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Nata

LumCAT: 4-2267-M
Luminaire: 92.70.135.00
Report No: NATA0100
Test No: GC2018070414
LampCAT: NICHIA NFCWD096B-V3
Lamp flux(lm): 2202.0
Number of Lamps: 1
Length(mm): 100
Phm Type: C

Voltage(V): 34.0000
Current(A): 0.5000
Power (W): 17.0000
PF: 0.0000
Ballast type: DC
Width(mm): 100
Height(mm): 0

Photometric Results

Lumens(lm): 1974.63
Efficiency(%): 89.67%
Lumens(lm)/Power(W): 117.71
Central intensity(cd): 4725.216
Maximum intensity(cd): 4725.216
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=33.0
[C90/270]Total=33.0
Field angle(10%Imax): [C0/180]Total=69.1
[C90/270]Total=69.1
Maximum s/h(1/2): C0_180=0.54 C90_270=0.54
Maximum s/h(1/4): C0_180=0.58 C90_270=0.58
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.87%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.270%

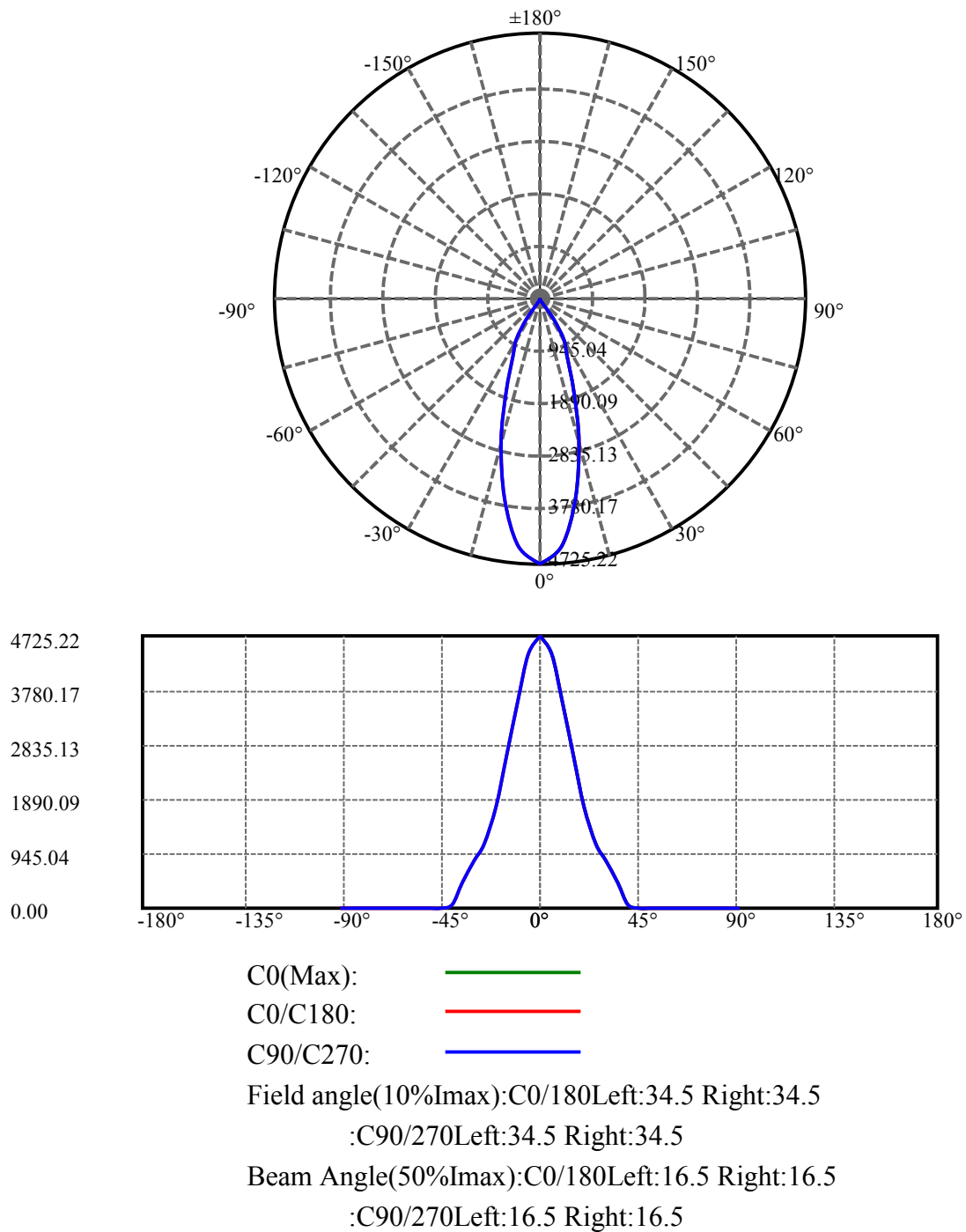
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4725.216	28.258	28.258	1.283%	1.431%
5.0	4412.495	210.800	239.057	9.573%	12.106%
10.0	3620.096	344.572	583.629	15.648%	29.556%
15.0	2626.397	372.603	956.232	16.921%	48.426%
20.0	1759.052	329.777	1286.008	14.976%	65.126%
25.0	1123.254	260.205	1546.213	11.817%	78.304%
30.0	818.771	224.400	1770.613	10.191%	89.668%
35.0	437.334	137.497	1908.11	6.244%	96.631%
40.0	61.326	21.607	1929.717	.981%	97.725%
45.0	10.998	4.263	1933.98	.194%	97.941%
50.0	9.745	4.092	1938.072	.186%	98.149%
55.0	9.153	4.110	1942.182	.187%	98.357%
60.0	8.843	4.198	1946.38	.191%	98.569%
65.0	8.747	4.345	1950.725	.197%	98.789%
70.0	8.816	4.541	1955.266	.206%	99.019%
75.0	12.518	6.628	1961.894	.301%	99.355%
80.0	10.385	5.606	1967.5	.255%	99.639%
85.0	8.754	4.780	1972.28	.217%	99.881%
90.0	8.582	2.352	1974.632	.107%	100.000%

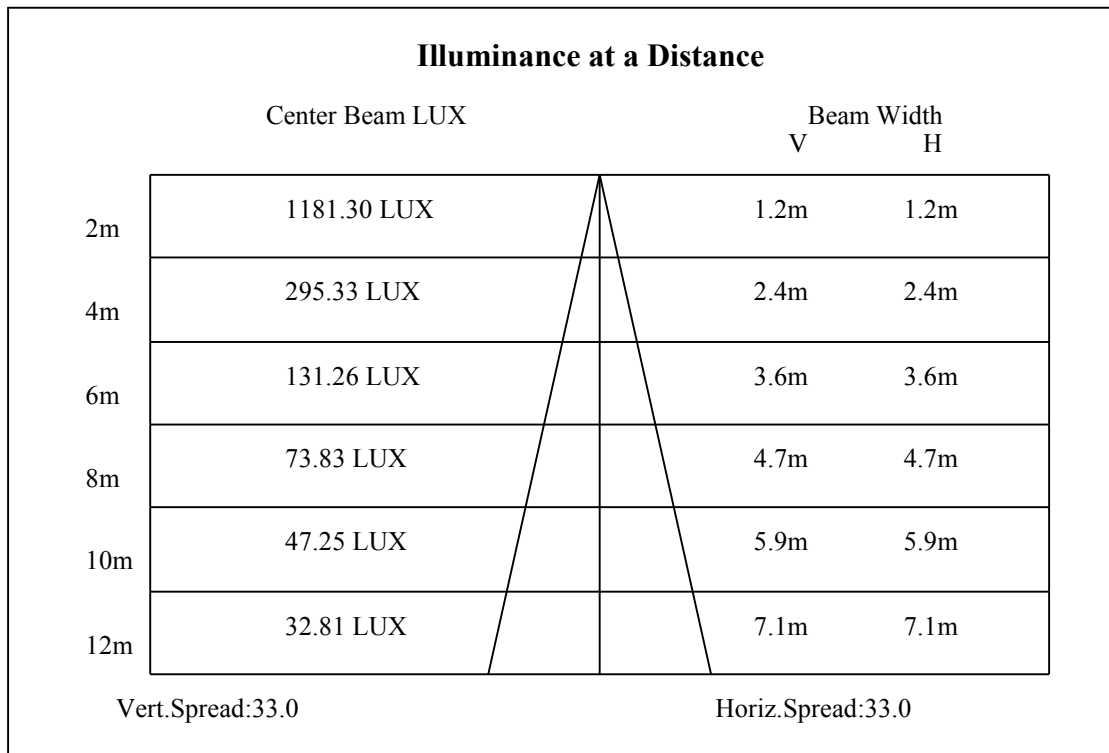
ZONAL LUMEN SUMMARY

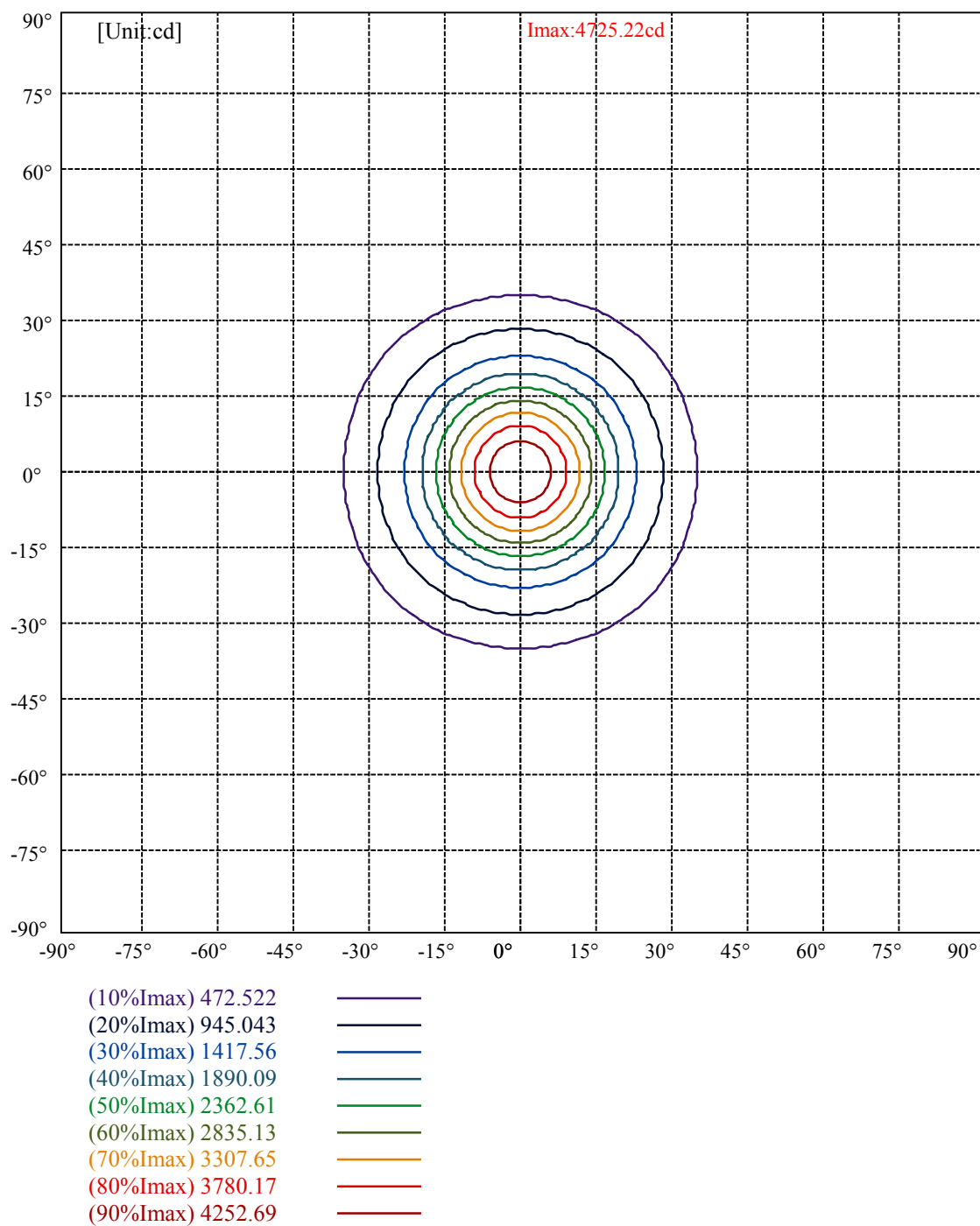
Zone	Lumens	%Lamp	%Fixt
0-30	1770.61	80.41%	89.67%
0-40	1929.72	87.63%	97.73%
0-60	1946.38	88.39%	98.57%
0-90	1972.28	89.57%	99.88%
0-120	1972.28	89.57%	99.88%
0-180	1974.63	89.67%	100.00%
60-90	30.10	1.37%	1.52%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-25.75	1579.71	71.74%	80.00%

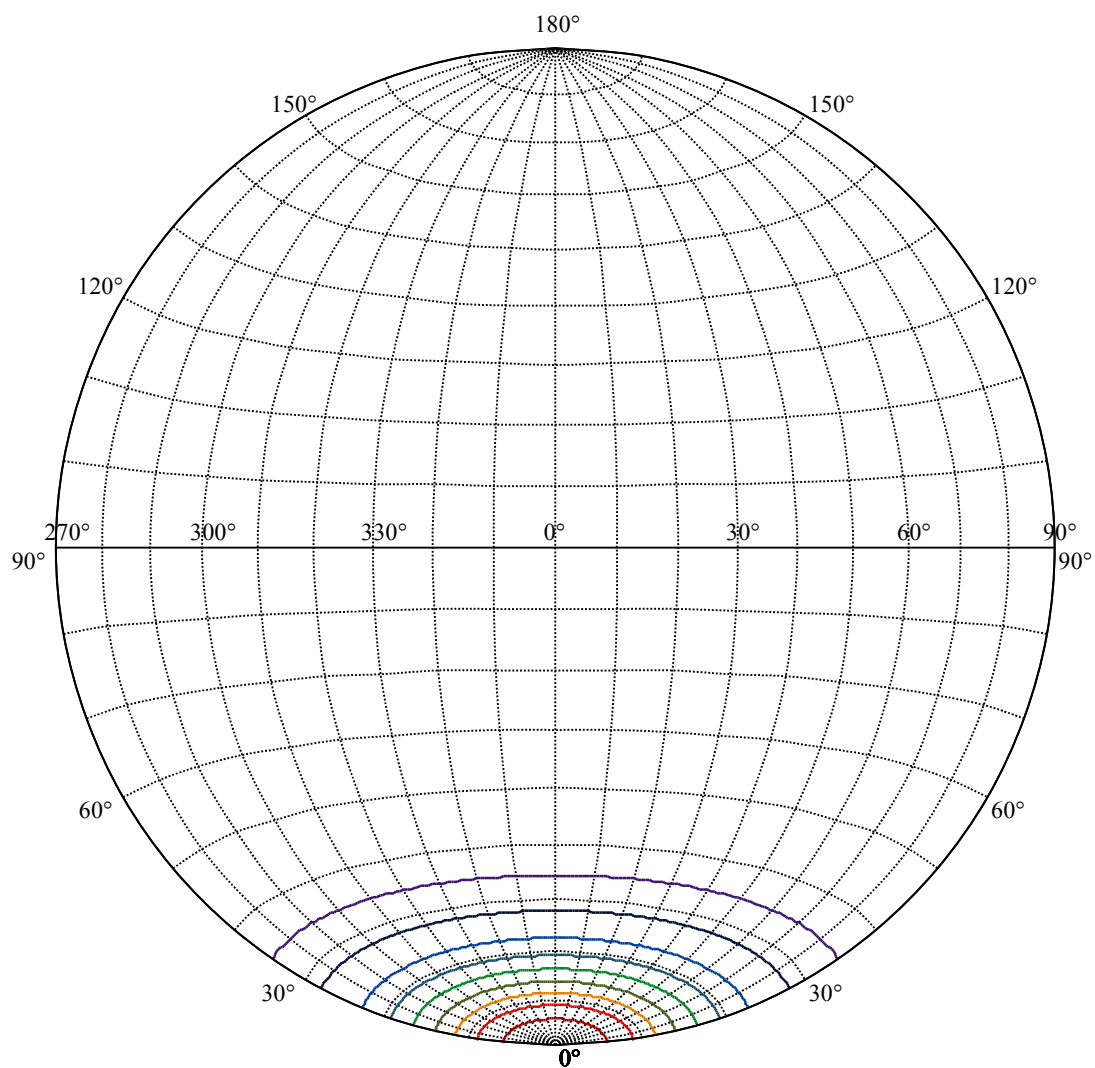
ZONAL LUMEN SUMMARY

0-10	583.63
10-20	702.38
20-30	484.60
30-40	159.10
40-50	8.35
50-60	8.31
60-70	8.89
70-80	12.23
80-90	4.78
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:4725.22

(10%Imax) 472.522

(20%Imax) 945.043

(30%Imax) 1417.56

(40%Imax) 1890.09

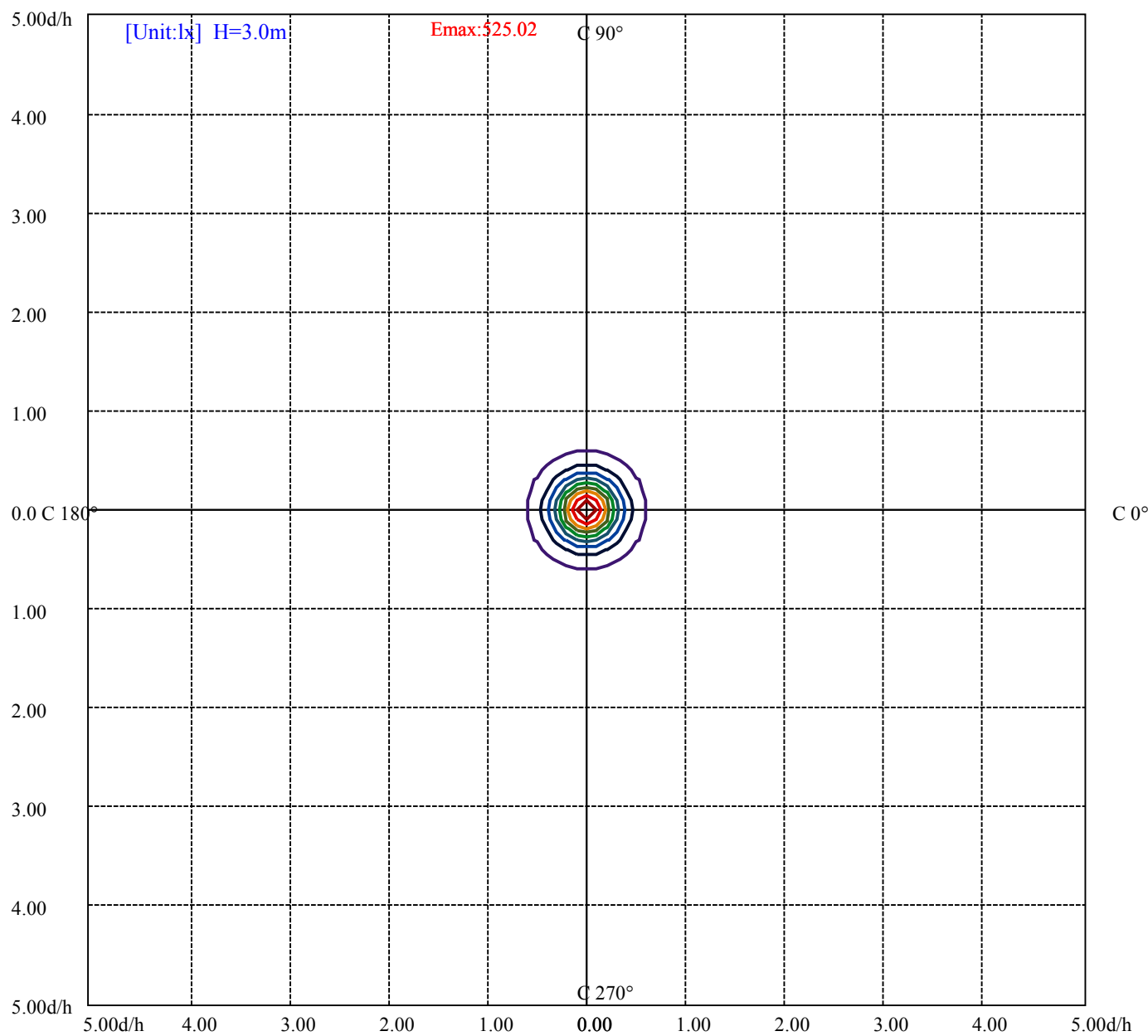
(50%Imax) 2362.61

(60%Imax) 2835.13

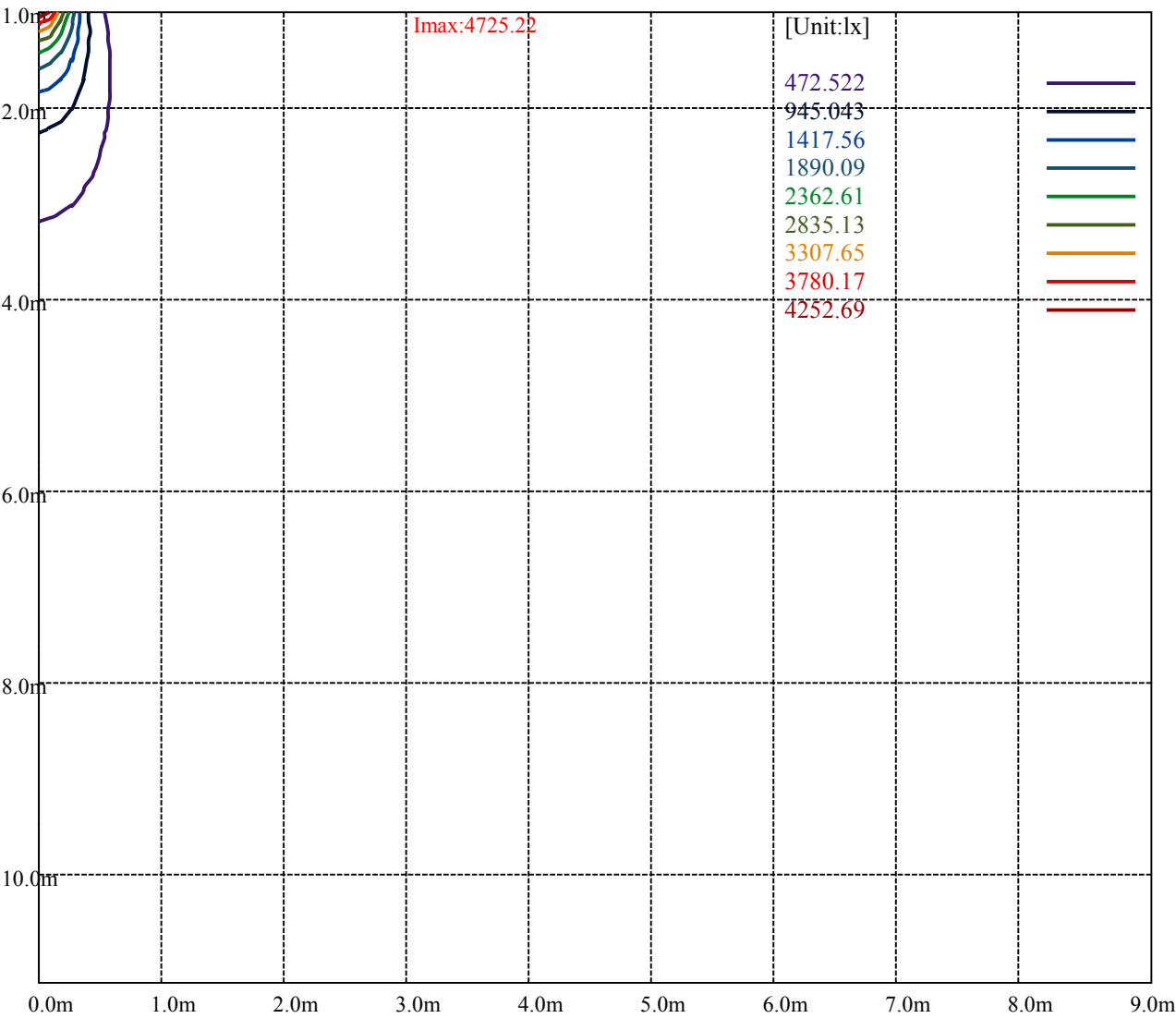
(70%Imax) 3307.65

(80%Imax) 3780.17

(90%Imax) 4252.69



(10%E _{max}) 52.50233	—
(20%E _{max}) 105.0046	—
(30%E _{max}) 157.5067	—
(40%E _{max}) 210.0089	—
(50%E _{max}) 262.5111	—
(60%E _{max}) 315.0133	—
(70%E _{max}) 367.5155	—
(80%E _{max}) 420.0189	—
(90%E _{max}) 472.5211	—



Luminance Table

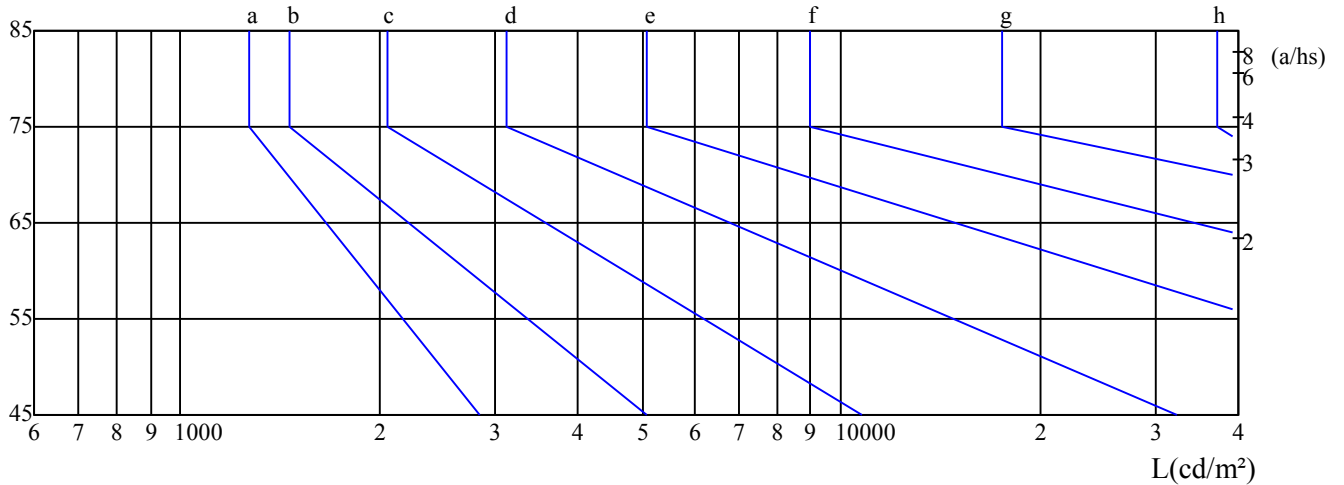
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

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

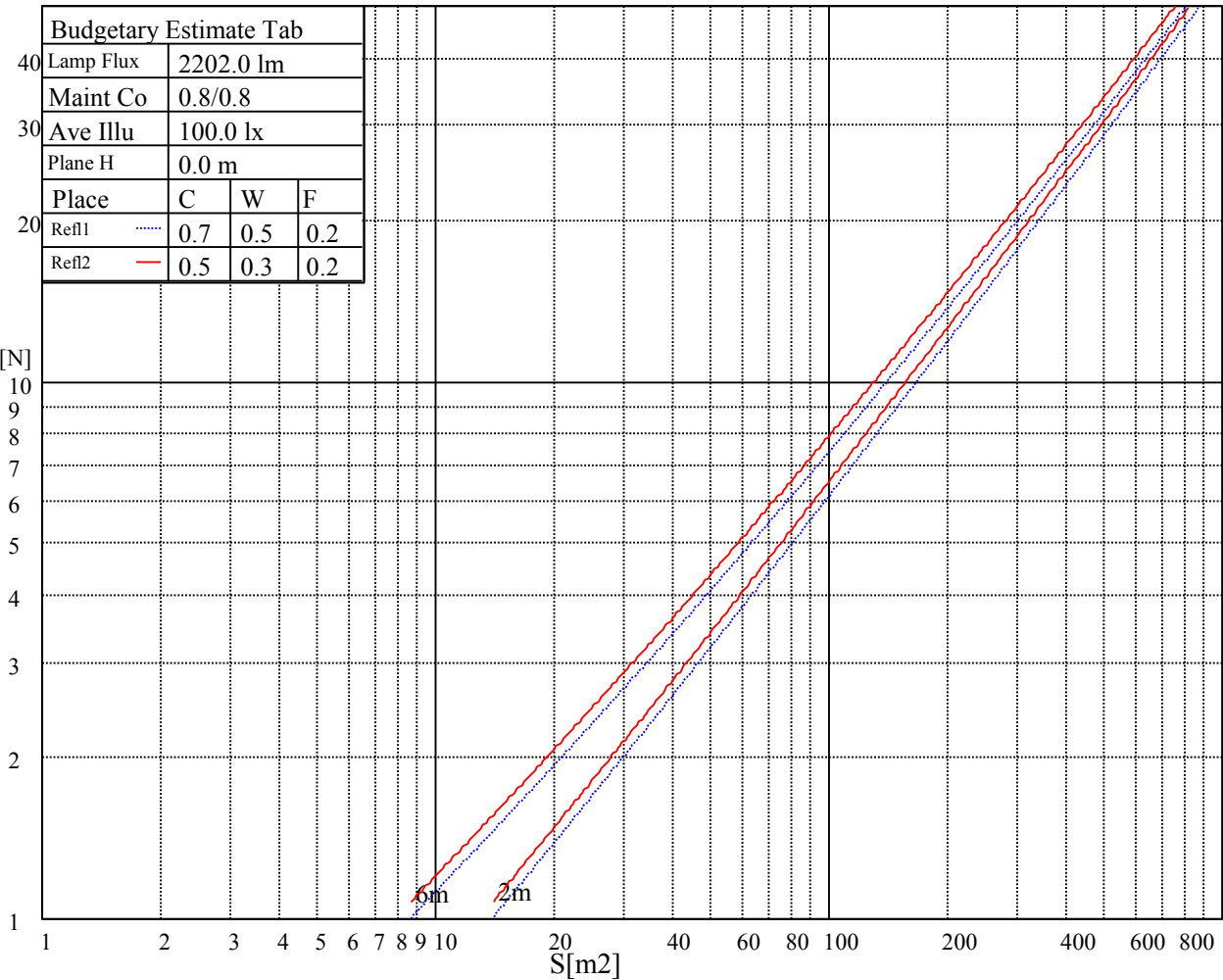
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

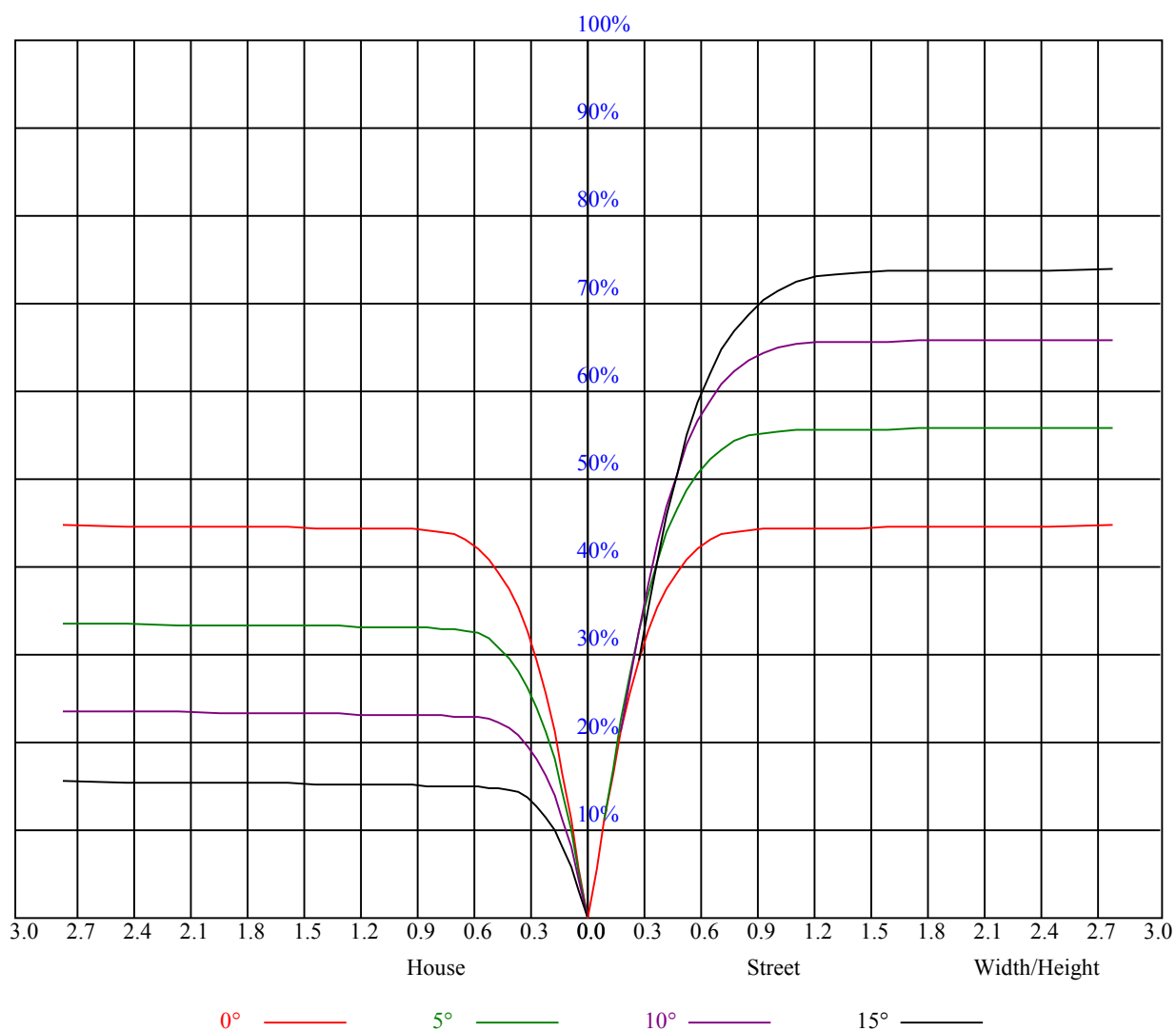
C0 ———

C45 ———

C90 ———



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	1.00	0.98	0.96	0.98	0.96	0.94	0.94	0.93	0.91	0.91	0.90	0.88	0.88	0.87	0.86	0.84
2	0.95	0.91	0.88	0.93	0.90	0.87	0.90	0.88	0.85	0.87	0.85	0.84	0.85	0.83	0.82	0.80
3	0.90	0.86	0.83	0.89	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.79	0.82	0.80	0.78	0.77
4	0.86	0.81	0.78	0.85	0.81	0.77	0.83	0.79	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.74
5	0.82	0.77	0.74	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.71
6	0.78	0.74	0.71	0.78	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
7	0.75	0.71	0.68	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.65
8	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63
9	0.70	0.65	0.63	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.61
10	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.59



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	4750.27	4476.64	3705.85	2709.88	1911.56	1172.70	837.41	479.54	37.82		
45.0	4700.16	4520.68	3817.61	2925.15	1950.65	1232.71	870.44	557.72	162.75		
90.0	4724.94	4421.58	3629.32	2628.39	1764.01	1082.24	828.16	453.22	36.23		
135.0	4725.49	4524.53	3786.78	2805.12	1860.91	1245.38	863.83	516.43	166.11		
180.0	4750.27	4416.07	3518.65	2534.25	1674.27	1081.53	806.63	411.33	24.56		
225.0	4700.16	4282.29	3362.29	2342.10	1568.56	1023.83	751.08	298.96	20.65		
270.0	4724.94	4379.74	3664.55	2591.50	1711.15	1097.82	816.49	426.69	23.01		
315.0	4725.49	4278.43	3475.71	2474.79	1631.32	1049.82	776.13	354.78	19.49		
360.0	4750.27	4476.64	3705.85	2709.88	1911.56	1172.70	837.41	479.54	37.82		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	11.01	9.74	9.14	8.81	8.70	8.75	12.11	11.34	8.70		
45.0	11.34	10.02	9.36	8.97	8.81	8.92	11.78	10.63	8.86		
90.0	11.18	9.86	9.19	8.86	8.75	8.81	10.85	10.96	8.75		
135.0	11.56	9.97	9.30	8.97	8.86	8.92	10.63	12.33	8.86		
180.0	10.79	9.74	9.14	8.86	8.81	8.92	14.15	9.86	8.75		
225.0	10.63	9.52	9.03	8.75	8.70	8.75	12.22	8.92	8.70		
270.0	10.96	9.63	9.08	8.75	8.70	8.70	13.71	9.08	8.70		
315.0	10.52	9.47	8.97	8.75	8.64	8.75	14.70	9.97	8.70		
360.0	11.01	9.74	9.14	8.81	8.70	8.75	12.11	11.34	8.70		
C/ γ (°)	90.0										
0.0	8.59										
45.0	8.59										
90.0	8.59										
135.0	8.59										
180.0	8.59										
225.0	8.59										
270.0	8.59										
315.0	8.53										
360.0	8.59										