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NATA

LumCAT: 2-1676-M
Luminaire: 92.70.135.00
Report No: NATA0100
Test No: GC2018102510
LampCAT: LUMILEDS LUXEON CoB 1205
Lamp flux(lm): 2979.0
Number of Lamps: 1
Length(mm): 70
Phm Type: C

Voltage(V): 35.7000
Current(A): 0.6000
Power (W): 21.4200
PF: 0.0000
Ballast type: DC
Width(mm): 70
Height(mm): 0

Photometric Results

Lumens(lm): 2673.20
Efficiency(%): 89.73%
Lumens(lm)/Power(W): 126.36
Central intensity(cd): 6027.890
Maximum intensity(cd): 6027.890
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=35.3
[C90/270]Total=35.3
Field angle(10%Imax): [C0/180]Total=71.0
[C90/270]Total=71.0
Maximum s/h(1/2): C0_180=0.59 C90_270=0.59
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(%): 90.86%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.542%

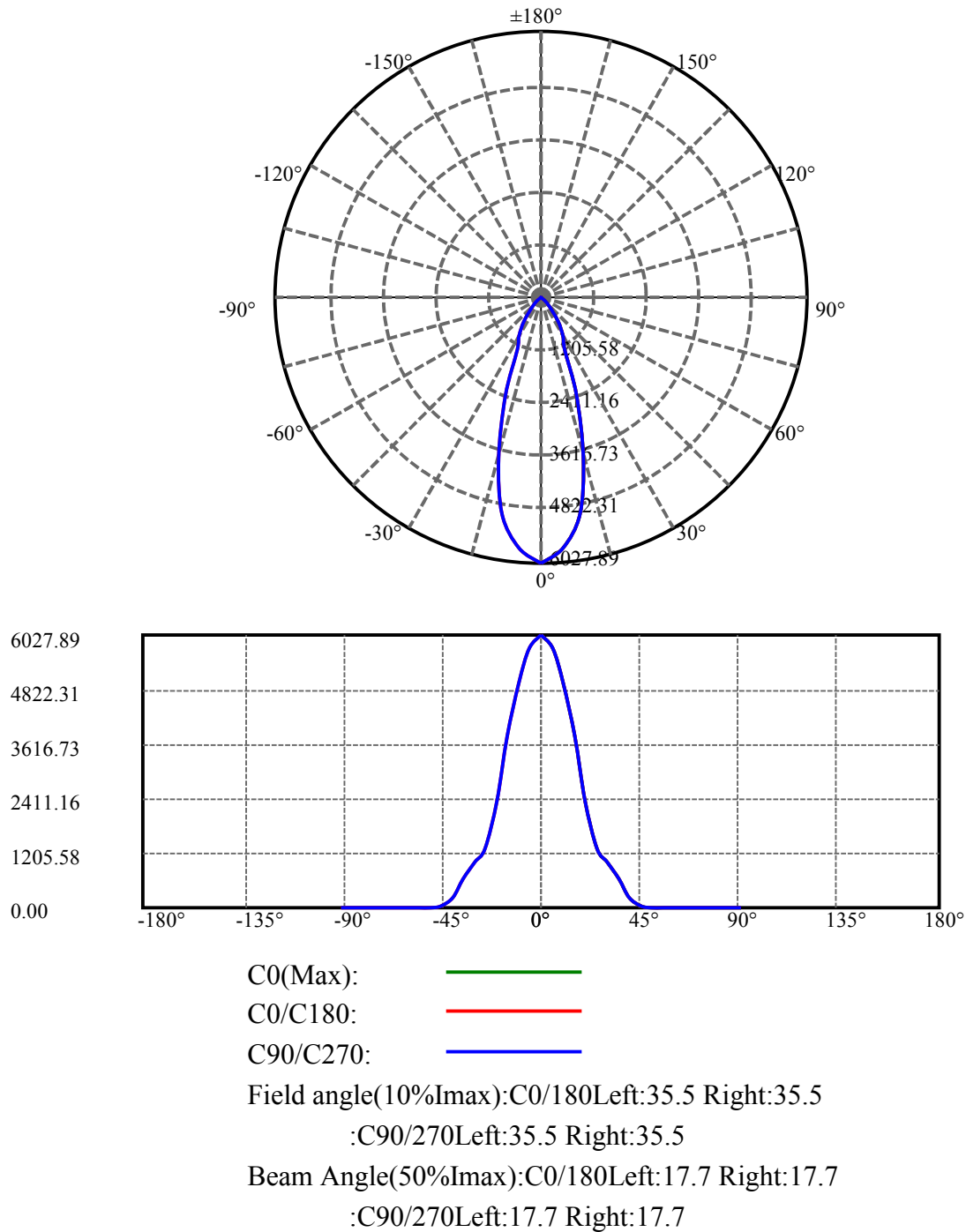
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6027.891	36.048	36.048	1.210%	1.348%
5.0	5715.703	273.058	309.106	9.166%	11.563%
10.0	4979.250	473.940	783.046	15.909%	29.292%
15.0	3764.391	534.048	1317.094	17.927%	49.270%
20.0	2359.266	442.301	1759.395	14.847%	65.816%
25.0	1300.992	301.379	2060.774	10.117%	77.090%
30.0	1000.744	274.273	2335.047	9.207%	87.350%
35.0	644.295	202.565	2537.612	6.800%	94.928%
40.0	215.016	75.758	2613.37	2.543%	97.762%
45.0	22.247	8.623	2621.992	.289%	98.084%
50.0	14.716	6.179	2628.172	.207%	98.315%
55.0	13.430	6.030	2634.202	.202%	98.541%
60.0	12.593	5.978	2640.18	.201%	98.765%
65.0	12.038	5.980	2646.16	.201%	98.988%
70.0	11.658	6.005	2652.164	.202%	99.213%
75.0	11.363	6.016	2658.18	.202%	99.438%
80.0	11.152	6.020	2664.2	.202%	99.663%
85.0	11.011	6.013	2670.213	.202%	99.888%
90.0	10.913	2.991	2673.203	.100%	100.000%

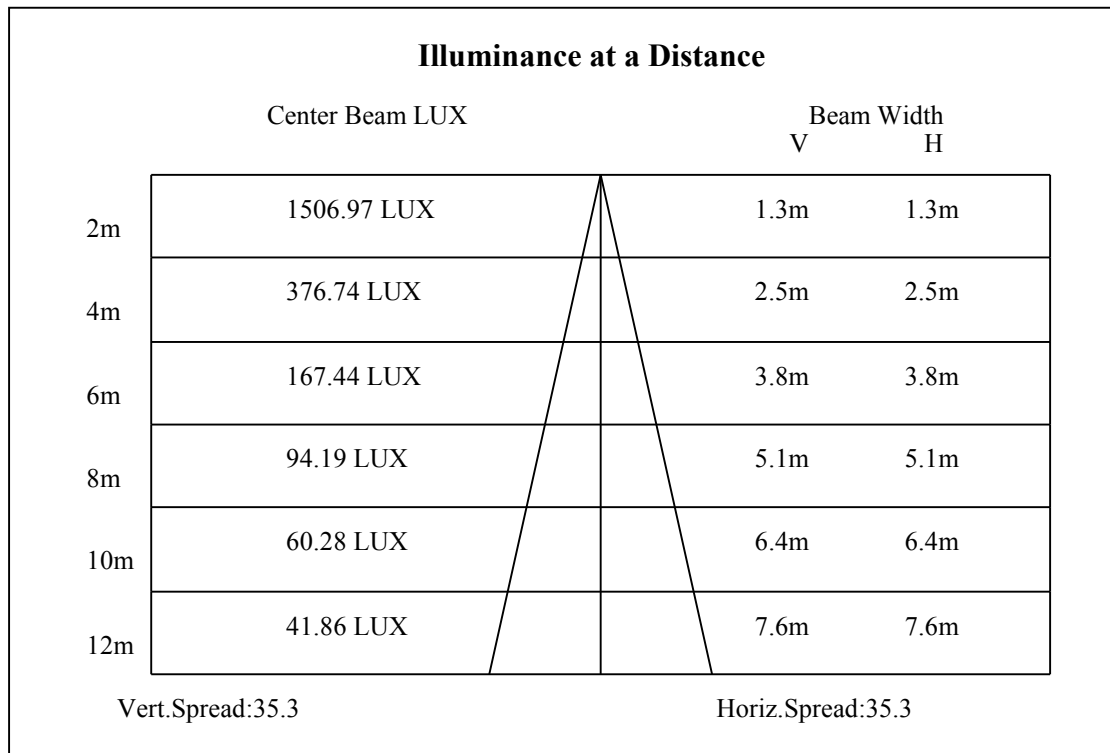
ZONAL LUMEN SUMMARY

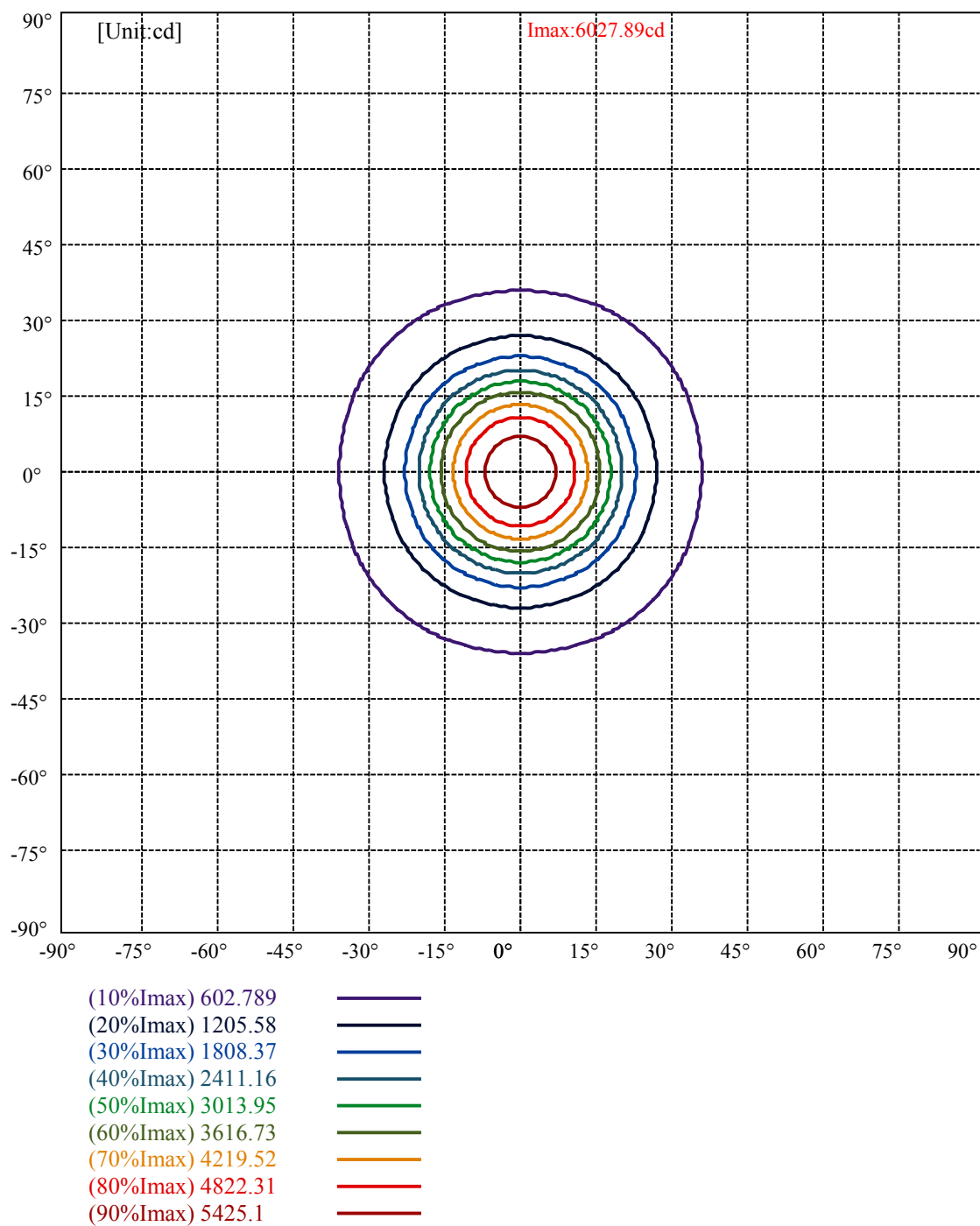
Zone	Lumens	%Lamp	%Fixt
0-30	2335.05	78.38%	87.35%
0-40	2613.37	87.73%	97.76%
0-60	2640.18	88.63%	98.76%
0-90	2670.21	89.63%	99.89%
0-120	2670.21	89.63%	99.89%
0-180	2673.20	89.73%	100.00%
60-90	36.01	1.21%	1.35%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-26.42	2138.56	71.79%	80.00%

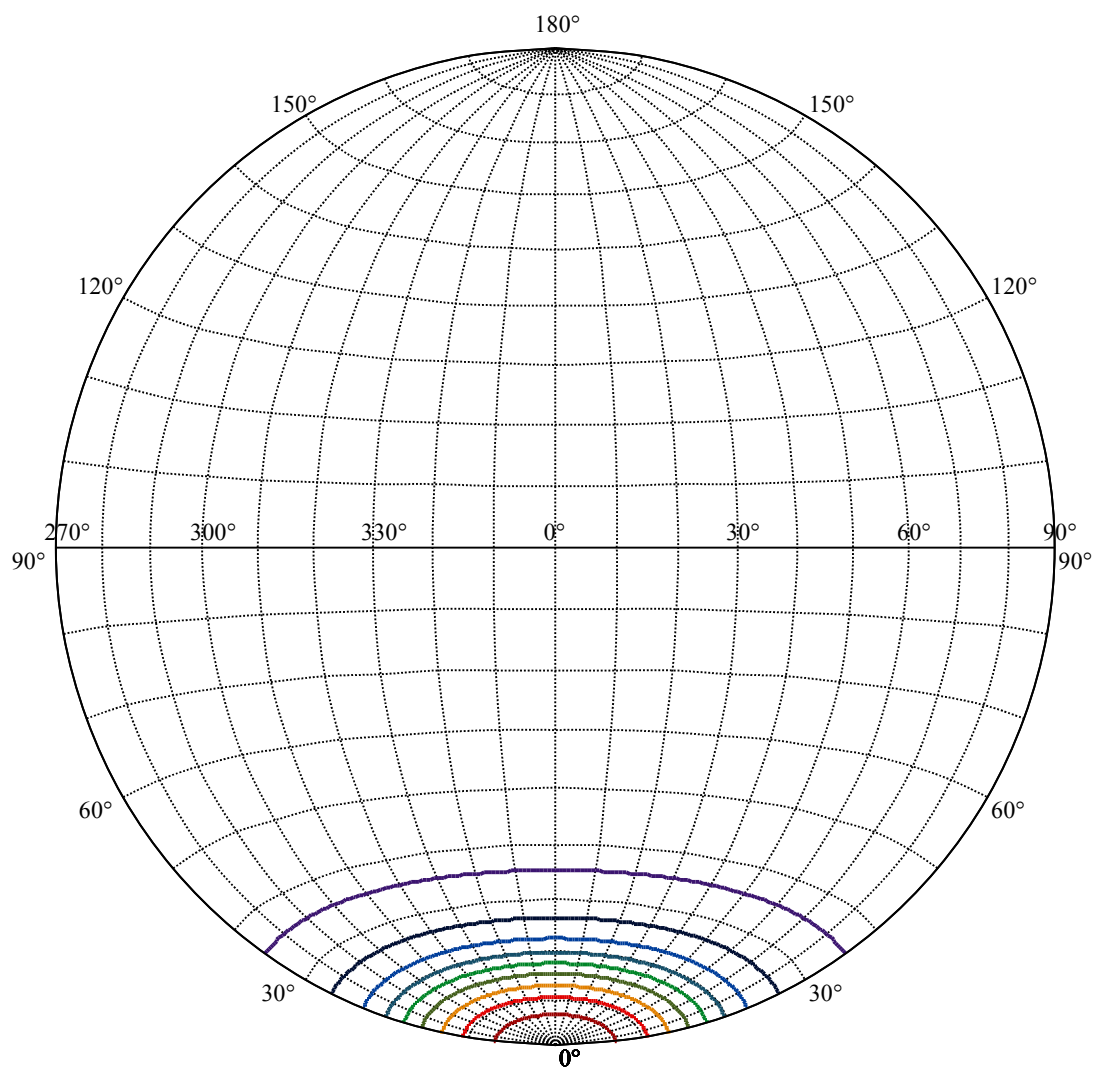
ZONAL LUMEN SUMMARY

0-10	783.05
10-20	976.35
20-30	575.65
30-40	278.32
40-50	14.80
50-60	12.01
60-70	11.98
70-80	12.04
80-90	6.01
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:6027.89

(10%Imax) 602.789

(20%Imax) 1205.58

(30%Imax) 1808.37

(40%Imax) 2411.16

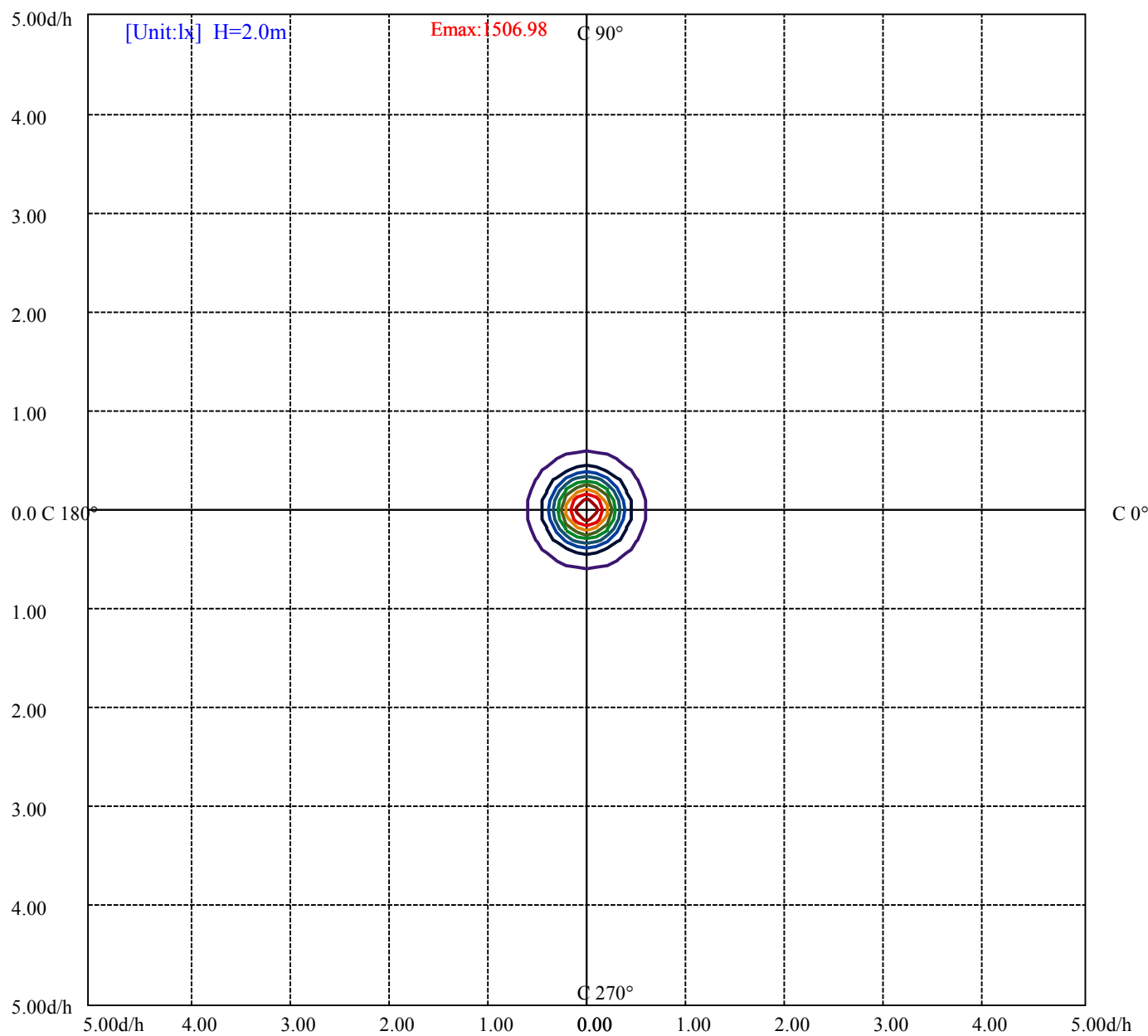
(50%Imax) 3013.95

(60%Imax) 3616.73

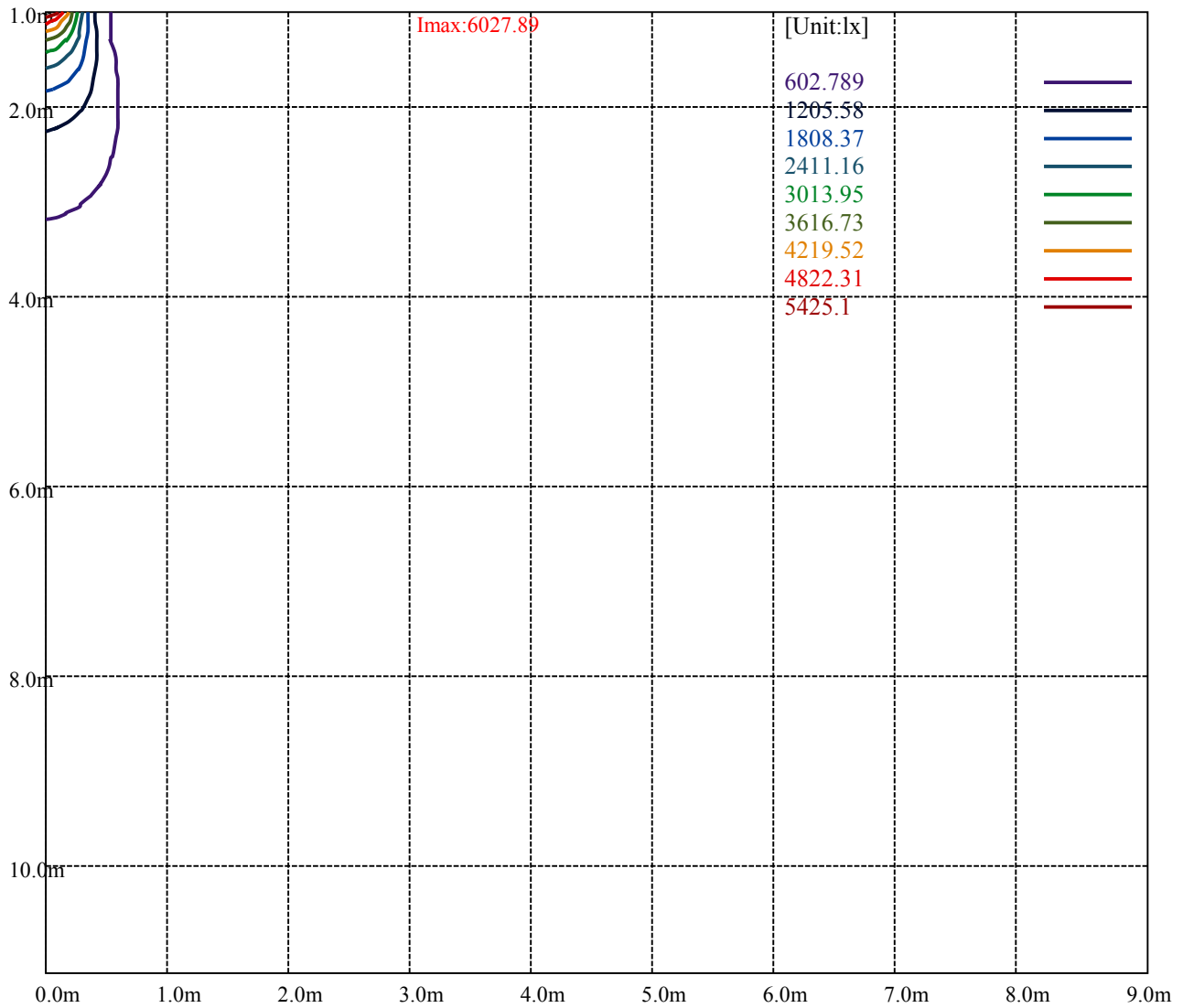
(70%Imax) 4219.52

(80%Imax) 4822.31

(90%Imax) 5425.1



(10%E _{max}) 150.697	—
(20%E _{max}) 301.395	—
(30%E _{max}) 452.09	—
(40%E _{max}) 602.7875	—
(50%E _{max}) 753.485	—
(60%E _{max}) 904.1825	—
(70%E _{max}) 1054.88	—
(80%E _{max}) 1205.575	—
(90%E _{max}) 1356.272	—



Luminance Table

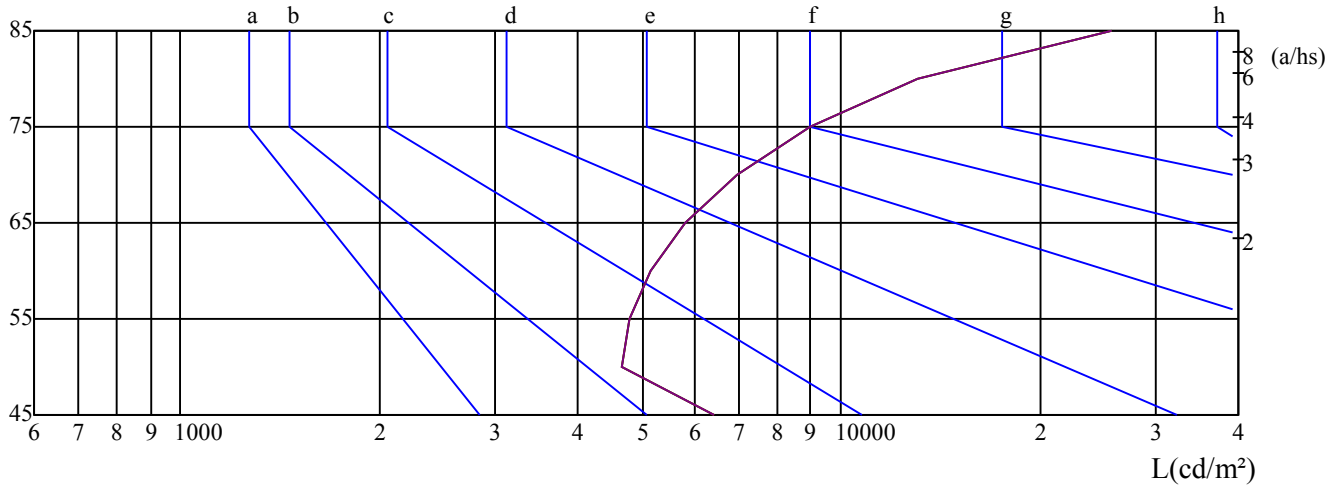
γ	45	50	55	60	65	70	75	80	85
C0	6421	4672	4778	5140	5813	6956	8959	13106	25783
C45	6421	4672	4778	5140	5813	6956	8959	13106	25783
C90	6421	4672	4778	5140	5813	6956	8959	13106	25783

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5813	5813	5813	8959	8959	8959	25783	25783	25783

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

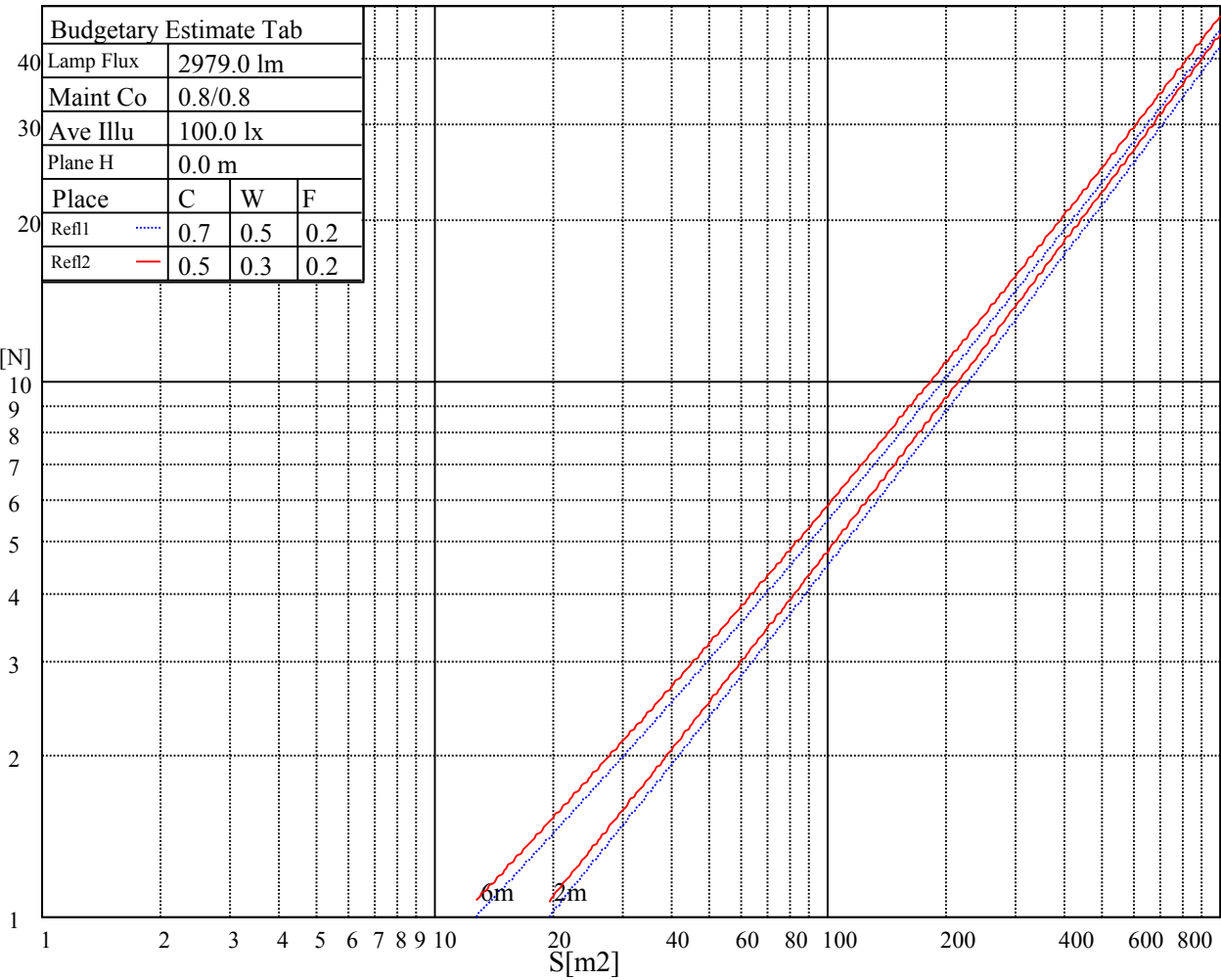
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

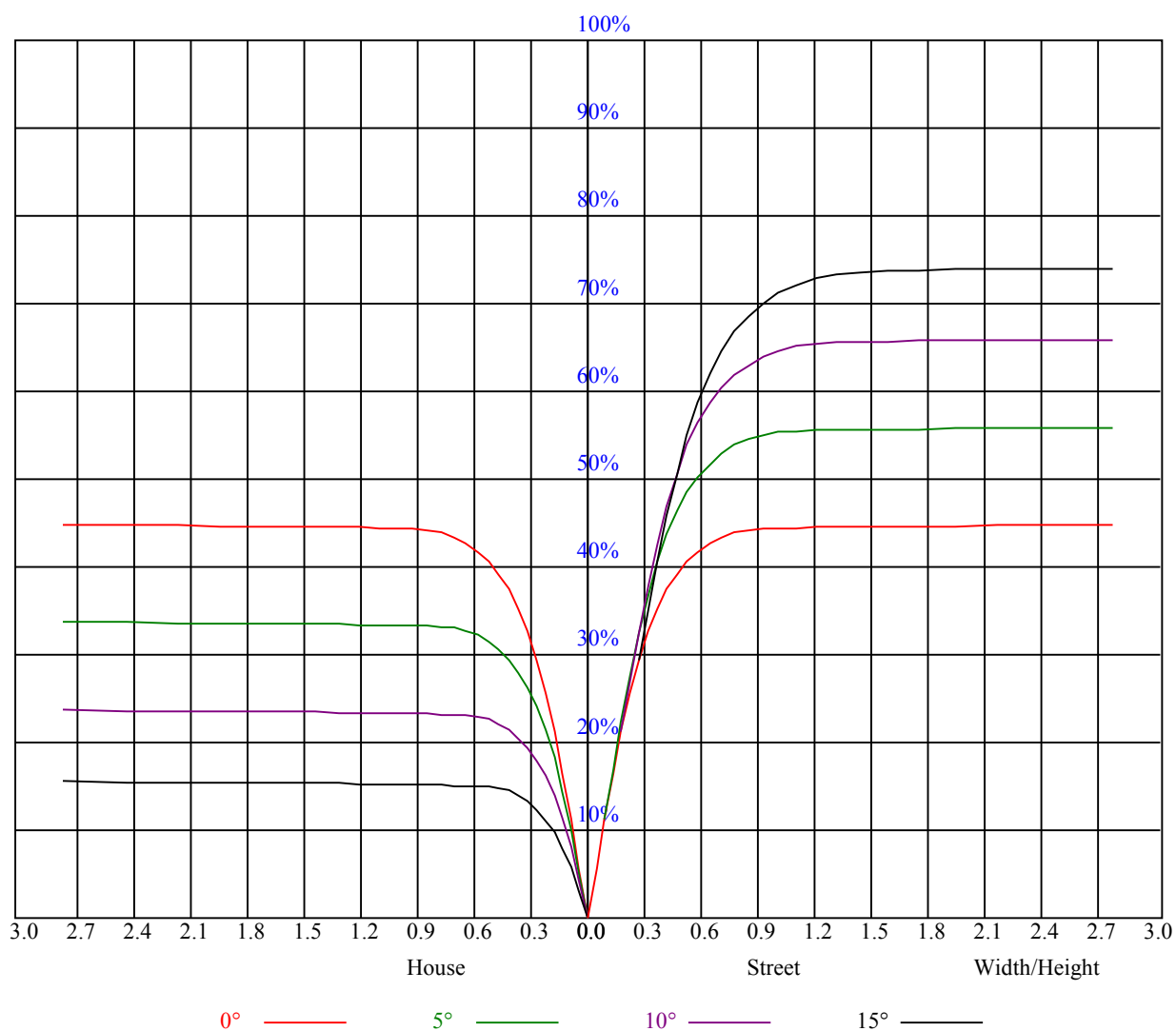
C0 ———

C45 ———

C90 ———



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	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	0.95	0.93	0.91	0.91	0.90	0.89	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	0.88	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	0.67	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	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.63
9	0.70	0.65	0.62	0.69	0.65	0.62	0.68	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	0.62	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.59



NATA 2-1676-M

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	6017.63	5754.38	5114.25	3918.38	2493.00	1364.06	1019.25	701.44	304.31		
45.0	6035.06	5770.13	5040.56	3736.69	2289.38	1295.44	969.75	616.50	308.25		
90.0	6035.06	5709.38	4866.19	3515.06	2131.88	1111.22	939.09	560.98	97.14		
135.0	6023.81	5774.06	5068.13	3906.00	2495.25	1361.81	1032.19	691.31	298.69		
180.0	6017.63	5640.19	4872.94	3612.94	2193.75	1112.91	967.67	589.67	120.71		
225.0	6035.06	5686.31	4932.00	3819.38	2432.81	1362.94	1027.29	652.11	162.00		
270.0	6035.06	5735.25	5064.19	3975.19	2681.44	1495.13	1067.06	759.94	301.50		
315.0	6023.81	5655.94	4875.75	3631.50	2156.63	1304.44	983.64	582.41	127.52		
360.0	6017.63	5754.38	5114.25	3918.38	2493.00	1364.06	1019.25	701.44	304.31		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	25.20	14.79	13.44	12.66	12.04	11.59	11.31	11.14	10.97		
45.0	21.32	14.57	13.39	12.54	12.04	11.64	11.36	11.19	11.03		
90.0	18.96	14.40	13.22	12.49	11.98	11.64	11.36	11.14	10.97		
135.0	23.91	14.68	13.44	12.60	12.09	11.70	11.42	11.19	11.03		
180.0	20.31	14.46	13.22	12.54	11.98	11.59	11.31	11.08	10.97		
225.0	22.16	14.85	13.50	12.60	12.09	11.70	11.36	11.14	11.03		
270.0	24.86	15.36	13.73	12.77	12.15	11.81	11.48	11.25	11.08		
315.0	21.26	14.63	13.50	12.54	11.93	11.59	11.31	11.08	11.03		
360.0	25.20	14.79	13.44	12.66	12.04	11.59	11.31	11.14	10.97		
C/γ(°)	90.0										
0.0	10.91										
45.0	10.91										
90.0	10.91										
135.0	10.91										
180.0	10.91										
225.0	10.91										
270.0	10.91										
315.0	10.91										
360.0	10.91										