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NATA

LumCAT: 4-1638-E	
Luminaire: 92.76.263.00	
Report No: NATA0100	Voltage(V): 30.0000
Test No:	Current(A): 0.9500
LampCAT: BRIDGELUX VERO 18	Power (W): 21.0000
Lamp flux(lm): 3866.0	PF: 0.0000
Number of Lamps: 1	Ballast type:
Length(mm): 100	Width(mm): 100
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 3475.20
Efficiency(%): 89.89%
Lumens(lm)/Power(W): 167.26
Central intensity(cd): 25407.150
Maximum intensity(cd): 25407.150
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=14.9
 [C90/270]Total=14.9
Field angle(10%Imax): [C0/180]Total=29.3
 [C90/270]Total=29.3
Maximum s/h(1/2): C0_180=0.26 C90_270=0.26
Maximum s/h(1/4): C0_180=0.26 C90_270=0.26
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.85%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.519%

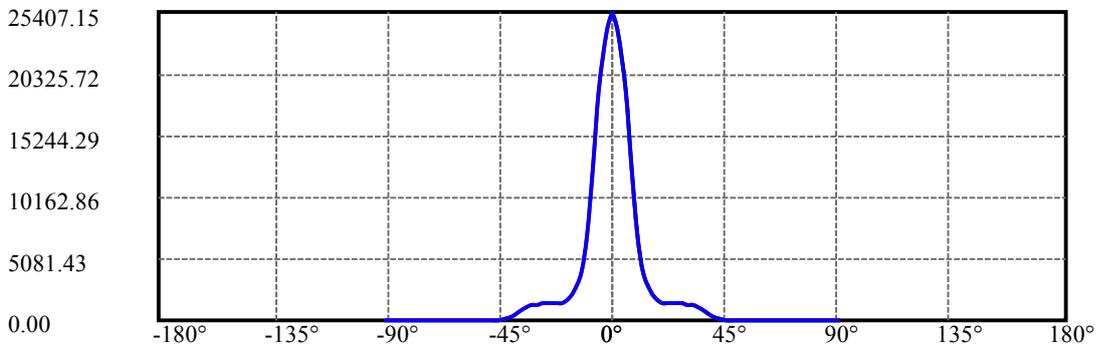
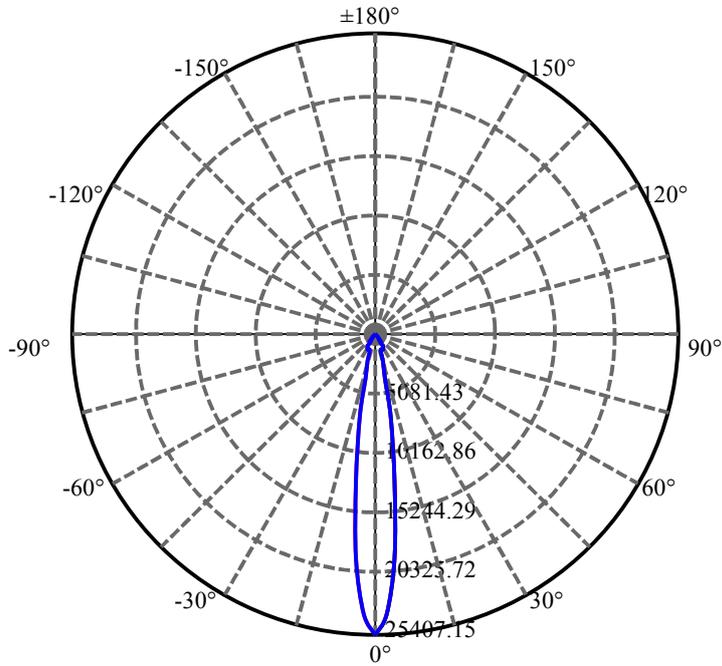
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	25407.152	37.989	37.989	.983%	1.093%
2.5	23695.586	283.341	321.331	7.329%	9.246%
5.0	18986.199	453.625	774.956	11.734%	22.300%
7.5	12619.271	451.538	1226.494	11.680%	35.293%
10.0	7133.107	339.556	1566.05	8.783%	45.064%
12.5	3867.712	229.485	1795.535	5.936%	51.667%
15.0	2341.342	166.121	1961.656	4.297%	56.447%
17.5	1679.771	138.470	2100.125	3.582%	60.432%
20.0	1483.908	139.130	2239.256	3.599%	64.435%
22.5	1417.358	148.690	2387.946	3.846%	68.714%
25.0	1378.199	159.670	2547.616	4.130%	73.308%
27.5	1346.129	170.394	2718.01	4.408%	78.212%
30.0	1310.205	179.586	2897.596	4.645%	83.379%
32.5	1193.375	175.775	3073.37	4.547%	88.437%
35.0	913.688	143.665	3217.036	3.716%	92.571%
37.5	581.127	96.980	3314.016	2.509%	95.362%
40.0	296.499	52.246	3366.262	1.351%	96.865%
42.5	149.396	27.668	3393.93	.716%	97.661%
45.0	58.181	11.278	3405.208	.292%	97.986%
47.5	16.441	3.323	3408.531	.086%	98.081%
50.0	15.485	3.252	3411.783	.084%	98.175%
52.5	15.141	3.293	3415.075	.085%	98.270%
55.0	14.865	3.338	3418.414	.086%	98.366%
57.5	14.617	3.380	3421.793	.087%	98.463%
60.0	14.487	3.439	3425.232	.089%	98.562%
62.5	14.363	3.492	3428.725	.090%	98.663%
65.0	14.445	3.589	3432.314	.093%	98.766%
67.5	15.705	3.978	3436.291	.103%	98.880%
70.0	16.971	4.372	3440.663	.113%	99.006%
72.5	17.570	4.594	3445.257	.119%	99.138%
75.0	17.825	4.720	3449.977	.122%	99.274%
77.5	18.189	4.868	3454.845	.126%	99.414%
80.0	18.348	4.953	3459.798	.128%	99.557%
82.5	18.107	4.921	3464.719	.127%	99.698%
85.0	16.682	4.556	3469.275	.118%	99.829%
87.5	14.700	4.026	3473.301	.104%	99.945%
90.0	13.881	1.903	3475.203	.049%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2897.60	74.95%	83.38%
0-40	3366.26	87.07%	96.87%
0-60	3425.23	88.60%	98.56%
0-90	3473.30	89.84%	99.95%
0-120	3473.30	89.84%	99.95%
0-180	3475.20	89.89%	100.00%
60-90	51.51	1.33%	1.48%
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%
0-28.37	2780.16	71.91%	80.00%

ZONAL LUMEN SUMMARY

0-10	1566.05
10-20	673.21
20-30	658.34
30-40	468.67
40-50	45.52
50-60	13.45
60-70	15.43
70-80	19.13
80-90	13.50
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



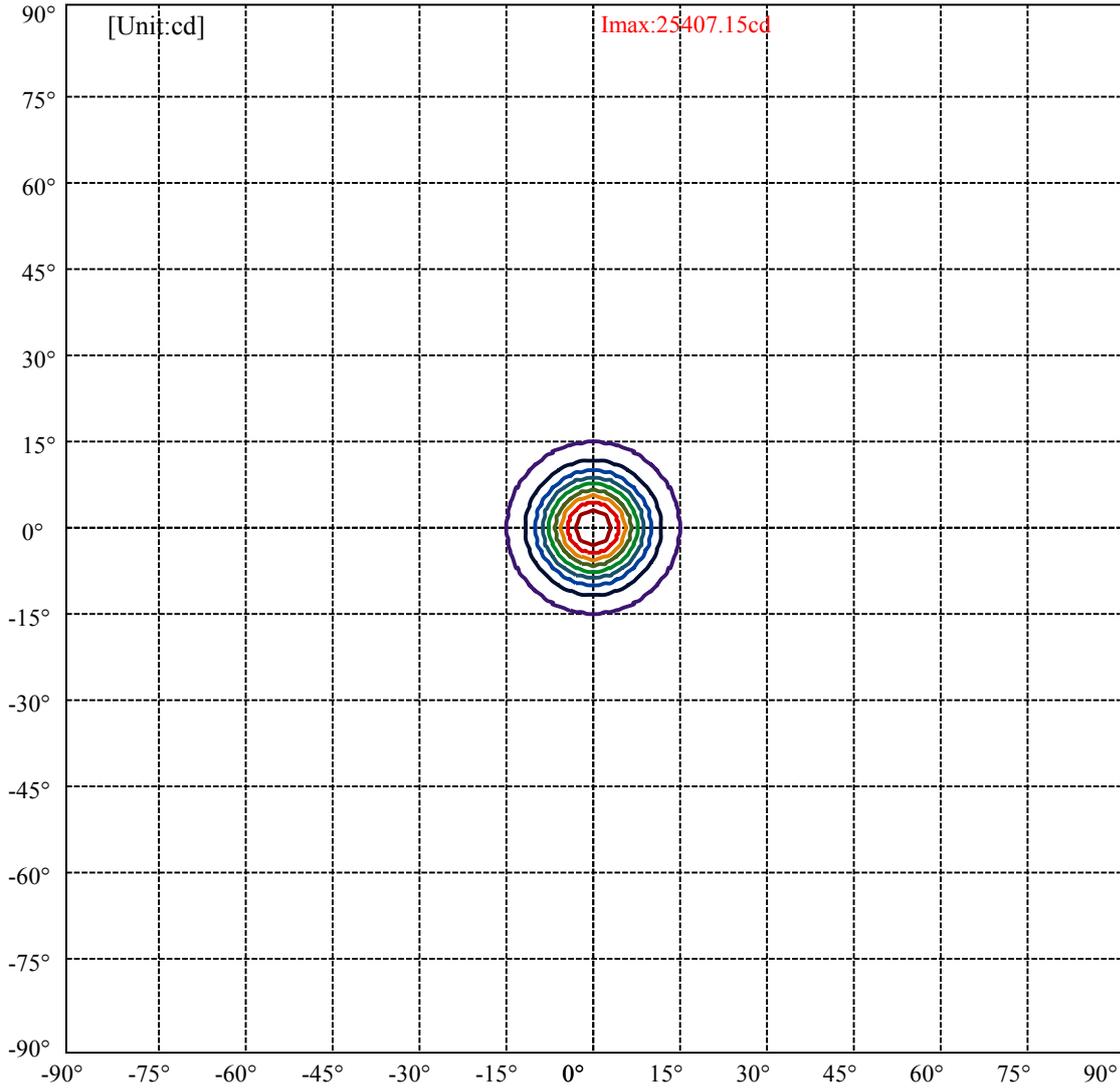
C0(Max): —————

C0/C180: —————

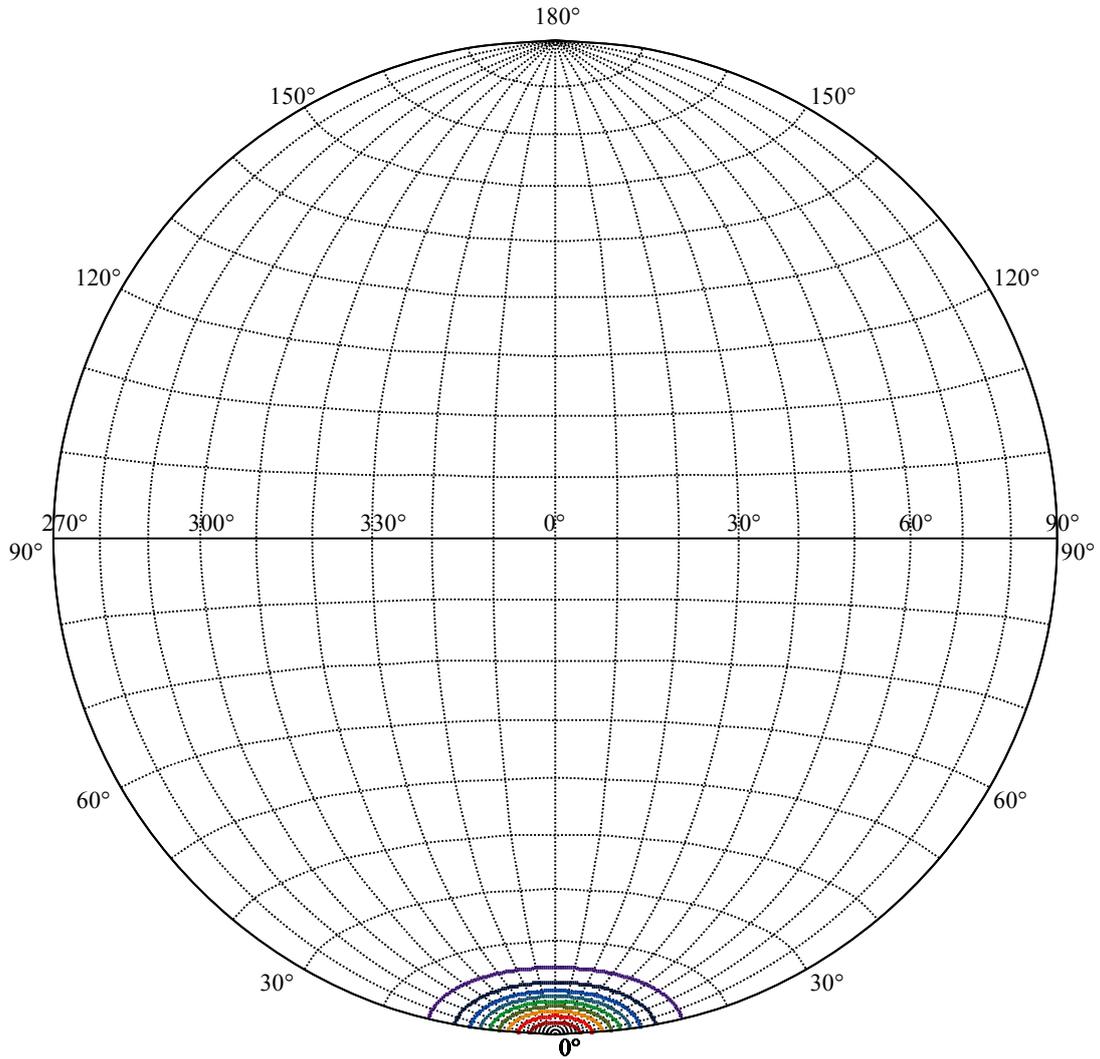
C90/C270: —————

Field angle(10%Imax):C0/180Left:14.7 Right:14.7
:C90/270Left:14.7 Right:14.7

Beam Angle(50%Imax):C0/180Left:7.5 Right:7.5
:C90/270Left:7.5 Right:7.5



(10%Imax) 2540.72	—
(20%Imax) 5081.43	—
(30%Imax) 7622.15	—
(40%Imax) 10162.9	—
(50%Imax) 12703.6	—
(60%Imax) 15244.3	—
(70%Imax) 17785	—
(80%Imax) 20325.7	—
(90%Imax) 22866.4	—



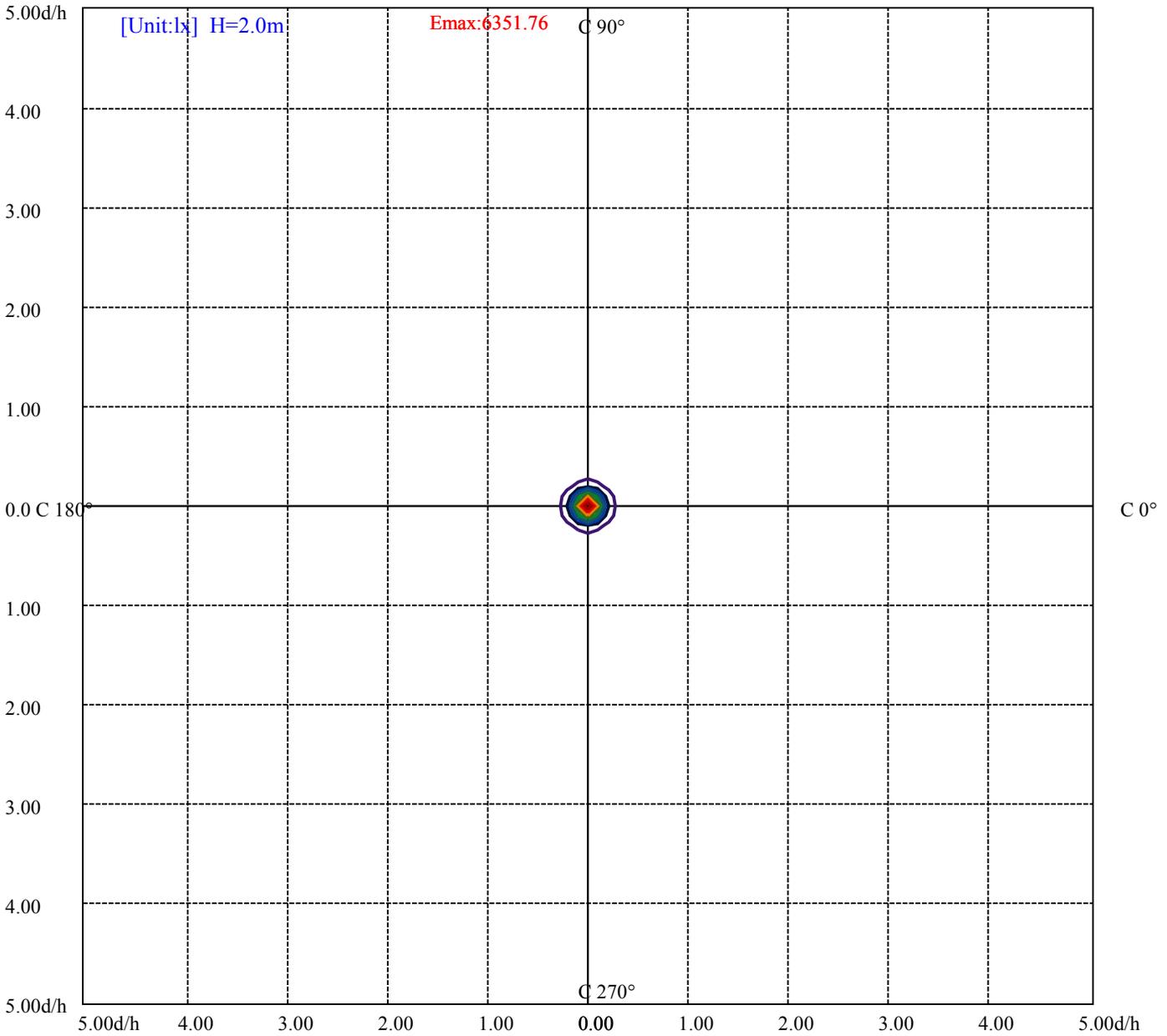
House

[Unit:cd]

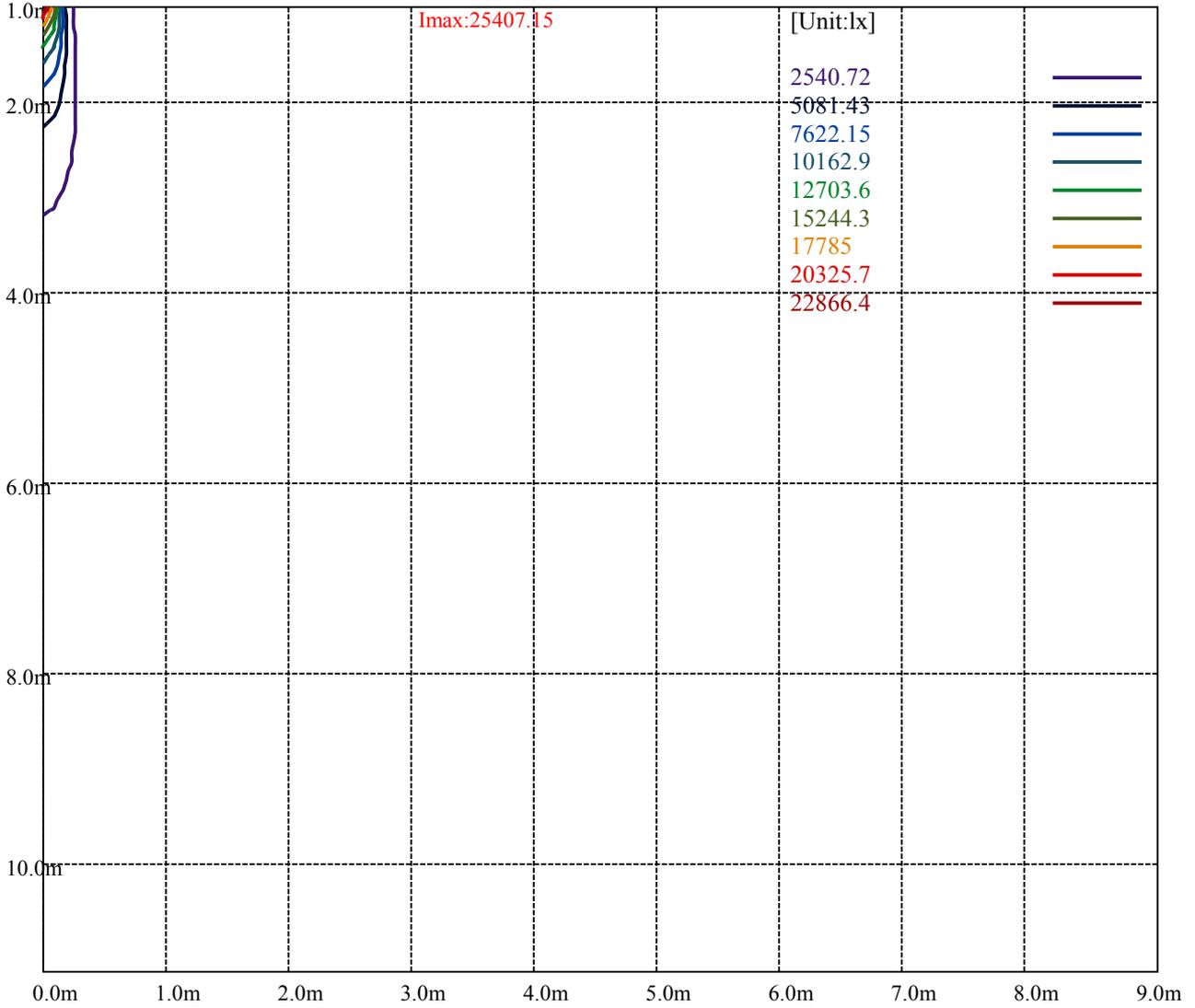
Road

Imax:25407.15

(10%Imax) 2540.72	—
(20%Imax) 5081.43	—
(30%Imax) 7622.15	—
(40%Imax) 10162.9	—
(50%Imax) 12703.6	—
(60%Imax) 15244.3	—
(70%Imax) 17785	—
(80%Imax) 20325.7	—
(90%Imax) 22866.4	—



(10%Emax) 635.175	—
(20%Emax) 1270.353	—
(30%Emax) 1905.527	—
(40%Emax) 2540.7	—
(50%Emax) 3175.875	—
(60%Emax) 3811.05	—
(70%Emax) 4446.225	—
(80%Emax) 5081.4	—
(90%Emax) 5716.575	—



Luminance Table

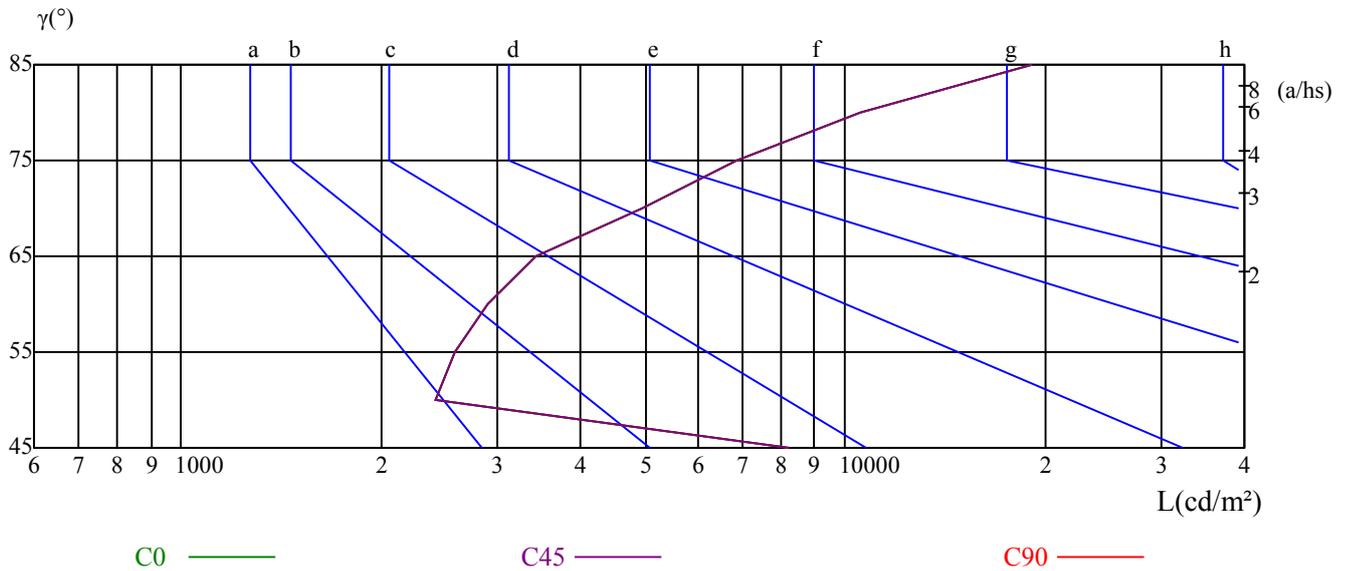
γ	45	50	55	60	65	70	75	80	85
C0	8228	2409	2592	2897	3418	4962	6887	10566	19141
C45	8228	2409	2592	2897	3418	4962	6887	10566	19141
C90	8228	2409	2592	2897	3418	4962	6887	10566	19141

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3418	3418	3418	6887	6887	6887	19141	19141	19141

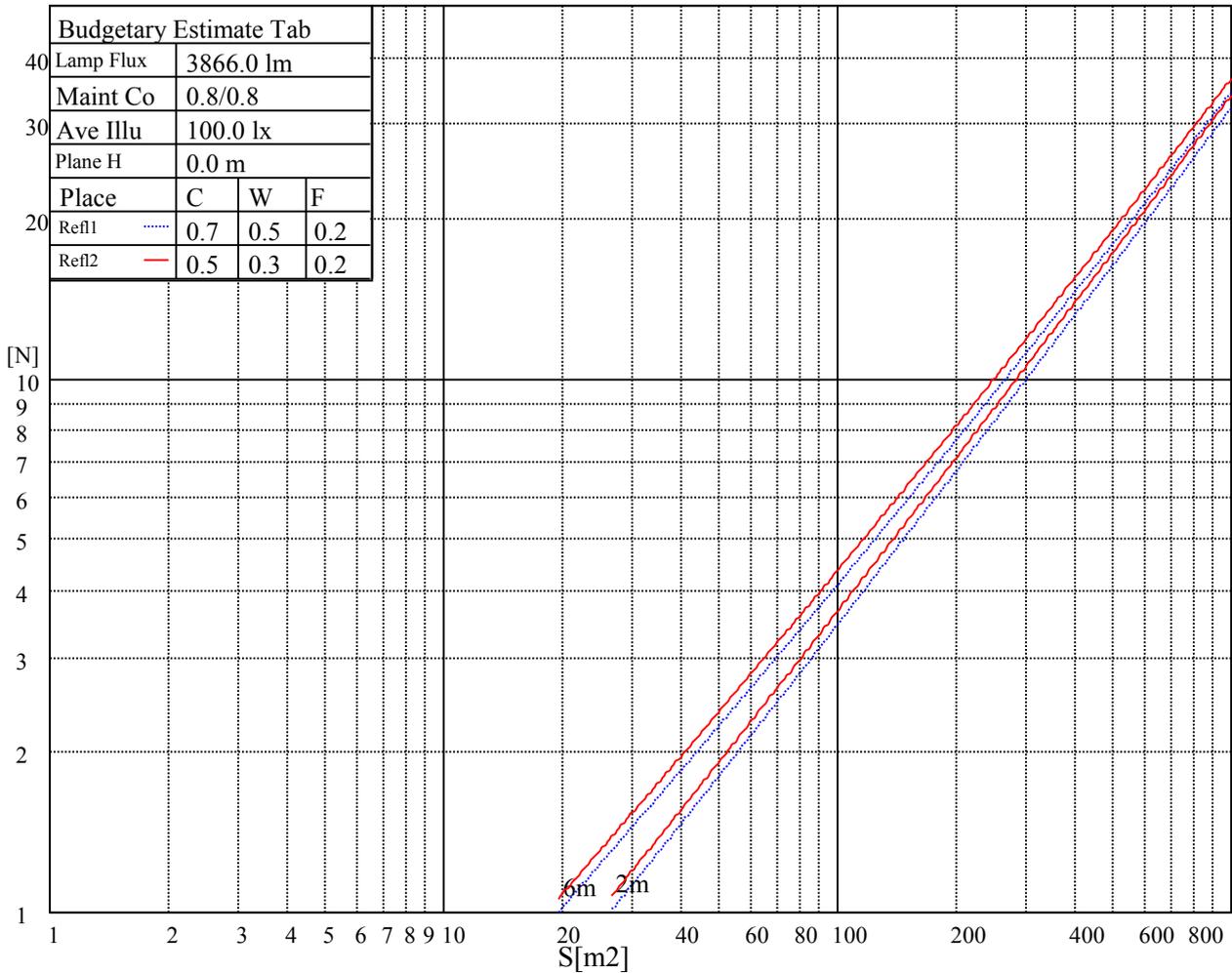
Glare Table

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

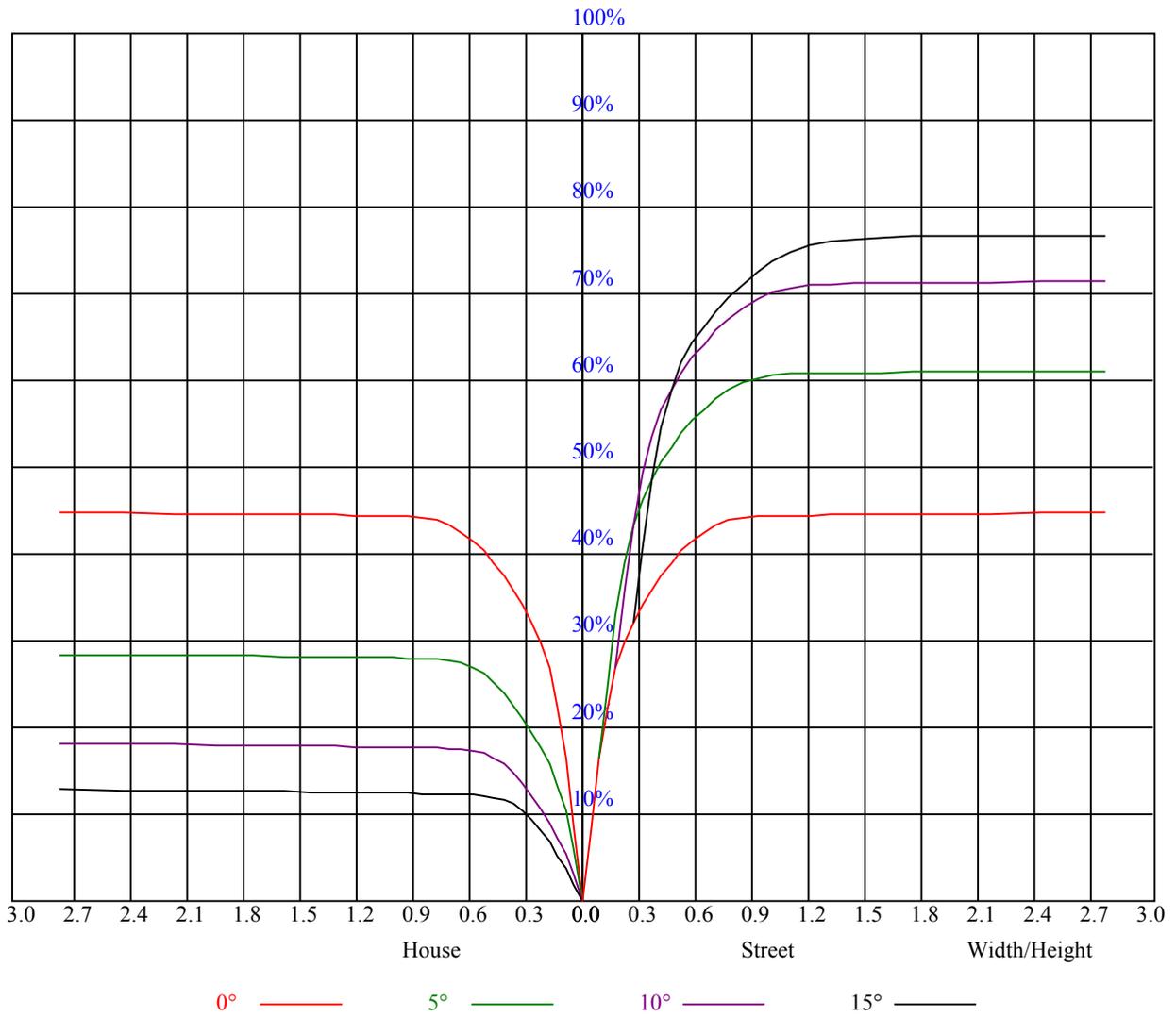
Luminance Limiting Curve



Illumination assessment according UGR											
Rf of Ceiling	70	70	50	50	30	70	70	50	50	30	
Rf of Wall	50	30	50	30	30	50	30	50	30	30	
Rf of Floor	20	20	20	20	20	20	20	20	20	20	
Room dimensions		Viewed crosswise					Viewed endwise				
X	Y										
2H	2H	-0.45	0.48	-0.08	0.79	1.10	-0.51	0.42	-0.14	0.73	1.04
	3H	3.33	4.15	3.72	4.48	4.85	3.59	4.41	3.98	4.74	5.11
	4H	5.47	6.22	5.88	6.58	6.97	5.86	6.61	6.27	6.97	7.36
	6H	7.74	8.43	8.16	8.80	9.20	8.20	8.88	8.62	9.26	9.66
	8H	8.91	9.56	9.35	9.95	10.36	9.29	9.93	9.72	10.32	10.73
	12H	10.73	11.34	11.16	11.73	12.16	10.85	11.46	11.28	11.85	12.28
4H	2H	0.53	1.28	0.94	1.64	2.03	0.49	1.24	0.90	1.59	1.99
	3H	4.74	5.36	5.16	5.77	6.17	4.96	5.57	5.37	5.98	6.39
	4H	7.03	7.58	7.47	8.00	8.45	7.35	7.90	7.79	8.32	8.77
	6H	9.27	9.74	9.74	10.20	10.67	9.63	10.10	10.10	10.55	11.03
	8H	10.56	11.00	11.04	11.45	11.93	10.85	11.29	11.33	11.74	12.21
	12H	12.26	12.63	12.75	13.12	13.60	12.33	12.71	12.82	13.20	13.67
8H	4H	8.03	8.46	8.50	8.92	9.39	8.25	8.69	8.73	9.15	9.62
	6H	10.56	10.91	11.08	11.41	11.90	10.83	11.18	11.34	11.68	12.17
	8H	11.99	12.30	12.53	12.82	13.32	12.20	12.50	12.73	13.03	13.53
	12H	13.73	13.99	14.25	14.49	15.07	13.75	14.02	14.28	14.52	15.10
12H	4H	8.31	8.69	8.81	9.18	9.66	8.51	8.89	9.00	9.38	9.85
	6H	11.18	11.28	11.51	11.76	12.31	11.41	11.51	11.74	11.99	12.54
	8H	12.53	12.79	13.05	13.29	13.87	12.70	12.96	13.22	13.46	14.04
Variation with the observer position at spacings:											
S = 1.0H		5.2/-7.9					5.2/-7.9				
S = 1.5H		7.3/-5.6					7.3/-5.6				
S = 2.0H		8.6/-4.0					8.6/-4.0				
Standard tables:		BK3					BK3				
Uncorrected UGR		1.6					1.6				



RHOCC	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	1.08	1.08	1.08	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.01	0.98	0.96	0.99	0.97	0.95	0.95	0.93	0.92	0.92	0.90	0.89	0.89	0.88	0.87	0.85
2	0.95	0.92	0.89	0.94	0.91	0.88	0.91	0.89	0.86	0.88	0.86	0.85	0.86	0.84	0.83	0.81
3	0.91	0.87	0.84	0.90	0.86	0.83	0.87	0.84	0.82	0.85	0.83	0.81	0.83	0.81	0.80	0.78
4	0.87	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.80	0.77	0.81	0.78	0.77	0.75
5	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
6	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
7	0.77	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
8	0.75	0.71	0.68	0.74	0.70	0.68	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.66
9	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
10	0.70	0.67	0.64	0.70	0.66	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.68	0.65	0.63	0.62



Intensity data(cd)

C/γ(°)	0.0	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0
0.0	25513.14	21207.73	14518.37	8148.35	4250.35	2840.91	1706.75	1478.81	1410.54
45.0	25832.46	24698.30	19979.97	13312.64	6915.08	3688.78	2261.17	1623.06	1468.90
90.0	25667.29	25408.53	21532.56	15090.96	8236.99	4351.11	2529.84	1692.98	1489.28
135.0	24615.72	26030.67	24059.65	18724.68	11886.68	5935.08	3435.52	2045.90	1572.96
180.0	25513.14	25837.97	23156.72	17359.28	10453.56	5475.91	3060.59	1918.16	1546.53
225.0	25832.46	23586.16	18465.92	10980.45	6193.29	3449.28	2143.35	1626.92	1490.93
270.0	25667.29	22479.53	16516.92	10091.84	5246.87	2978.55	1944.04	1575.71	1473.86
315.0	24615.72	20315.81	13659.49	7245.97	3882.03	2222.08	1649.49	1476.61	1418.25
360.0	25513.14	21207.73	14518.37	8148.35	4250.35	2840.91	1706.75	1478.81	1410.54

C/γ(°)	22.5	25.0	27.5	30.0	32.5	35.0	37.5	40.0	42.5
0.0	1373.11	1337.87	1302.63	1260.24	1026.80	656.82	319.33	148.54	72.07
45.0	1413.85	1375.31	1342.83	1306.49	1243.17	950.82	585.25	279.14	155.86
90.0	1417.15	1376.41	1341.72	1304.29	1256.39	1018.32	670.42	335.18	149.92
135.0	1447.98	1396.23	1362.65	1329.06	1291.62	1177.11	870.99	509.82	290.15
180.0	1436.42	1387.97	1355.49	1326.86	1296.03	1090.89	836.20	465.78	210.26
225.0	1435.87	1400.08	1370.90	1342.83	1250.33	931.94	578.86	258.54	124.48
270.0	1431.47	1399.53	1370.35	1338.42	1187.57	846.22	494.96	228.65	128.17
315.0	1383.02	1352.19	1322.45	1273.45	995.09	637.39	293.01	146.34	64.25
360.0	1373.11	1337.87	1302.63	1260.24	1026.80	656.82	319.33	148.54	72.07

C/γ(°)	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0
0.0	16.24	15.58	15.20	14.92	14.70	14.42	14.37	14.26	15.09
45.0	49.22	16.41	15.86	15.47	15.20	14.92	14.81	14.70	14.59
90.0	105.38	16.30	15.75	15.36	15.03	14.81	14.70	14.48	14.48
135.0	127.68	19.55	15.69	15.31	14.98	14.70	14.48	14.31	14.26
180.0	109.84	16.08	15.36	15.03	14.76	14.48	14.26	14.15	14.04
225.0	24.28	16.19	15.58	15.20	14.87	14.65	14.48	14.42	14.31
270.0	16.74	16.02	15.42	15.09	14.87	14.59	14.48	14.37	14.31
315.0	16.08	15.42	15.03	14.76	14.53	14.37	14.31	14.20	14.48
360.0	16.24	15.58	15.20	14.92	14.70	14.42	14.37	14.26	15.09

C/γ(°)	67.5	70.0	72.5	75.0	77.5	80.0	82.5	85.0	87.5
0.0	19.82	19.55	20.65	20.87	21.36	21.25	20.98	14.53	13.76
45.0	15.25	21.53	22.41	23.12	23.89	24.22	22.90	20.81	14.20
90.0	14.37	15.25	16.02	16.02	16.13	16.30	16.46	16.68	14.04
135.0	14.20	14.20	14.37	14.81	15.91	16.90	17.95	19.27	17.78
180.0	14.04	14.76	15.36	15.09	14.81	14.65	14.70	15.09	15.97
225.0	14.31	14.31	14.42	14.92	15.75	16.30	16.63	17.51	14.04
270.0	14.48	15.69	16.57	16.68	16.46	16.63	16.08	15.53	13.93
315.0	19.16	20.48	20.76	21.09	21.20	20.54	19.16	14.04	13.87
360.0	19.82	19.55	20.65	20.87	21.36	21.25	20.98	14.53	13.76

C/γ(°)	90.0
0.0	13.76
45.0	13.98
90.0	13.93
135.0	13.82
180.0	13.76
225.0	13.98
270.0	13.93
315.0	13.87
360.0	13.76