
Nata

LumCAT: 3-1698-N

Luminaire: 92.70.045.00+92.70.089.00

Report No: NT2018041315

Test No: nata-0100

LampCAT: LUXEON COB 1208

Lamp flux(lm): 2587.0

Number of Lamps: 1

Length(mm): 79

Phm Type: C

Voltage(V): 34.8000

Current(A): 0.5900

Power (W): 20.5320

PF: 0.0000

Ballast type: DC

Width(mm): 79

Height(mm): 0

Photometric Results

Lumens(lm): 2087.17

Efficiency(%): 80.68%

Lumens(lm)/Power(W): 105.05

Central intensity(cd): 11977.520

Maximum intensity(cd): 11977.520

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=18.6

[C90/270]Total=18.6

Field angle(10%Imax): [C0/180]Total=38.0

[C90/270]Total=38.0

Maximum s/h(1/2): C0_180=0.32 C90_270=0.32

Maximum s/h(1/4): C0_180=0.33 C90_270=0.33

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 83.37%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.312%

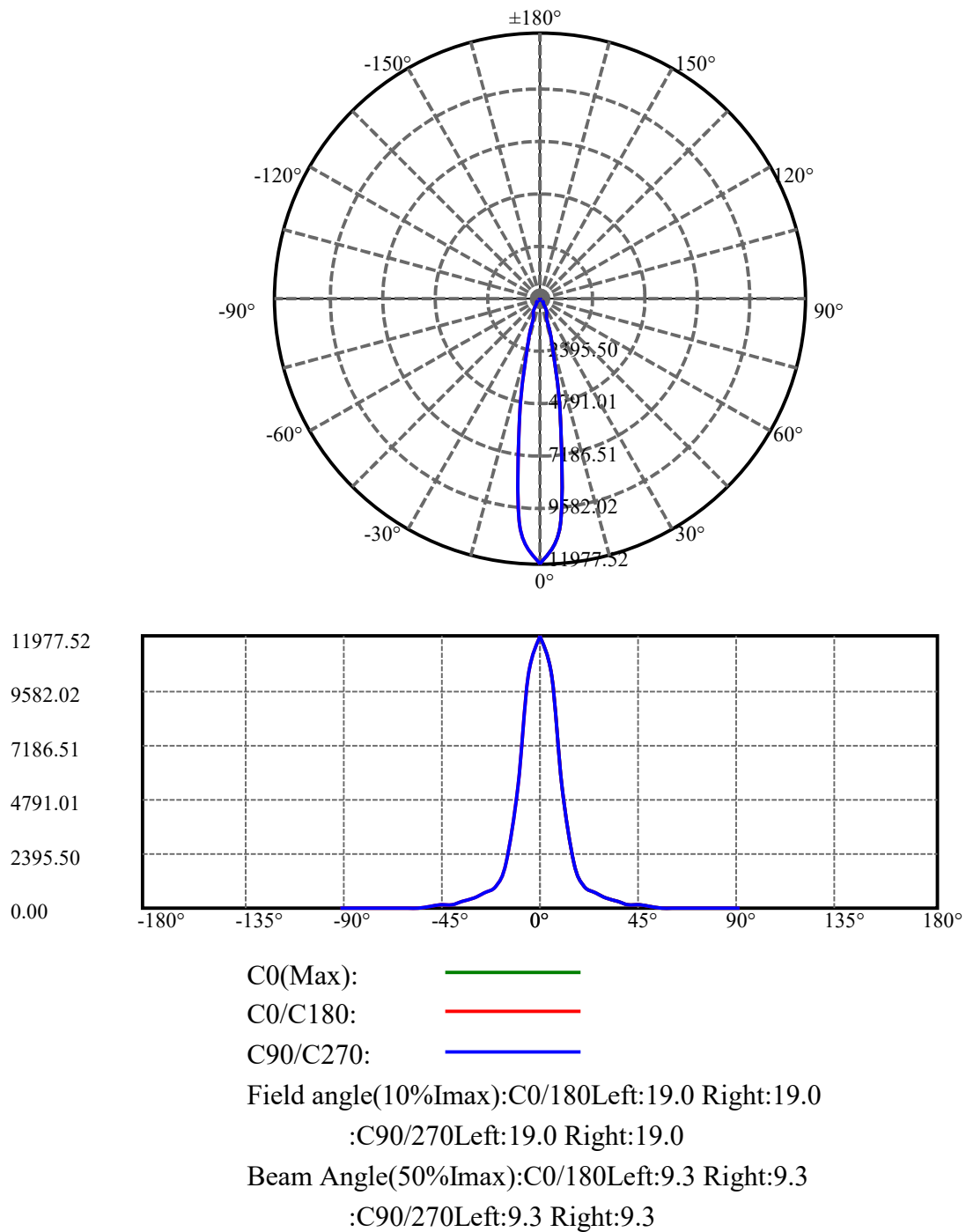
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	11977.520	71.628	71.628	2.769%	3.432%
5.0	10225.694	488.515	560.143	18.883%	26.837%
10.0	5325.881	506.934	1067.077	19.595%	51.125%
15.0	2031.994	288.276	1355.353	11.143%	64.937%
20.0	993.348	186.227	1541.58	7.199%	73.860%
25.0	643.809	149.140	1690.72	5.765%	81.005%
30.0	426.026	116.761	1807.48	4.513%	86.599%
35.0	273.100	85.862	1893.343	3.319%	90.713%
40.0	183.159	64.533	1957.876	2.495%	93.805%
45.0	118.970	46.112	2003.988	1.782%	96.014%
50.0	68.119	28.603	2032.591	1.106%	97.385%
55.0	33.598	15.086	2047.677	.583%	98.108%
60.0	16.895	8.020	2055.697	.310%	98.492%
65.0	13.131	6.523	2062.22	.252%	98.804%
70.0	11.885	6.122	2068.342	.237%	99.098%
75.0	11.039	5.845	2074.187	.226%	99.378%
80.0	10.647	5.747	2079.934	.222%	99.653%
85.0	9.263	5.058	2084.992	.196%	99.896%
90.0	7.956	2.180	2087.172	.084%	100.000%

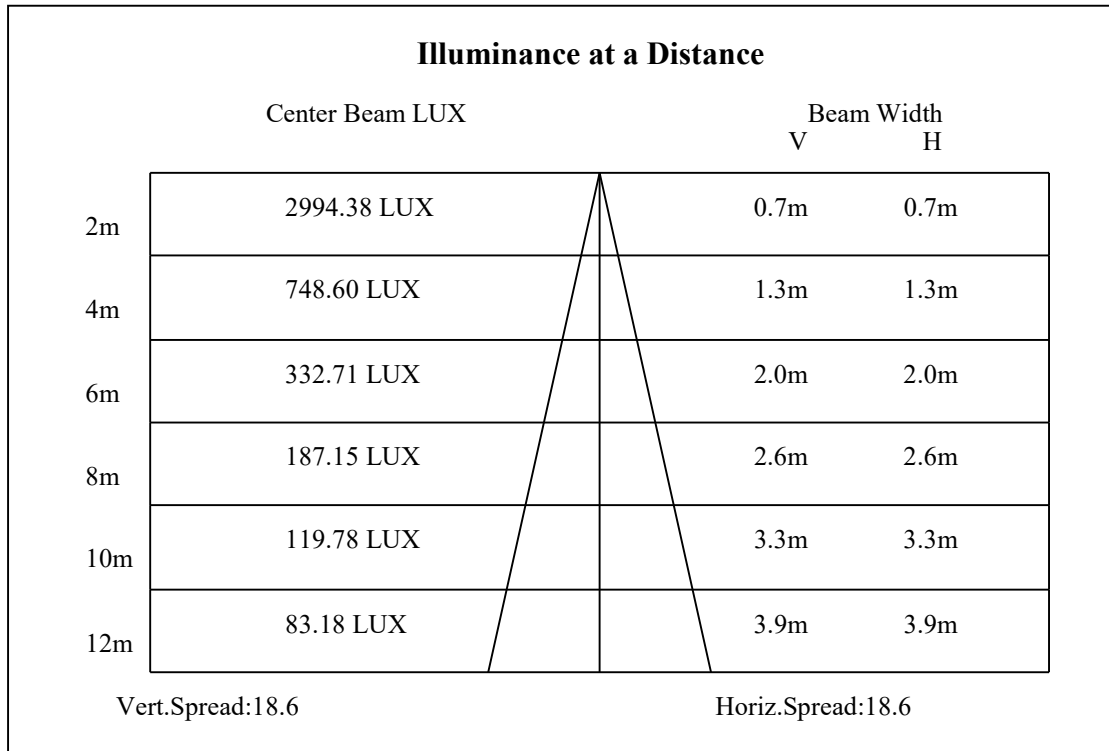
ZONAL LUMEN SUMMARY

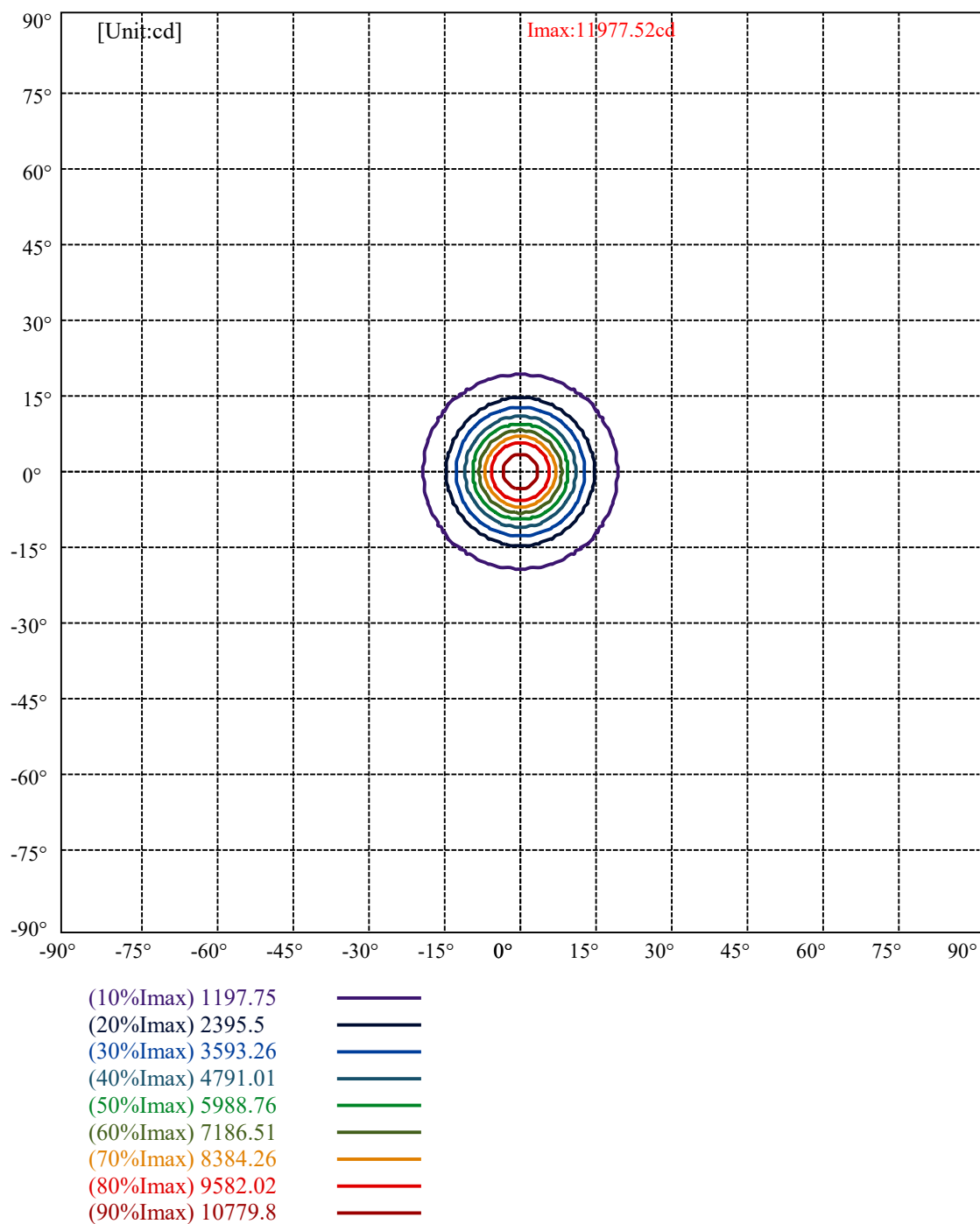
Zone	Lumens	%Lamp	%Fixt
0-30	1807.48	69.87%	86.60%
0-40	1957.88	75.68%	93.81%
0-60	2055.70	79.46%	98.49%
0-90	2084.99	80.59%	99.90%
0-120	2084.99	80.59%	99.90%
0-180	2087.17	80.68%	100.00%
60-90	37.32	1.44%	1.79%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-24.30	1669.74	64.54%	80.00%

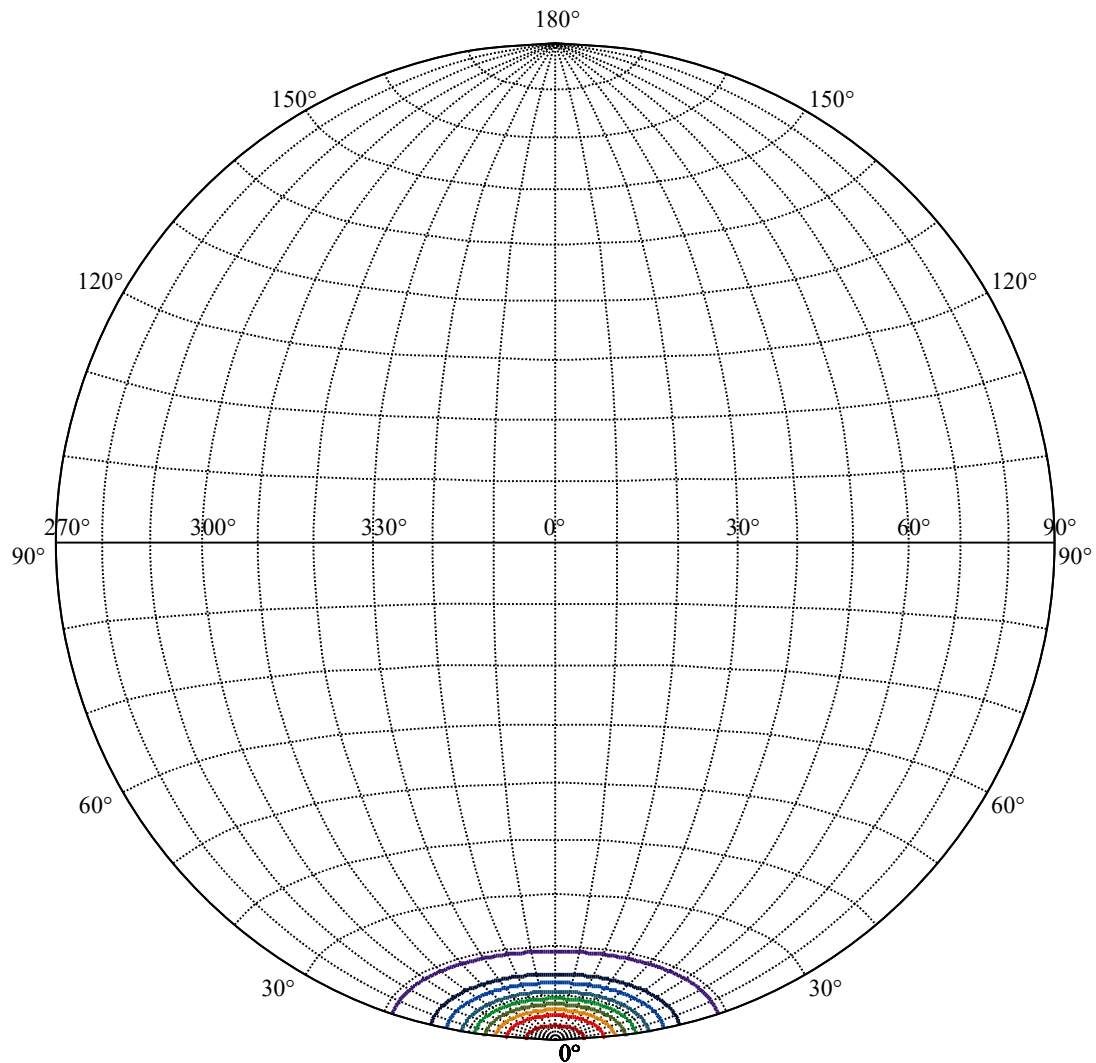
ZONAL LUMEN SUMMARY

0-10	1067.08
10-20	474.50
20-30	265.90
30-40	150.40
40-50	74.71
50-60	23.11
60-70	12.65
70-80	11.59
80-90	5.06
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00









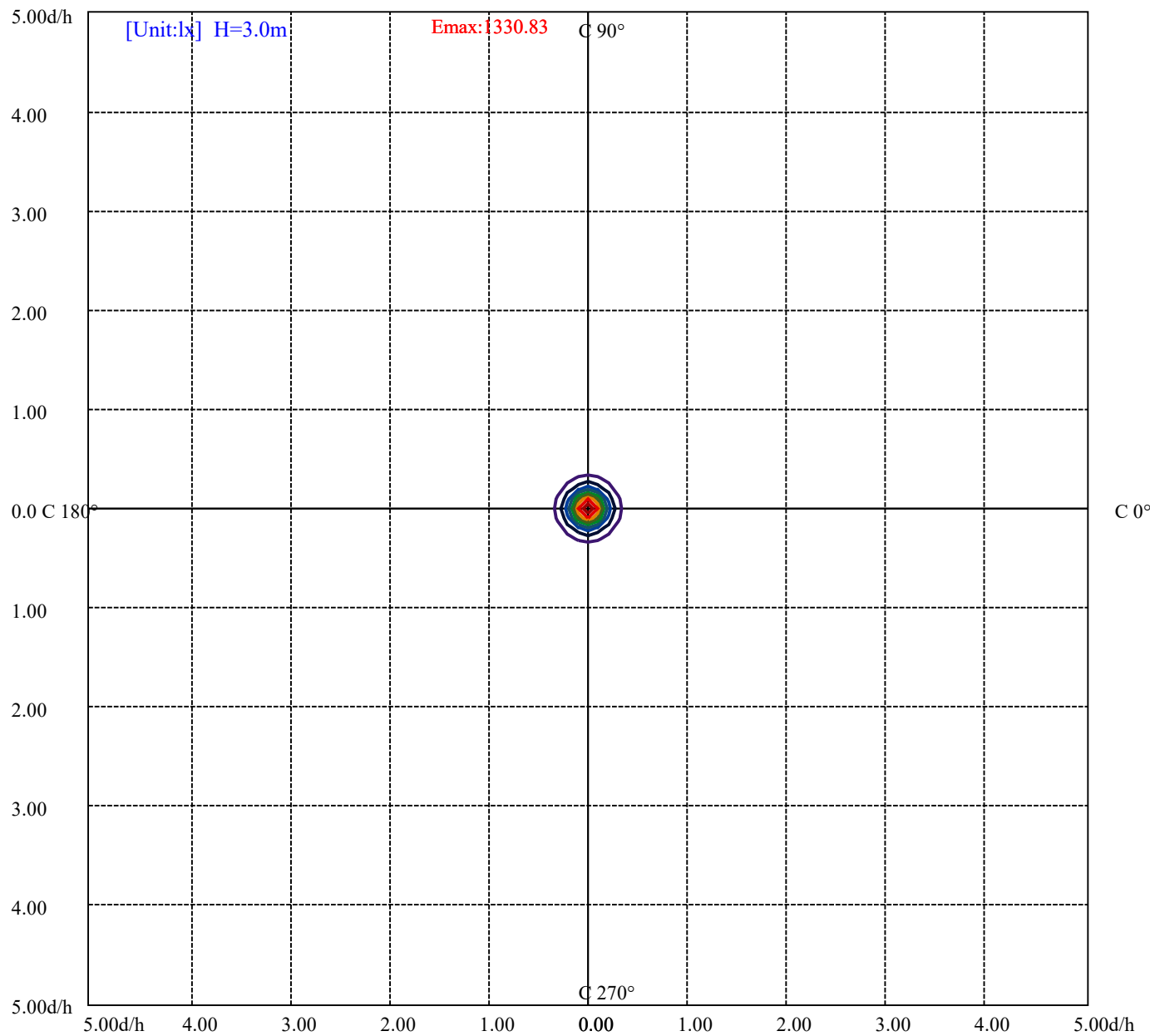
House

[Unit:cd]

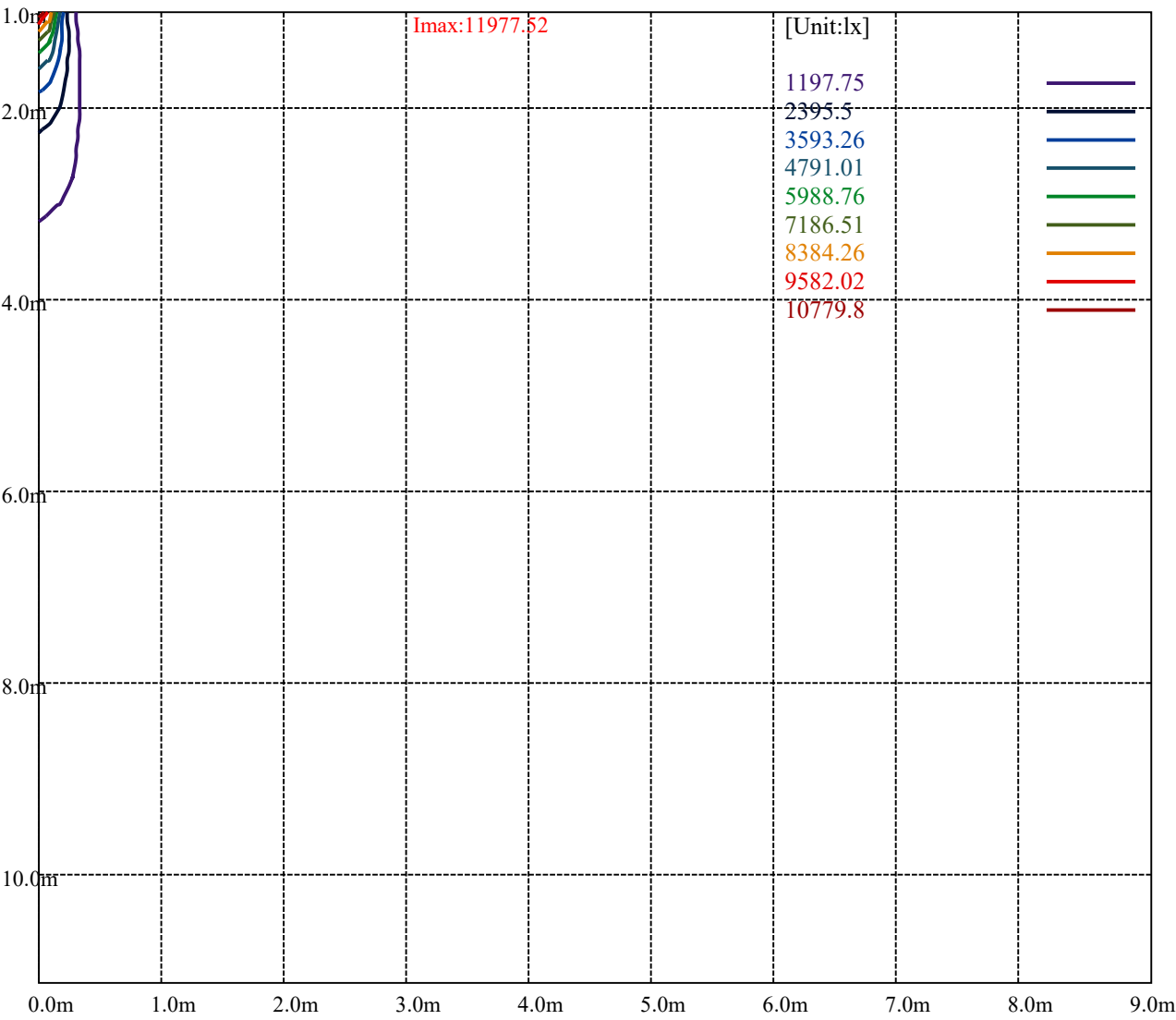
Road

Imax:11977.52

(10%Imax)	1197.75	—
(20%Imax)	2395.5	—
(30%Imax)	3593.26	—
(40%Imax)	4791.01	—
(50%Imax)	5988.76	—
(60%Imax)	7186.51	—
(70%Imax)	8384.26	—
(80%Imax)	9582.02	—
(90%Imax)	10779.8	—



(10%Emax)	133.0833	
(20%Emax)	266.1656	
(30%Emax)	399.2489	
(40%Emax)	532.3323	
(50%Emax)	665.4144	
(60%Emax)	798.4978	
(70%Emax)	931.5812	
(80%Emax)	1064.663	
(90%Emax)	1197.745	



Luminance Table

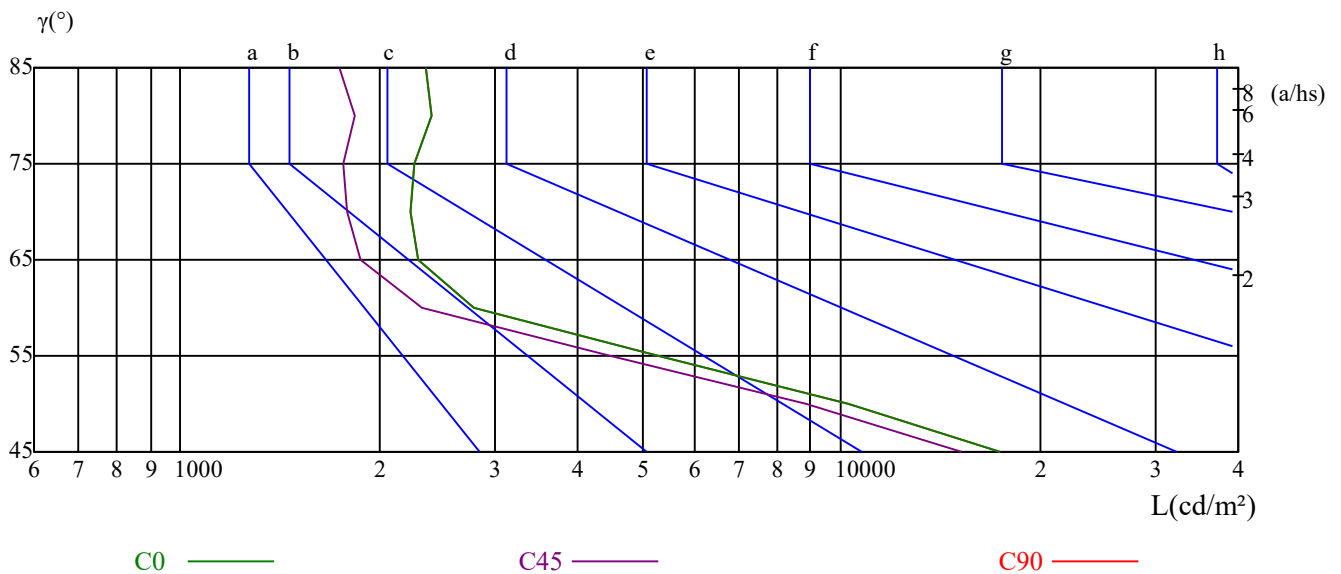
γ	45	50	55	60	65	70	75	80	85
C0	17457	10299	5281	2787	2297	2231	2254	2404	2358
C45	15233	8856	4471	2320	1878	1788	1765	1831	1738
C90	17457	10299	5281	2787	2297	2231	2254	2404	2358

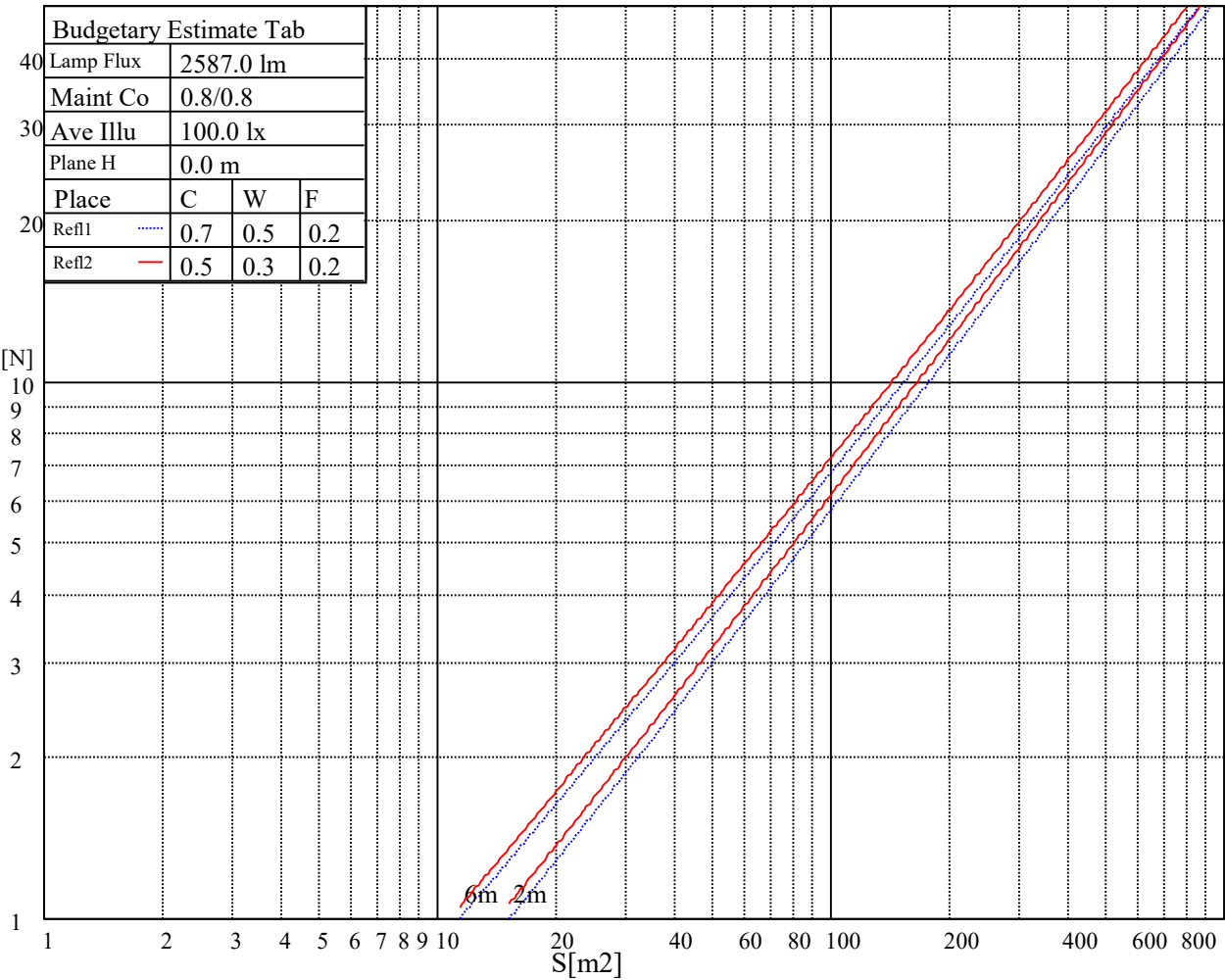
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4978	4978	4978	6834	6834	6834	17030	17030	17030

Glare Table

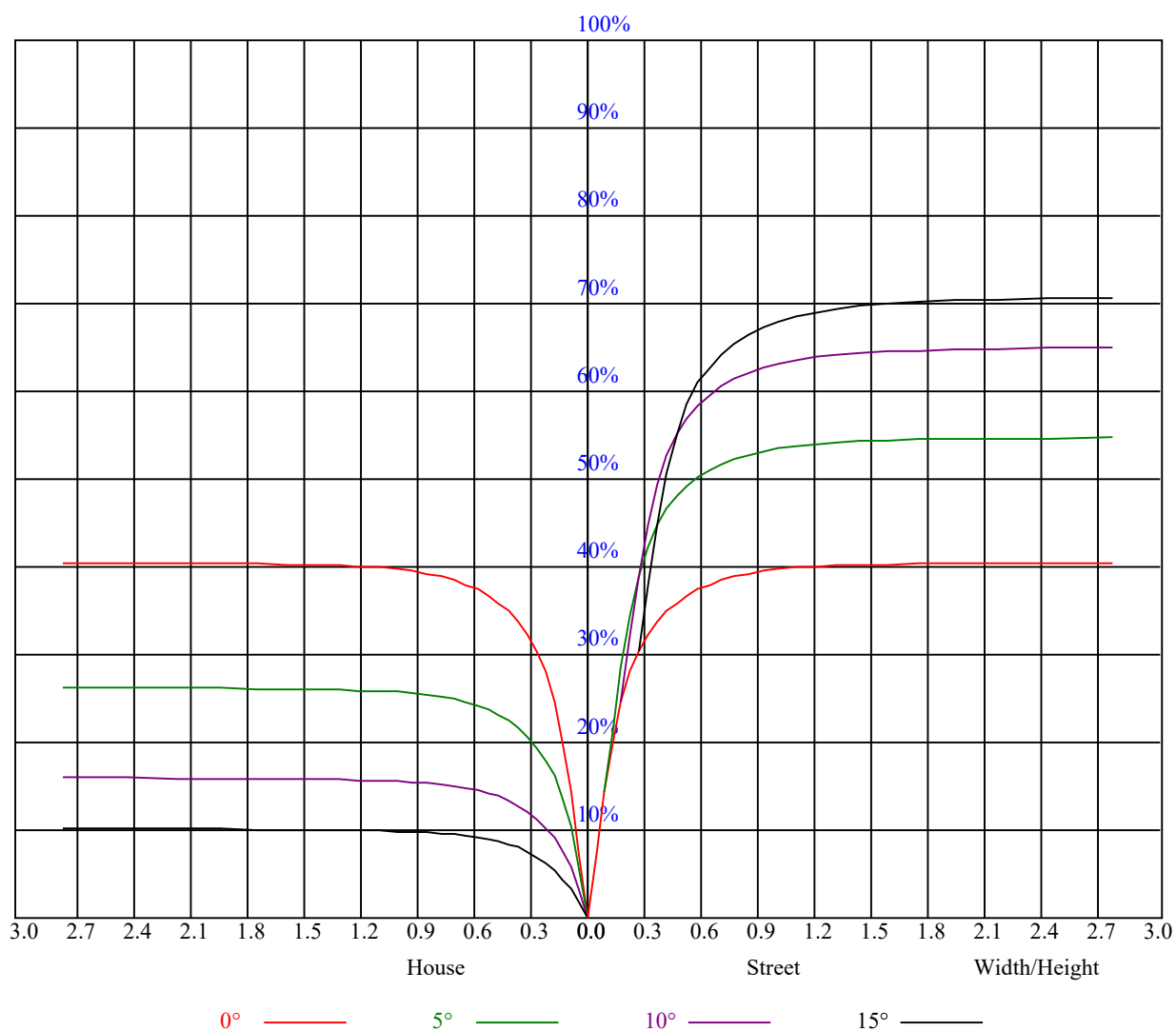
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





RHOC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	0.99	0.99	0.99	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.85	0.85	0.85	0.83
1	0.90	0.88	0.85	0.88	0.86	0.84	0.85	0.83	0.81	0.82	0.80	0.79	0.79	0.78	0.76	0.75
2	0.86	0.82	0.79	0.84	0.81	0.78	0.81	0.79	0.77	0.79	0.77	0.75	0.77	0.75	0.73	0.72
3	0.82	0.78	0.75	0.80	0.77	0.74	0.78	0.75	0.73	0.76	0.74	0.72	0.74	0.72	0.71	0.69
4	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.72	0.70	0.74	0.71	0.69	0.73	0.70	0.68	0.67
5	0.75	0.71	0.68	0.75	0.71	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.65
6	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.63
7	0.70	0.66	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.67	0.65	0.63	0.62
8	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.66	0.63	0.61	0.66	0.63	0.61	0.60
9	0.67	0.63	0.60	0.66	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.64	0.62	0.60	0.59
10	0.65	0.61	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.63	0.61	0.59	0.63	0.60	0.58	0.58



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Intensity data(cd)										Appendix Page: 14 Total:14	
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	11963.76	11176.45	7113.29	2929.00	1130.31	743.26	483.95	305.01	205.75		
45.0	11936.23	11033.30	6623.28	2818.89	1117.64	706.37	467.98	291.25	198.31		
90.0	11958.25	9555.59	4361.57	1483.77	919.00	591.31	378.18	245.72	170.01		
135.0	12051.85	9910.15	4740.36	1554.79	930.45	614.43	414.02	281.34	174.09		
180.0	11963.76	9150.37	3911.76	1249.23	856.40	566.92	362.05	232.06	161.32		
225.0	11936.23	9417.95	3819.81	1459.55	892.35	561.08	384.68	244.89	168.53		
270.0	11958.25	10906.67	5990.14	2813.38	1066.99	684.35	458.07	289.60	194.40		
315.0	12051.85	10655.07	6046.84	1947.34	1033.63	682.75	459.28	294.94	192.86		
360.0	11963.76	11176.45	7113.29	2929.00	1130.31	743.26	483.95	305.01	205.75		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	136.87	81.65	43.11	20.37	13.60	12.28	11.34	10.79	9.86		
45.0	130.37	76.47	39.20	18.33	13.49	12.17	11.18	10.90	9.52		
90.0	107.86	63.04	29.57	15.31	12.72	11.56	10.74	10.57	8.97		
135.0	108.74	59.85	28.85	15.42	12.99	11.73	11.07	10.68	9.08		
180.0	102.96	57.04	26.65	15.09	12.88	11.73	11.01	10.85	9.03		
225.0	108.19	59.52	27.47	15.20	12.88	11.67	10.90	10.52	8.92		
270.0	130.76	76.80	38.81	18.11	13.27	11.95	11.01	10.52	9.36		
315.0	126.02	70.58	35.13	17.34	13.21	12.00	11.07	10.35	9.36		
360.0	136.87	81.65	43.11	20.37	13.60	12.28	11.34	10.79	9.86		
C/γ(°)	90.0										
0.0	8.15										
45.0	7.87										
90.0	7.87										
135.0	7.98										
180.0	8.04										
225.0	7.87										
270.0	7.87										
315.0	7.98										
360.0	8.15										