193	187	181	172	162	150	138
	100.0	199	197	194	188	182	173	163	152	139
	102.5	200	198	194	189	182	174	165	153	141
	105.0	200	198	195	189	183	175	166	155	143
	107.5	201	199	195	190	184	176	167	157	146
	110.0	201	199	196	191	185	178	169	159	148
	112.5	201	200	196	192	186	179	171	162	151
	115.0	202	200	197	193	187	181	173	164	154
	117.5	202	200	198	194	189	182	175	167	158
	120.0	203	201	198	195	190	184	177	170	161
	122.5	203	201	199	196	191	186	180	172	164
	125.0	203	202	200	197	192	188	182	175	168
	127.5	204	202	201	198	193	189	184	178	171
	130.0	204	203	201	199	195	191	186	181	175
	132.5	205	203	202	200	196	192	188	183	178



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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
135.0	205	204	203	200	198	194	190	186	181	176
137.5	205	204	203	201	199	195	192	188	184	180
140.0	205	205	204	202	200	197	194	191	187	184
142.5	206	205	204	203	201	199	196	193	190	187
145.0	206	206	205	204	202	200	198	195	193	190
147.5	206	206	205	204	203	201	199	197	195	193
150.0	206	206	206	205	204	202	201	199	197	195
152.5	207	207	206	205	205	204	202	201	199	198
155.0	207	207	207	206	205	205	204	202	201	200
157.5	207	207	207	206	206	205	205	204	203	202
160.0	207	207	207	207	206	206	206	205	205	204
162.5	207	207	207	207	207	207	206	206	206	205
165.0	208	208	208	208	207	207	207	207	207	206
167.5	208	208	208	208	208	208	207	207	207	207
170.0	208	208	208	208	208	208	208	208	208	208
172.5	208	208	208	208	208	208	208	208	208	208
175.0	209	209	209	209	209	209	209	209	209	209
177.5	209	209	209	209	209	209	209	209	209	209
180.0	209	209	209	209	209	209	209	209	209	209

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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	196	196	196	196	196	196
	2.5	196	196	196	196	196	196
	5.0	196	196	196	196	196	196
	7.5	196	196	196	196	196	196
	10.0	196	195	195	195	195	195
	12.5	195	194	194	194	194	194
	15.0	194	194	193	193	193	193
	17.5	193	192	192	191	191	191
	20.0	191	191	190	189	189	189
	22.5	190	189	188	187	186	186
	25.0	187	186	185	184	184	184
	27.5	185	184	183	181	180	180
	30.0	182	181	179	178	176	176
	32.5	180	177	175	173	172	172
	35.0	176	174	172	170	167	167
	37.5	173	170	167	165	162	162
	40.0	169	166	163	160	157	157
	42.5	165	161	158	155	151	151
	45.0	162	157	153	150	146	145
A n g l e s	47.5	158	152	148	144	139	138
	50.0	153	148	142	137	133	132
	52.5	149	143	136	132	126	125
	55.0	145	137	131	126	119	118
	57.5	140	132	125	119	111	110
	60.0	136	127	119	112	104	103
	62.5	131	122	114	106	96	95
	65.0	127	117	108	100	89	87
	67.5	124	113	103	93	86	81
	70.0	120	109	97	87	79	74
	72.5	117	105	92	81	72	66
	75.0	114	101	88	75	66	59
	77.5	111	98	84	71	60	51
	80.0	109	95	80	66	54	44
	82.5	108	93	77	63	49	38
	85.0	107	91	75	60	45	32
	87.5	106	90	74	58	43	28
	90.0	106	90	74	58	42	27
	92.5	107	91	75	59	44	29
	95.0	108	93	77	61	47	34
	97.5	109	95	79	65	52	40
	100.0	112	98	83	70	57	47
	102.5	114	101	87	75	63	54
	105.0	118	105	92	80	70	63
	107.5	122	109	98	86	77	71
	110.0	126	114	104	93	84	79
	112.5	130	119	109	100	92	87
	115.0	135	124	115	106	100	96
	117.5	139	130	121	113	107	104
	120.0	143	135	127	120	115	112
	122.5	148	140	133	127	123	120
	125.0	153	145	139	134	130	128
	127.5	158	151	145	140	137	135
	130.0	163	157	151	147	144	142
	132.5	167	162	157	153	150	149



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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	171	167	163	160	157	155
	137.5	176	172	168	166	164	162
	140.0	180	177	173	171	169	168
	142.5	184	181	179	176	175	174
	145.0	187	185	183	181	180	179
	147.5	191	189	187	186	185	184
	150.0	194	192	191	189	189	188
	152.5	196	195	194	193	192	192
	155.0	199	198	197	196	196	196
	157.5	201	201	200	199	199	199
	160.0	203	203	202	202	202	202
	162.5	205	205	204	204	204	204
	165.0	206	206	206	206	206	206
	167.5	207	207	207	207	207	207
	170.0	208	208	208	208	208	208
	172.5	208	208	208	208	208	208
A n g l e s	175.0	209	209	209	209	209	209
	177.5	209	209	209	209	209	209
	180.0	209	209	209	209	209	209