
Nata

LumCAT: 3-1548-A3
Luminaire: TE 2213407-1+92.76.365.00
Report No: GC2015050811
Test No: NT-0010
LampCAT: OSRAM OPTO SOLERIQ S19
Lamp flux(lm): 3679.0
Number of Lamps: 1
Length(mm): 79
Phm Type: C

Voltage(V): 48.2000
Current(A): 0.7100
Power (W): 34.2200
PF: 0.0000
Ballast type: DC
Width(mm): 79
Height(mm): 0

Photometric Results

Lumens(lm): 3463.46
Efficiency(%): 94.14%
Lumens(lm)/Power(W): 101.21
Central intensity(cd): 20757.600
Maximum intensity(cd): 20757.600
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=16.7
[C90/270]Total=16.7
Field angle(10%Imax): [C0/180]Total=36.4
[C90/270]Total=36.4
Maximum s/h(1/2): C0_180=0.29 C90_270=0.29
Maximum s/h(1/4): C0_180=0.30 C90_270=0.30
Up flux rate of lamp(%): 1.82%
Down flux rate of lamp(%): 92.32%
Up flux rate of LUM(%): 1.94%
Down flux rate of LUM(%): 98.06%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.870%

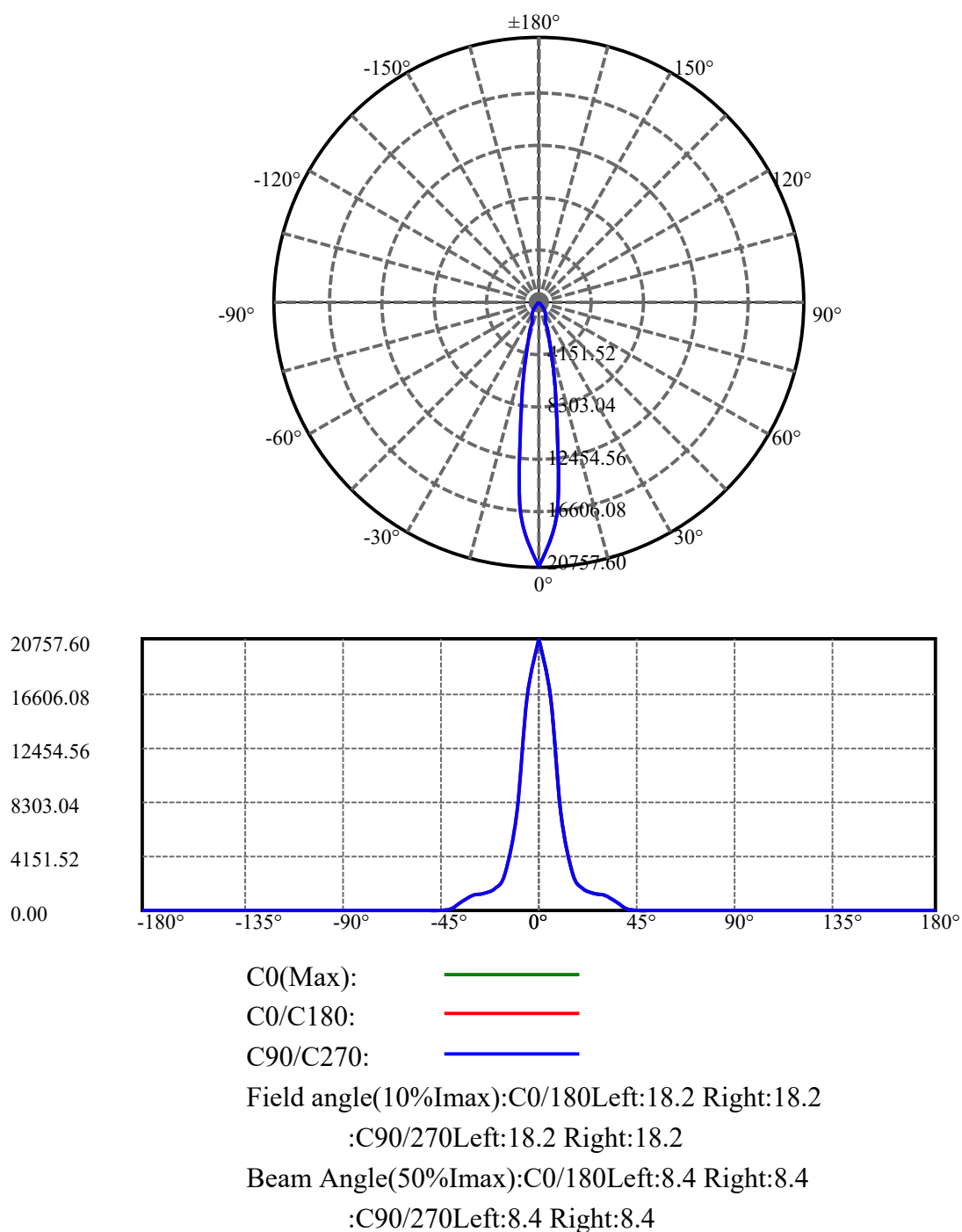
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	20757.598	0.000	0	.000%	.000%
5.0	16300.729	443.022	443.022	12.042%	12.791%
10.0	7504.068	851.573	1294.594	23.147%	37.379%
15.0	2831.230	613.083	1907.677	16.664%	55.080%
20.0	1658.650	370.029	2277.706	10.058%	65.764%
25.0	1327.633	313.206	2590.912	8.513%	74.807%
30.0	1125.932	310.501	2901.413	8.440%	83.772%
35.0	674.251	265.090	3166.503	7.205%	91.426%
40.0	167.418	140.426	3306.929	3.817%	95.481%
45.0	13.463	33.492	3340.42	.910%	96.448%
50.0	11.148	4.973	3345.393	.135%	96.591%
55.0	10.659	4.741	3350.135	.129%	96.728%
60.0	10.568	4.906	3355.041	.133%	96.870%
65.0	11.099	5.267	3360.308	.143%	97.022%
70.0	13.351	6.191	3366.499	.168%	97.201%
75.0	16.946	7.919	3374.419	.215%	97.429%
80.0	17.163	9.127	3383.545	.248%	97.693%
85.0	10.078	7.402	3390.947	.201%	97.906%
90.0	9.770	5.435	3396.382	.148%	98.063%
95.0	9.658	5.320	3401.701	.145%	98.217%
100.0	9.707	5.262	3406.964	.143%	98.369%
105.0	9.609	5.169	3412.132	.140%	98.518%
110.0	9.588	5.018	3417.15	.136%	98.663%
115.0	9.533	4.842	3421.992	.132%	98.803%
120.0	9.484	4.623	3426.615	.126%	98.936%
125.0	9.477	4.383	3430.997	.119%	99.063%
130.0	9.561	4.139	3435.137	.113%	99.182%
135.0	9.707	3.893	3439.03	.106%	99.295%
140.0	9.770	3.606	3442.636	.098%	99.399%
145.0	10.050	3.307	3445.943	.090%	99.494%
150.0	11.526	3.177	3449.121	.086%	99.586%
155.0	14.995	3.356	3452.477	.091%	99.683%
160.0	18.953	3.561	3456.037	.097%	99.786%
165.0	20.331	3.238	3459.275	.088%	99.879%
170.0	19.611	2.369	3461.644	.064%	99.948%
175.0	18.715	1.371	3463.015	.037%	99.987%
180.0	18.184	0.441	3463.456	.012%	100.000%

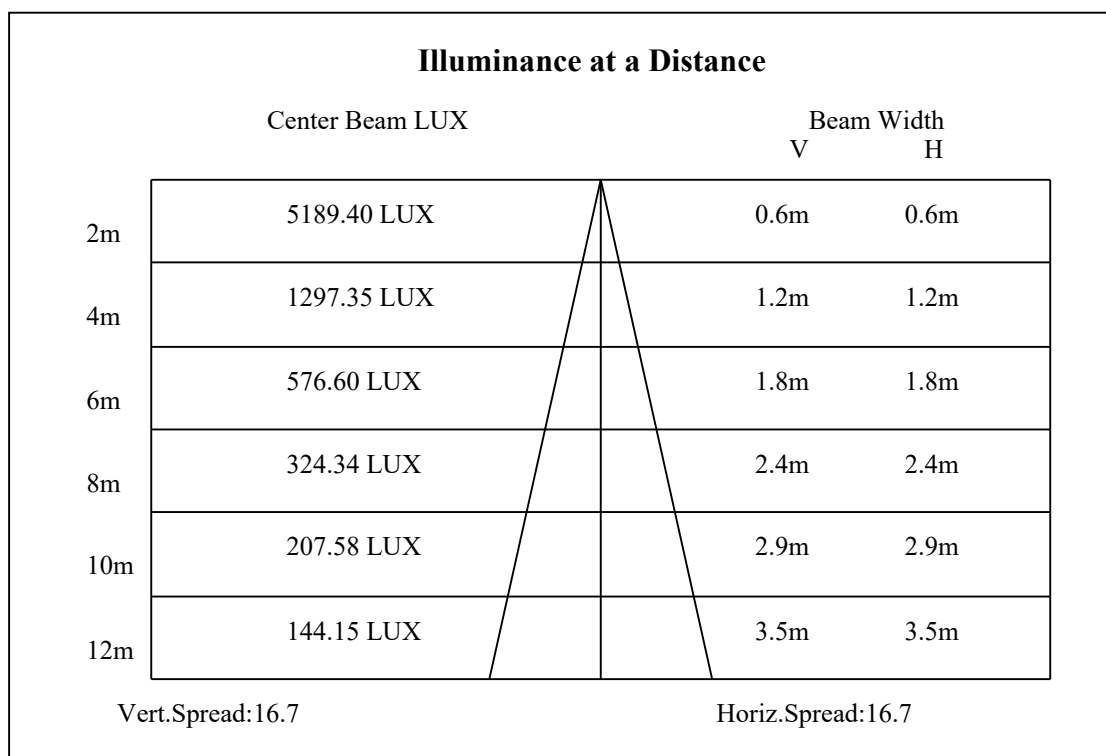
ZONAL LUMEN SUMMARY

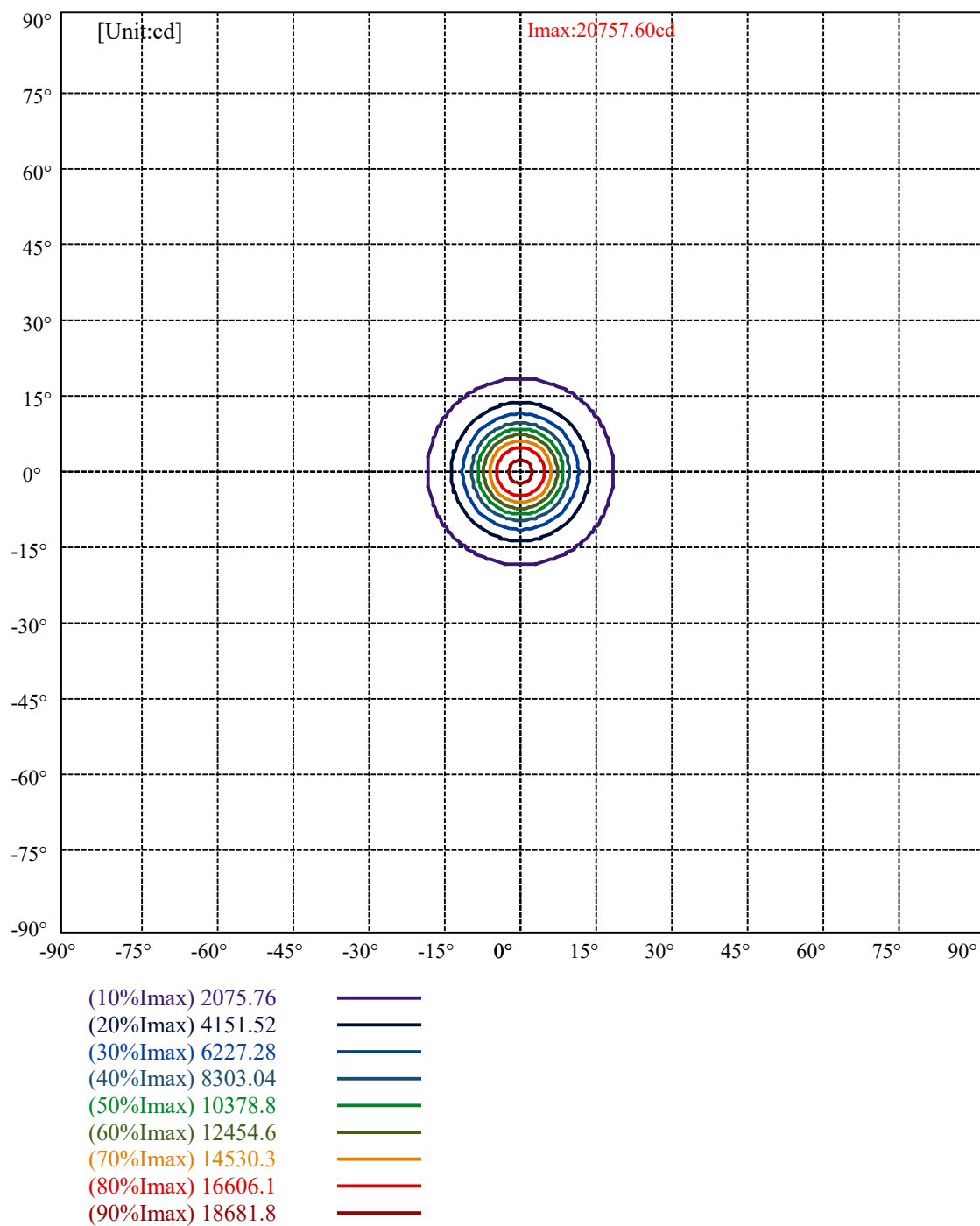
Zone	Lumens	%Lamp	%Fixt
0-30	2901.41	78.86%	83.77%
0-40	3306.93	89.89%	95.48%
0-60	3355.04	91.19%	96.87%
0-90	3396.38	92.32%	98.06%
0-120	3426.61	93.14%	98.94%
0-180	3463.46	94.14%	100.00%
60-90	46.25	1.26%	1.34%
90-120	35.67	0.97%	1.03%
90-130	44.19	1.20%	1.28%
90-150	58.17	1.58%	1.68%
90-180	72.07	1.96%	2.08%
0-27.90	2770.77	75.31%	80.00%

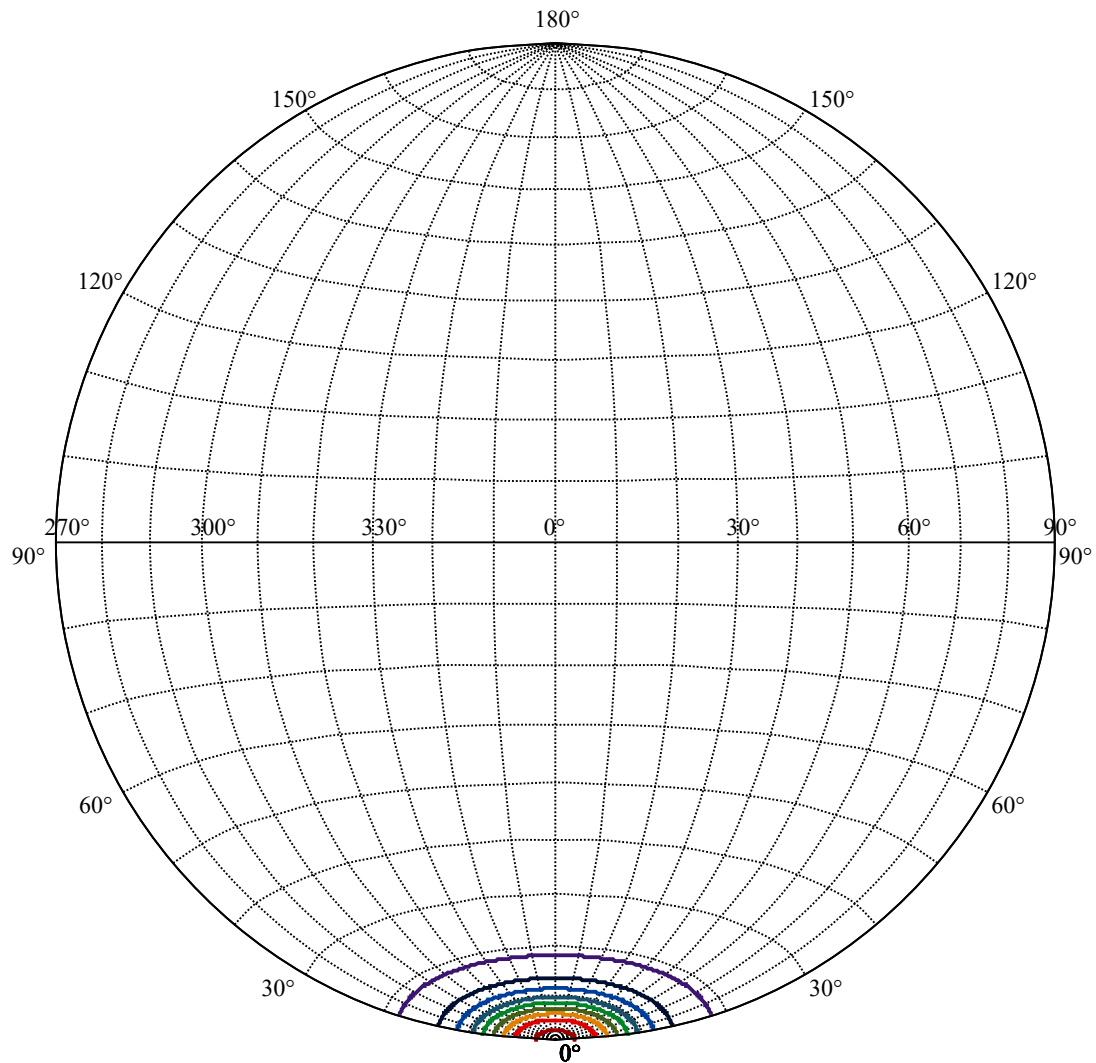
ZONAL LUMEN SUMMARY

0-10	1294.59
10-20	983.11
20-30	623.71
30-40	405.52
40-50	38.46
50-60	9.65
60-70	11.46
70-80	17.05
80-90	12.84
90-100	10.58
100-110	10.19
110-120	9.46
120-130	8.52
130-140	7.50
140-150	6.48
150-160	6.92
160-170	5.61
170-180	1.37









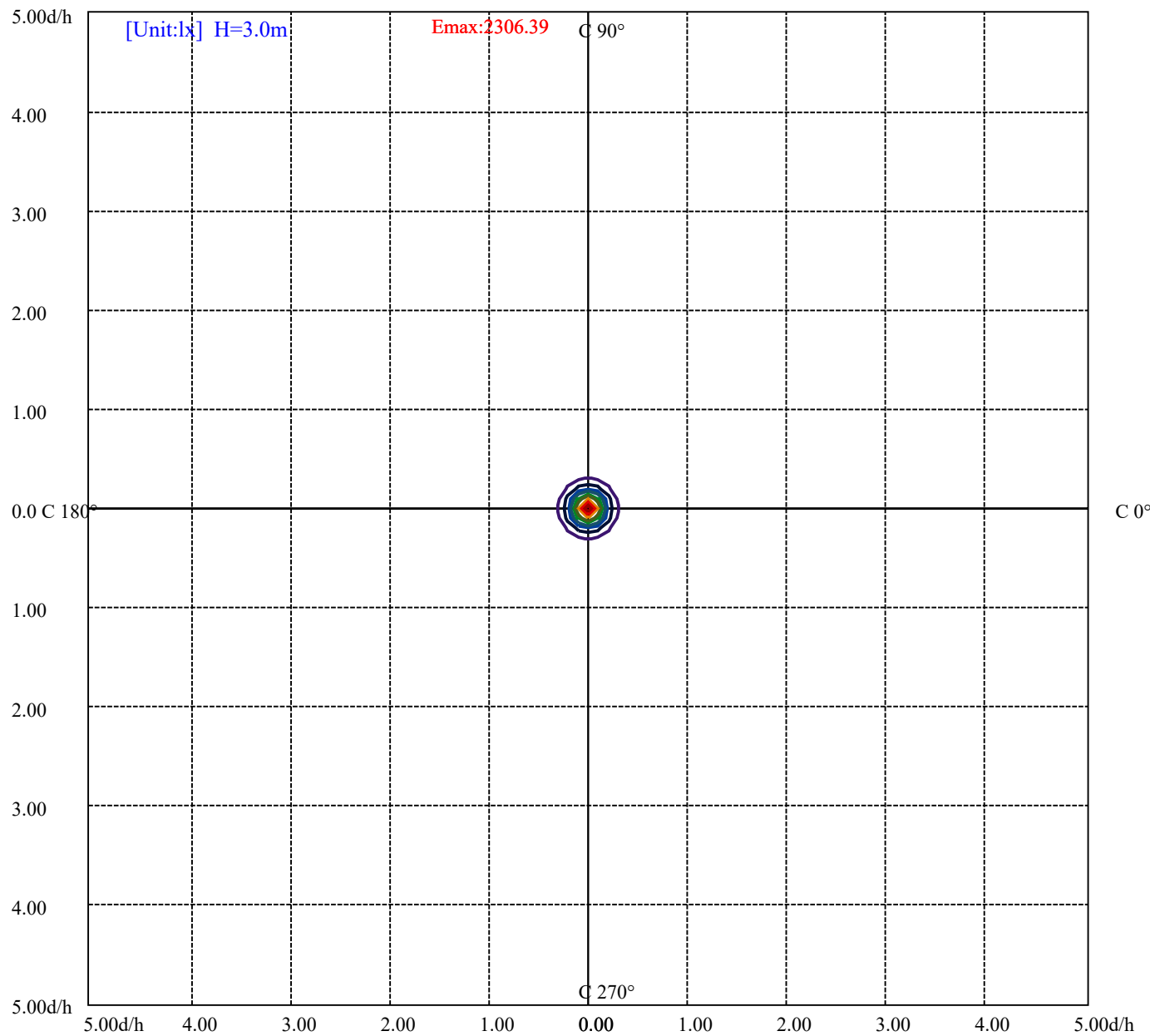
House

[Unit:cd]

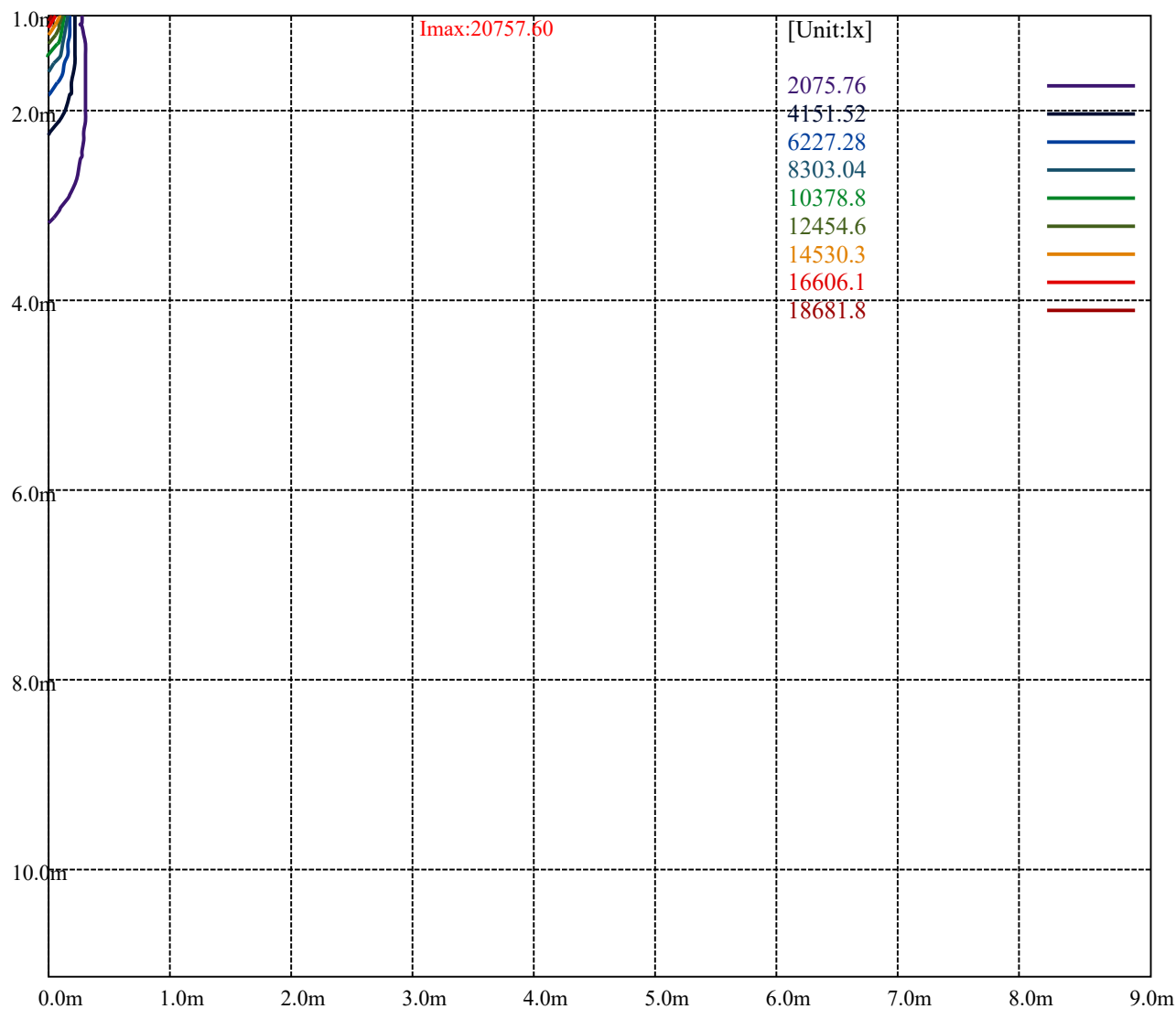
Road

Imax:20757.60

(10%Imax)	2075.76	—
(20%Imax)	4151.52	—
(30%Imax)	6227.28	—
(40%Imax)	8303.04	—
(50%Imax)	10378.8	—
(60%Imax)	12454.6	—
(70%Imax)	14530.3	—
(80%Imax)	16606.1	—
(90%Imax)	18681.8	—



(10%Emax)	230.6389	—
(20%Emax)	461.2767	—
(30%Emax)	691.9156	—
(40%Emax)	922.5544	—
(50%Emax)	1153.189	—
(60%Emax)	1383.833	—
(70%Emax)	1614.467	—
(80%Emax)	1845.111	—
(90%Emax)	2075.744	—



Luminance Table

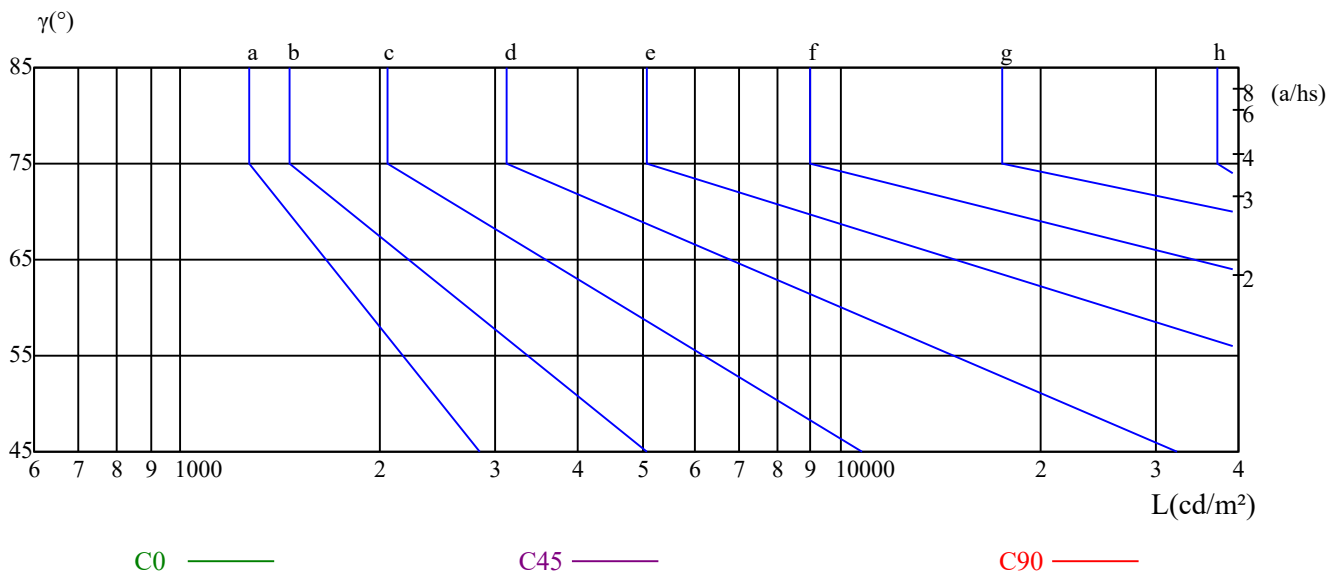
γ	45	50	55	60	65	70	75	80	85
C0	542	487	513	570	688	980	1541	2072	1828
C45	526	469	491	542	647	910	1404	1828	1521
C90	542	487	513	570	688	980	1541	2072	1828

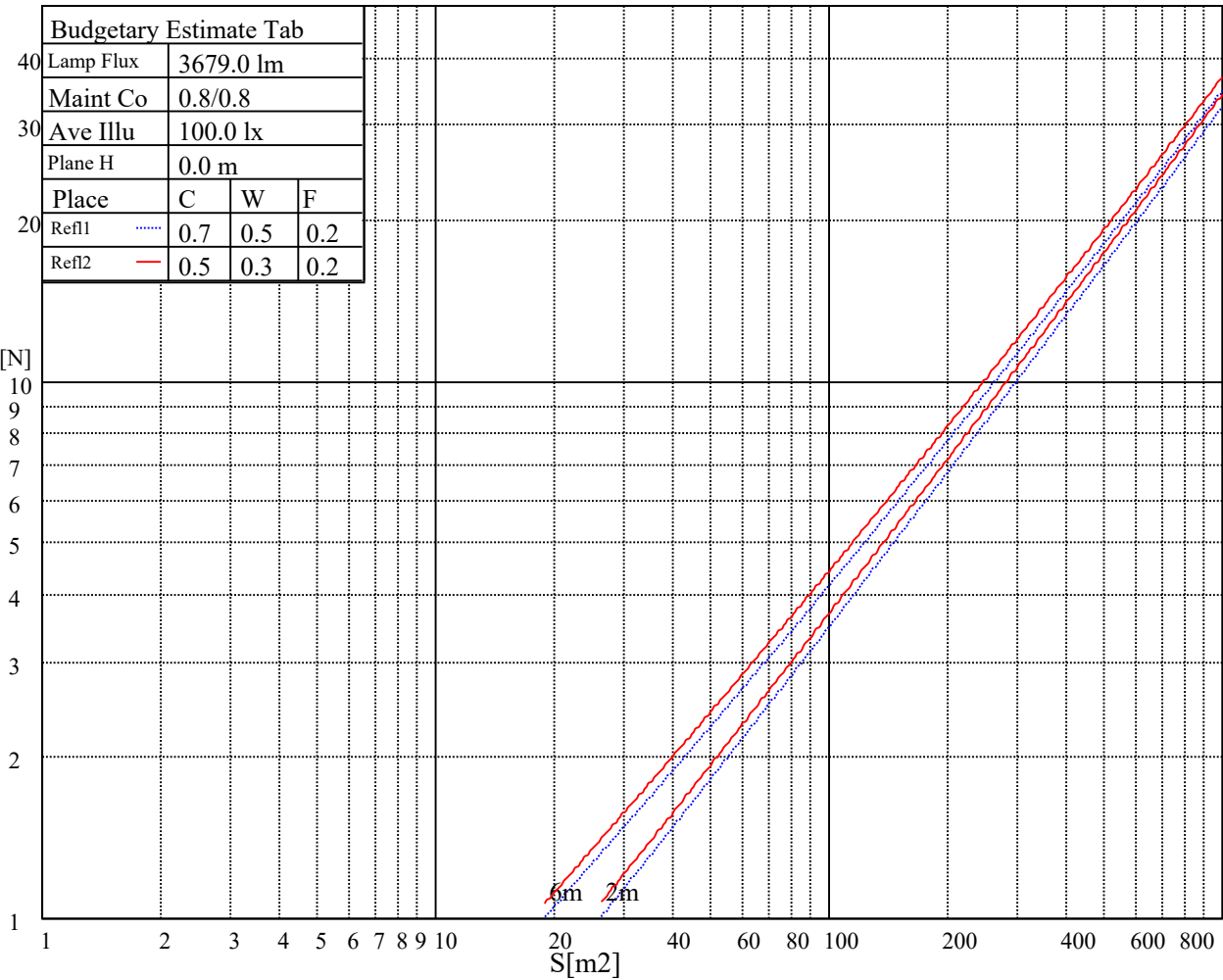
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
811	811	811	2021	2021	2021	3569	3569	3569

Glare Table

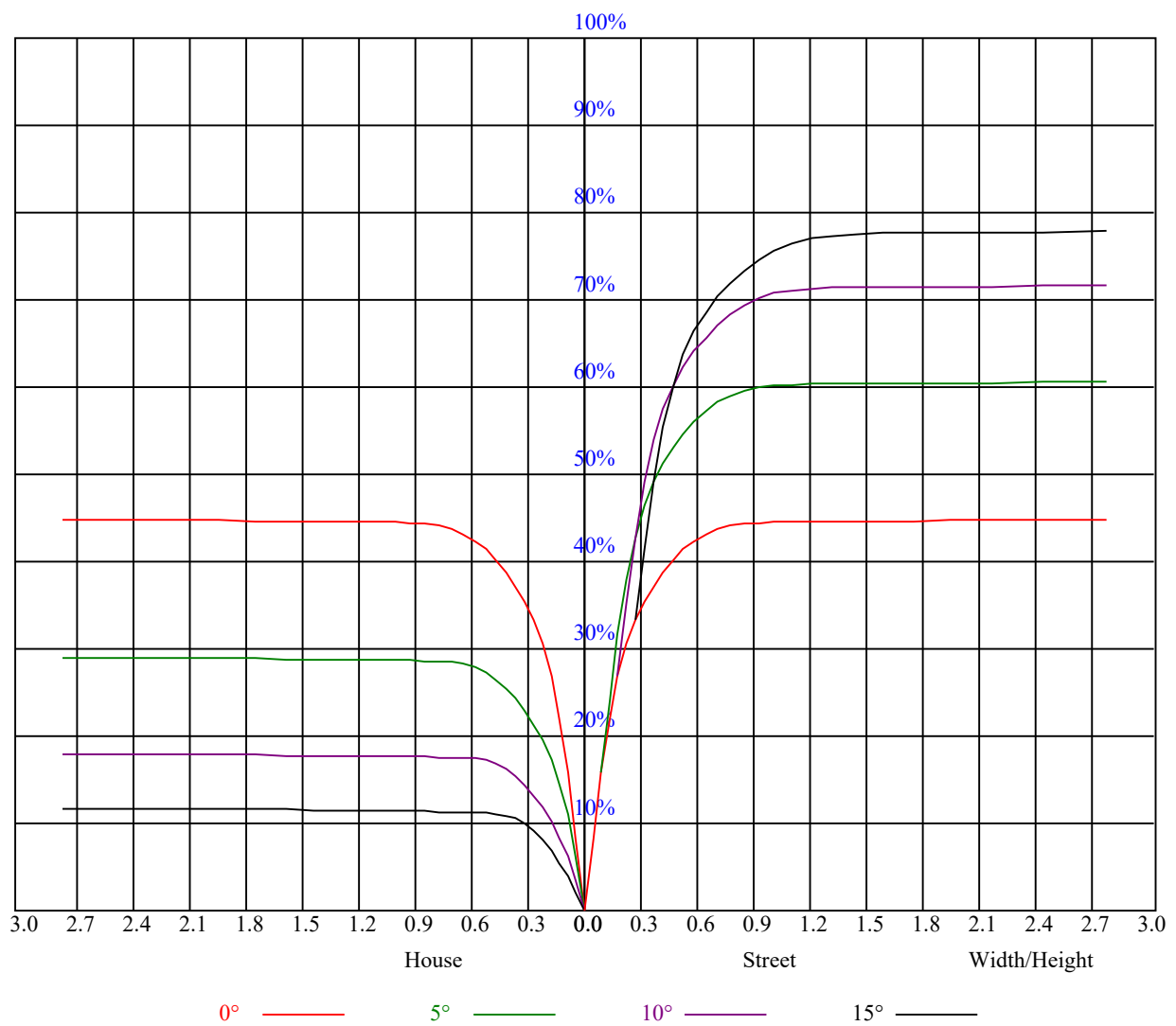
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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 RHOF=20 CU															
0	1.12	1.12	1.12	1.09	1.09	1.09	1.04	1.04	1.04	0.99	0.99	0.99	0.94	0.94	0.94	0.92
1	1.05	1.03	1.01	1.03	1.01	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.88
2	1.00	0.96	0.94	0.98	0.95	0.93	0.95	0.92	0.90	0.92	0.90	0.88	0.89	0.87	0.86	0.85
3	0.95	0.91	0.88	0.93	0.90	0.87	0.91	0.88	0.86	0.88	0.86	0.84	0.86	0.84	0.83	0.81
4	0.90	0.86	0.83	0.89	0.86	0.83	0.87	0.84	0.82	0.85	0.83	0.80	0.83	0.81	0.79	0.78
5	0.87	0.82	0.79	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.79	0.77	0.81	0.78	0.76	0.75
6	0.83	0.79	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.74	0.78	0.76	0.74	0.73
7	0.80	0.76	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
8	0.78	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
9	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
10	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.64



Nata 3-1548-E

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	20304.40	12365.04	4554.36	2020.37	1467.02	1247.69	1023.33	375.43	18.58		
45.0	21479.36	16667.62	7379.86	2836.69	1651.66	1324.91	1154.26	619.93	162.98		
90.0	21070.92	16645.24	6849.45	2610.09	1609.13	1318.19	1106.42	677.50	91.26		
135.0	20164.52	19660.97	11055.80	3636.78	1900.64	1394.28	1216.36	922.62	369.83		
180.0	20304.40	20052.62	10661.35	3869.53	1886.65	1414.43	1209.65	942.32	289.49		
225.0	21501.74	17417.36	7473.29	2667.72	1635.99	1327.70	1107.99	695.97	95.73		
270.0	21070.92	16527.75	7603.66	2892.64	1652.22	1328.82	1164.33	707.21	292.06		
315.0	20164.52	11069.23	4454.77	2116.04	1465.90	1265.04	1025.12	453.03	19.41		
360.0	20304.40	12365.04	4554.36	2020.37	1467.02	1247.69	1023.33	375.43	18.58		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	11.36	10.69	10.46	10.57	12.42	17.34	21.99	15.44	9.96		
45.0	12.53	11.19	10.85	10.80	11.41	15.27	21.26	21.93	10.18		
90.0	12.48	10.85	10.52	10.41	10.52	11.30	14.27	15.39	10.07		
135.0	16.00	11.13	10.69	10.41	10.41	10.46	11.41	14.71	10.13		
180.0	16.84	12.20	10.69	10.35	10.41	10.63	13.15	17.23	10.07		
225.0	12.92	11.02	10.63	10.46	10.74	12.42	15.95	17.85	9.96		
270.0	13.48	11.25	10.85	10.74	10.97	12.31	16.11	17.79	10.29		
315.0	12.09	10.85	10.57	10.80	11.92	17.06	21.43	16.95	9.96		
360.0	11.36	10.69	10.46	10.57	12.42	17.34	21.99	15.44	9.96		
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0		
0.0	9.57	9.68	9.62	9.46	9.46	9.46	9.40	9.46	9.62		
45.0	9.85	9.74	9.79	9.62	9.57	9.51	9.46	9.46	9.51		
90.0	9.68	9.68	9.79	9.68	9.62	9.51	9.46	9.46	9.51		
135.0	9.79	9.62	9.68	9.62	9.57	9.51	9.46	9.40	9.40		
180.0	9.68	9.46	9.51	9.46	9.46	9.40	9.34	9.29	9.29		
225.0	10.02	9.68	9.74	9.74	9.74	9.68	9.62	9.62	9.68		
270.0	9.90	9.74	9.85	9.74	9.74	9.68	9.62	9.62	9.74		
315.0	9.68	9.68	9.68	9.57	9.57	9.51	9.51	9.51	9.74		
360.0	9.57	9.68	9.62	9.46	9.46	9.46	9.40	9.46	9.62		
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0		
0.0	9.85	9.96	10.63	13.32	18.13	21.99	22.04	20.42	19.14		
45.0	9.57	9.62	9.96	11.58	15.27	18.91	20.09	19.75	19.47		
90.0	9.57	9.57	9.85	11.19	14.32	17.62	18.63	18.07	17.74		
135.0	9.51	9.46	9.51	10.13	12.42	15.89	17.85	17.96	17.46		
180.0	9.34	9.34	9.34	10.07	12.37	16.28	18.52	18.91	18.63		
225.0	9.90	10.07	10.29	11.75	15.67	20.81	23.05	21.99	20.37		
270.0	9.96	10.07	10.29	11.41	14.77	19.41	21.43	20.42	18.86		
315.0	9.96	10.07	10.52	12.76	17.01	20.70	21.04	19.36	18.07		
360.0	9.85	9.96	10.63	13.32	18.13	21.99	22.04	20.42	19.14		
C/γ(°)	180.0										
0.0	18.46										
45.0	19.36										
90.0	17.68										
135.0	17.23										
180.0	18.46										
225.0	19.36										
270.0	17.68										
315.0	17.23										
360.0	18.46										