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## NATA

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Client:

LumCAT: 2-1103-A

Luminaire: H42135AC

Report No: nata-0100

Test No:

LampCAT: ParagonLED CBAC-83-30135

Lamp flux(lm): 688.6

Number of Lamps: 1

Length(mm): 70

Phm Type: C

Voltage(V): 219.9000

Current(A): 0.0540

Power (W): 10.6000

PF: 0.8930

Ballast type:

Width(mm): 70

Height(mm): 0

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## Photometric Results

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Lumens(lm): 637.36, Efficiency(%): 92.56% , Luminous Efficacy(lm/W): 60.13

Central intensity(cd): 1831.314, Maximum intensity(cd): 1831.314

Angle of maximum intensity: C=0.0  $\gamma$ =0.0

Beam Angle(50%Imax): [C0/180]Total=25.8

[C90/270]Total=25.8

Field angle(10%Imax): [C0/180]Total=71.2

[C90/270]Total=71.2

Maximum s/h(1/2): C0\_180=0.43 C90\_270=0.43

Maximum s/h(1/4): C0\_180=0.46 C90\_270=0.46

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 92.93%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 98.479%

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Equipment: gms1980  
Temperature(°C): 25.0

Date: 2016/4/27  
Humidity(%): 60.0%

Operator: Jaye  
Distance(m): 7.42

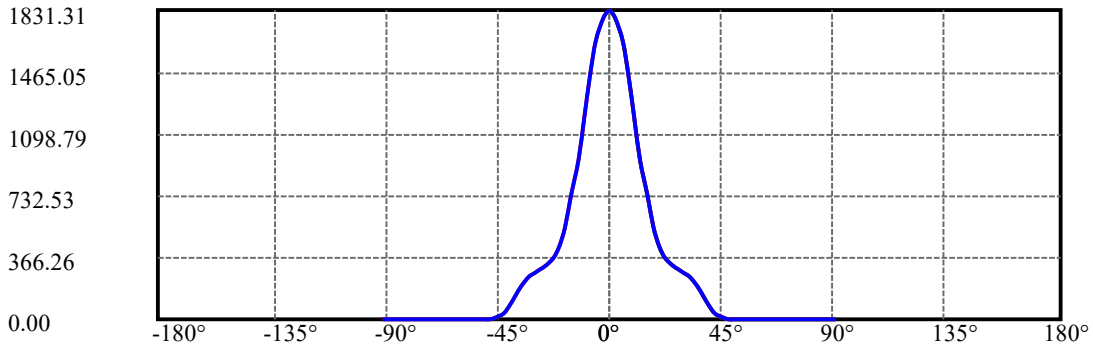
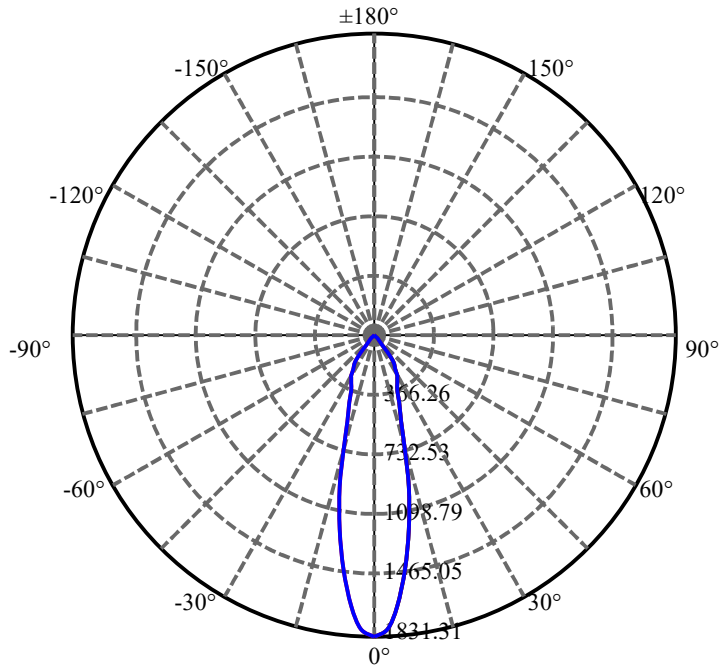
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1831.314	2.738	2.738	.398%	.430%
2.5	1787.351	21.372	24.111	3.104%	3.783%
5.0	1650.522	39.435	63.545	5.727%	9.970%
7.5	1438.982	51.489	115.035	7.477%	18.049%
10.0	1197.188	56.990	172.024	8.276%	26.990%
12.5	946.241	56.144	228.168	8.153%	35.799%
15.0	728.052	51.656	279.824	7.502%	43.904%
17.5	547.935	45.168	324.992	6.559%	50.990%
20.0	431.422	40.450	365.442	5.874%	57.337%
22.5	360.344	37.802	403.244	5.490%	63.268%
25.0	319.451	37.010	440.254	5.375%	69.075%
27.5	295.281	37.377	477.631	5.428%	74.939%
30.0	277.347	38.015	515.646	5.521%	80.903%
32.5	248.470	36.598	552.244	5.315%	86.645%
35.0	197.295	31.022	583.266	4.505%	91.513%
37.5	136.320	22.749	606.015	3.304%	95.082%
40.0	74.959	13.209	619.224	1.918%	97.154%
42.5	29.455	5.455	624.679	.792%	98.010%
45.0	10.282	1.993	626.672	.289%	98.323%
47.5	3.400	0.687	627.359	.100%	98.431%
50.0	2.684	0.564	627.923	.082%	98.519%
52.5	2.601	0.566	628.488	.082%	98.608%
55.0	2.546	0.572	629.06	.083%	98.698%
57.5	2.464	0.570	629.63	.083%	98.787%
60.0	2.464	0.585	630.215	.085%	98.879%
62.5	2.422	0.589	630.804	.086%	98.971%
65.0	2.409	0.598	631.402	.087%	99.065%
67.5	2.395	0.607	632.009	.088%	99.160%
70.0	2.367	0.610	632.619	.089%	99.256%
72.5	2.367	0.619	633.238	.090%	99.353%
75.0	2.395	0.634	633.872	.092%	99.453%
77.5	2.354	0.630	634.502	.091%	99.551%
80.0	2.367	0.639	635.141	.093%	99.652%
82.5	2.326	0.632	635.773	.092%	99.751%
85.0	2.354	0.643	636.416	.093%	99.852%
87.5	2.299	0.630	637.045	.091%	99.951%
90.0	2.299	0.315	637.36	.046%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	515.65	74.88%	80.90%
0-40	619.22	89.93%	97.15%
0-60	630.21	91.52%	98.88%
0-90	637.05	92.51%	99.95%
0-120	637.05	92.51%	99.95%
0-180	637.36	92.56%	100.00%
60-90	7.42	1.08%	1.16%
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%
0-29.62	509.89	74.05%	80.00%

ZONAL LUMEN SUMMARY

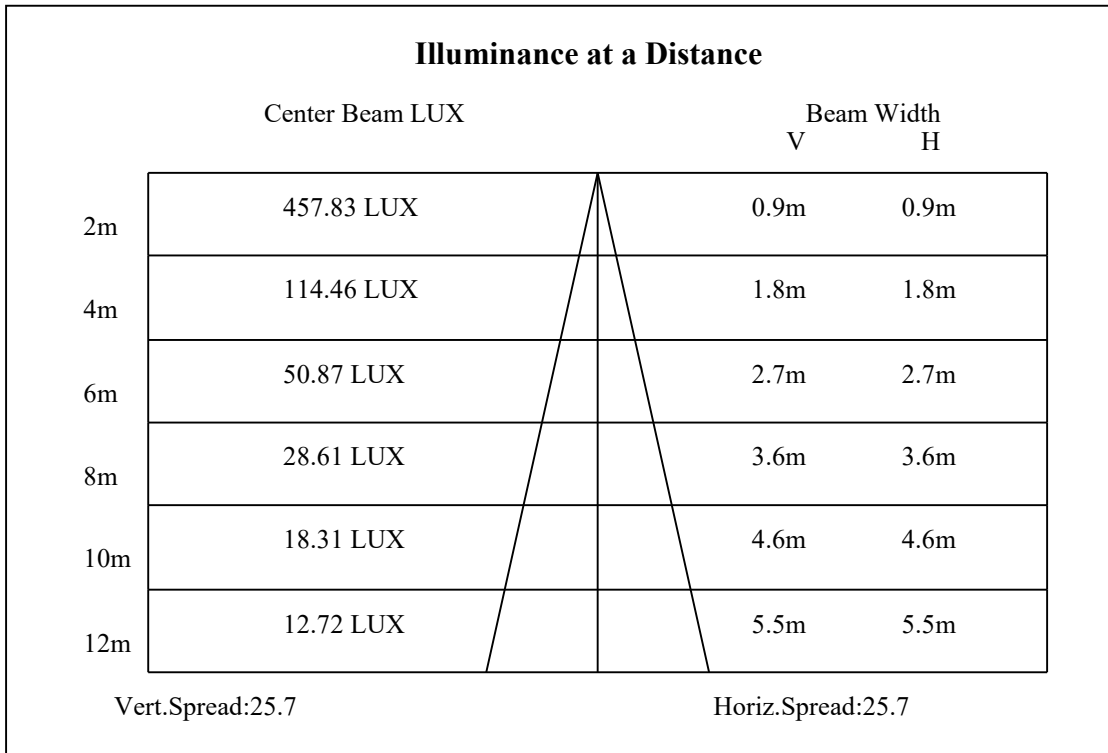
0-10	172.02
10-20	193.42
20-30	150.20
30-40	103.58
40-50	8.70
50-60	2.29
60-70	2.40
70-80	2.52
80-90	1.90
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

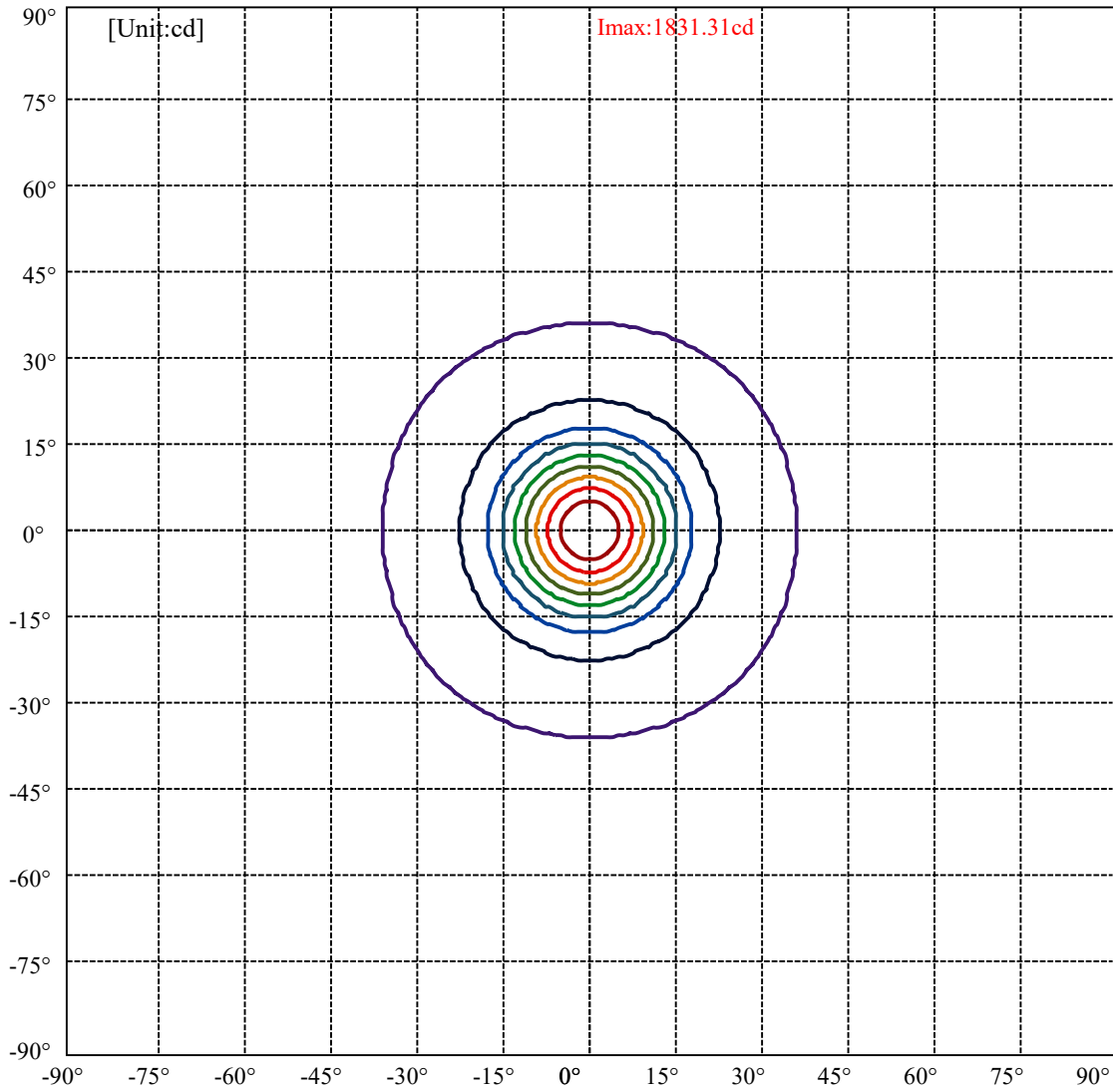


C0(Max): ———  
 C0/C180: ———  
 C90/C270: ———

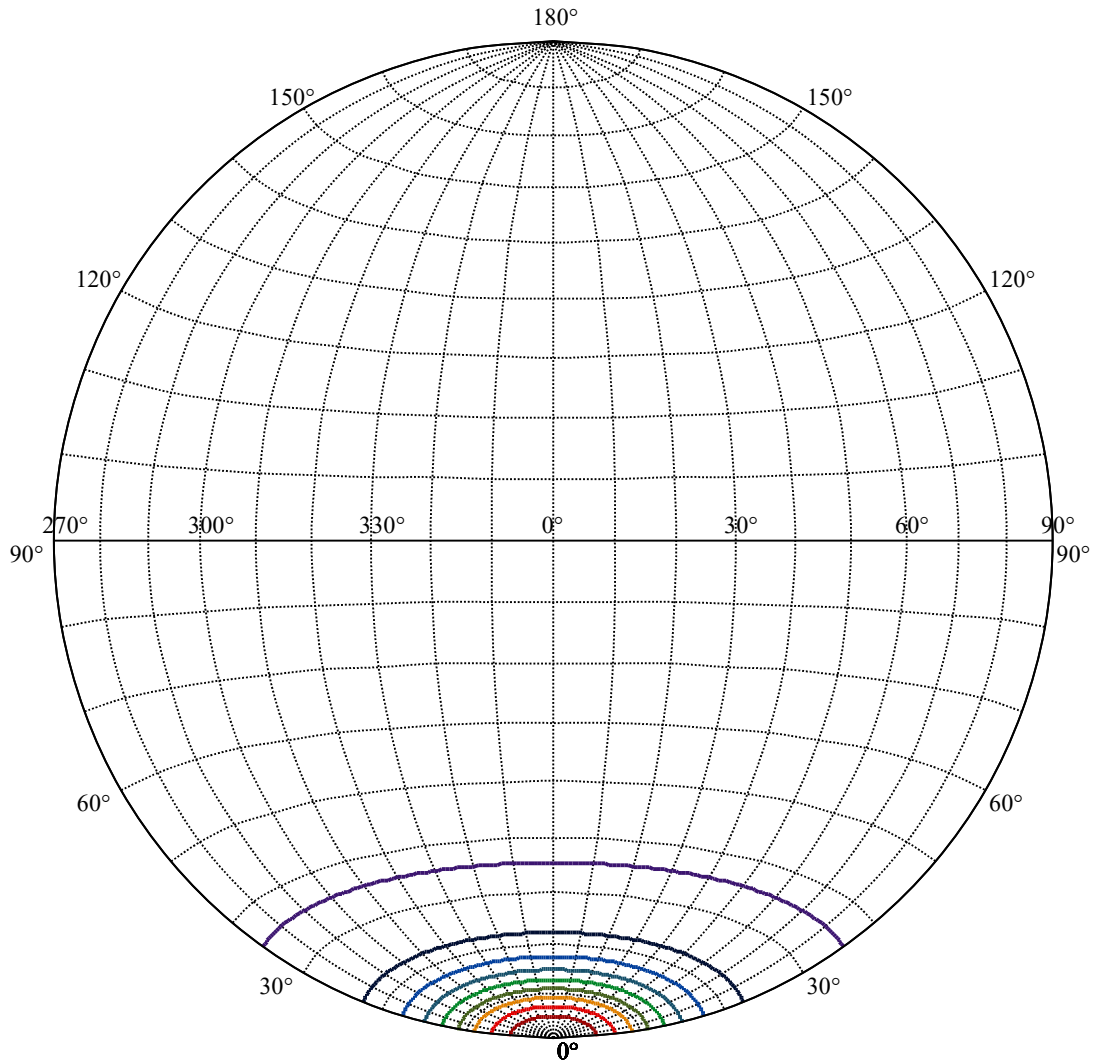
Field angle(10%Imax):C0/180Left:35.6 Right:35.6  
 :C90/270Left:35.6 Right:35.6

Beam Angle(50%Imax):C0/180Left:12.9 Right:12.9  
 :C90/270Left:12.9 Right:12.9





(10%Imax)	183.131	—
(20%Imax)	366.263	—
(30%Imax)	549.394	—
(40%Imax)	732.525	—
(50%Imax)	915.657	—
(60%Imax)	1098.79	—
(70%Imax)	1281.92	—
(80%Imax)	1465.05	—
(90%Imax)	1648.18	—



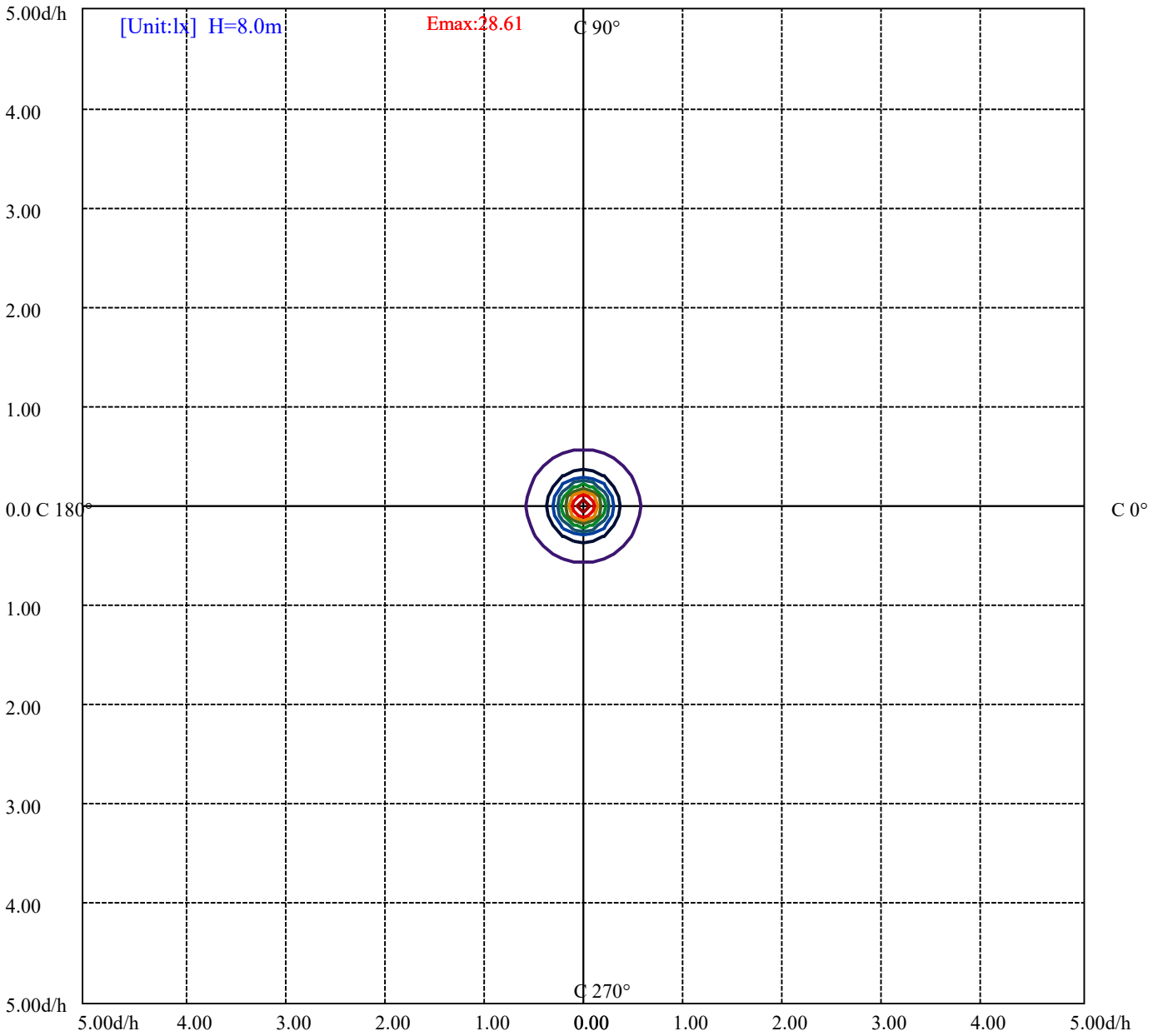
House

[Unit:cd]

Road

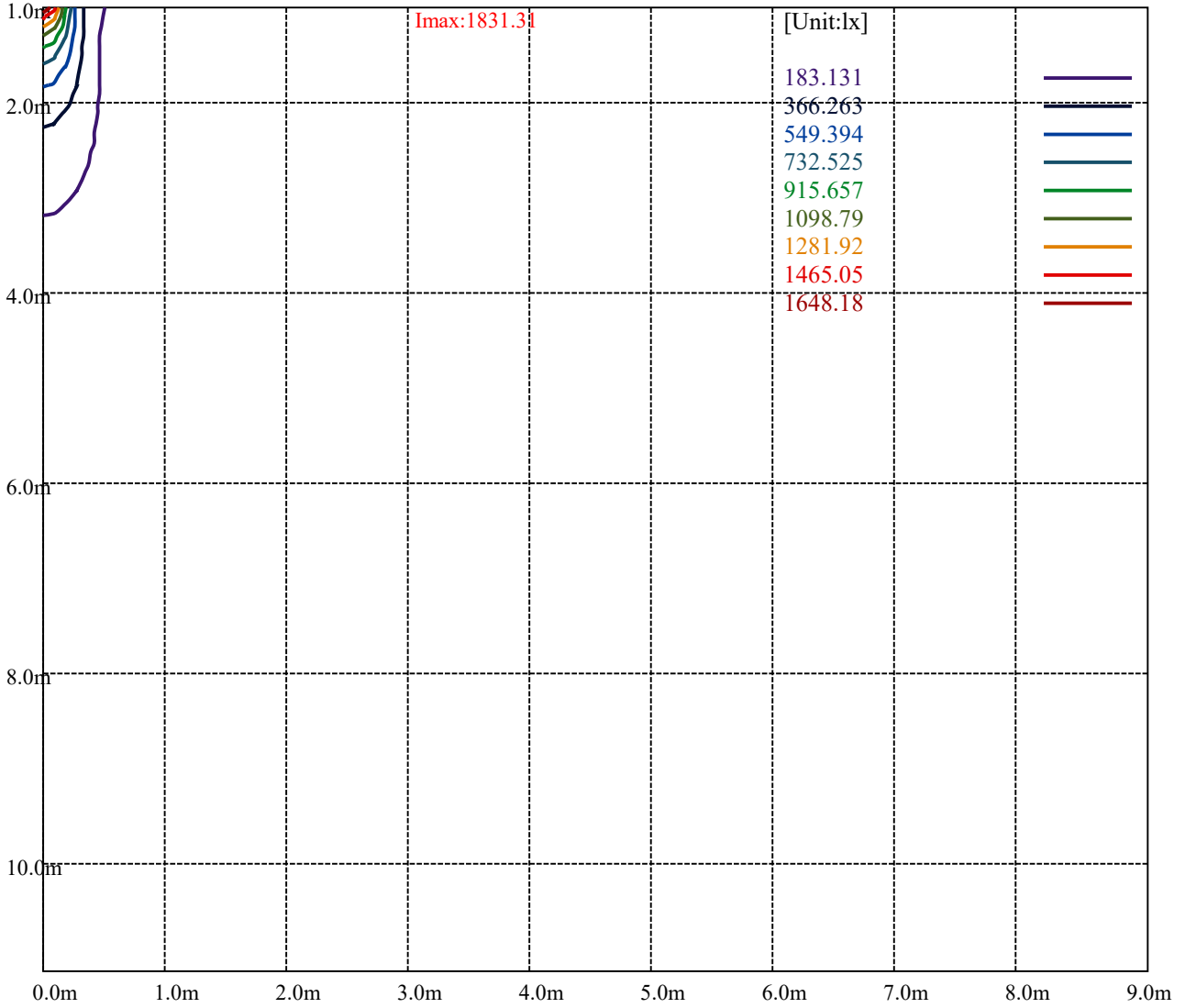
Imax:1831.31

(10%Imax)	183.131	—
(20%Imax)	366.263	—
(30%Imax)	549.394	—
(40%Imax)	732.525	—
(50%Imax)	915.657	—
(60%Imax)	1098.79	—
(70%Imax)	1281.92	—
(80%Imax)	1465.05	—
(90%Imax)	1648.18	—



- (10%Emax) 2.861422
- (20%Emax) 5.722844
- (30%Emax) 8.584266
- (40%Emax) 11.44569
- (50%Emax) 14.30711
- (60%Emax) 17.16859
- (70%Emax) 20.03
- (80%Emax) 22.89141
- (90%Emax) 25.75281





Luminance Table

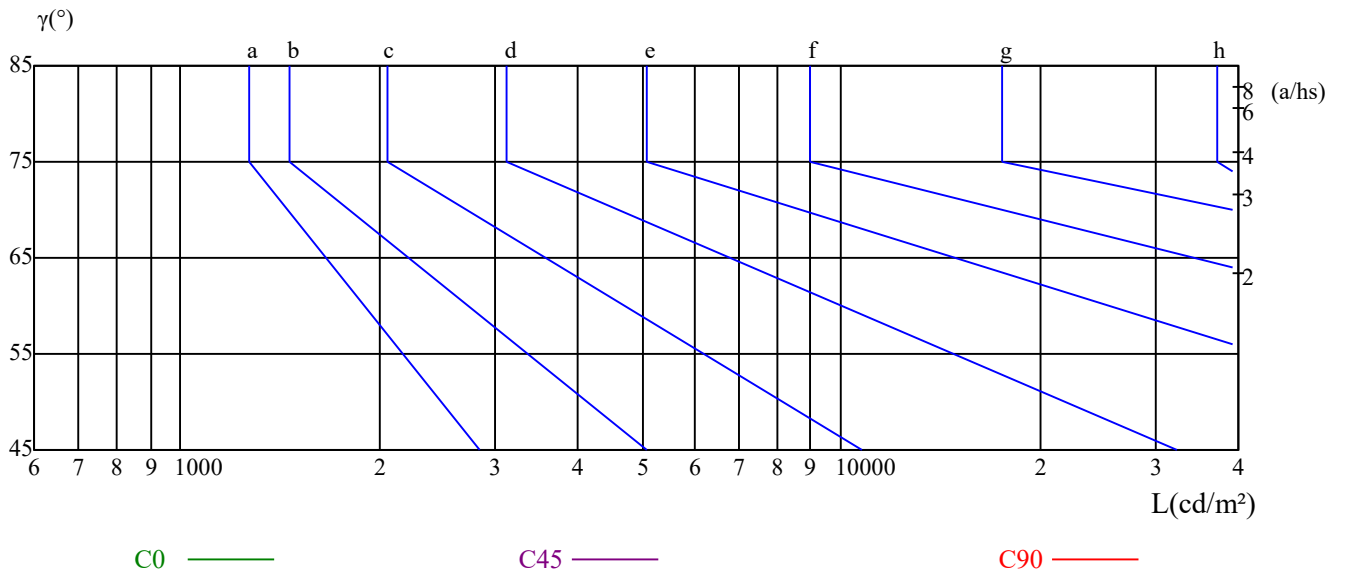
$\gamma$	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

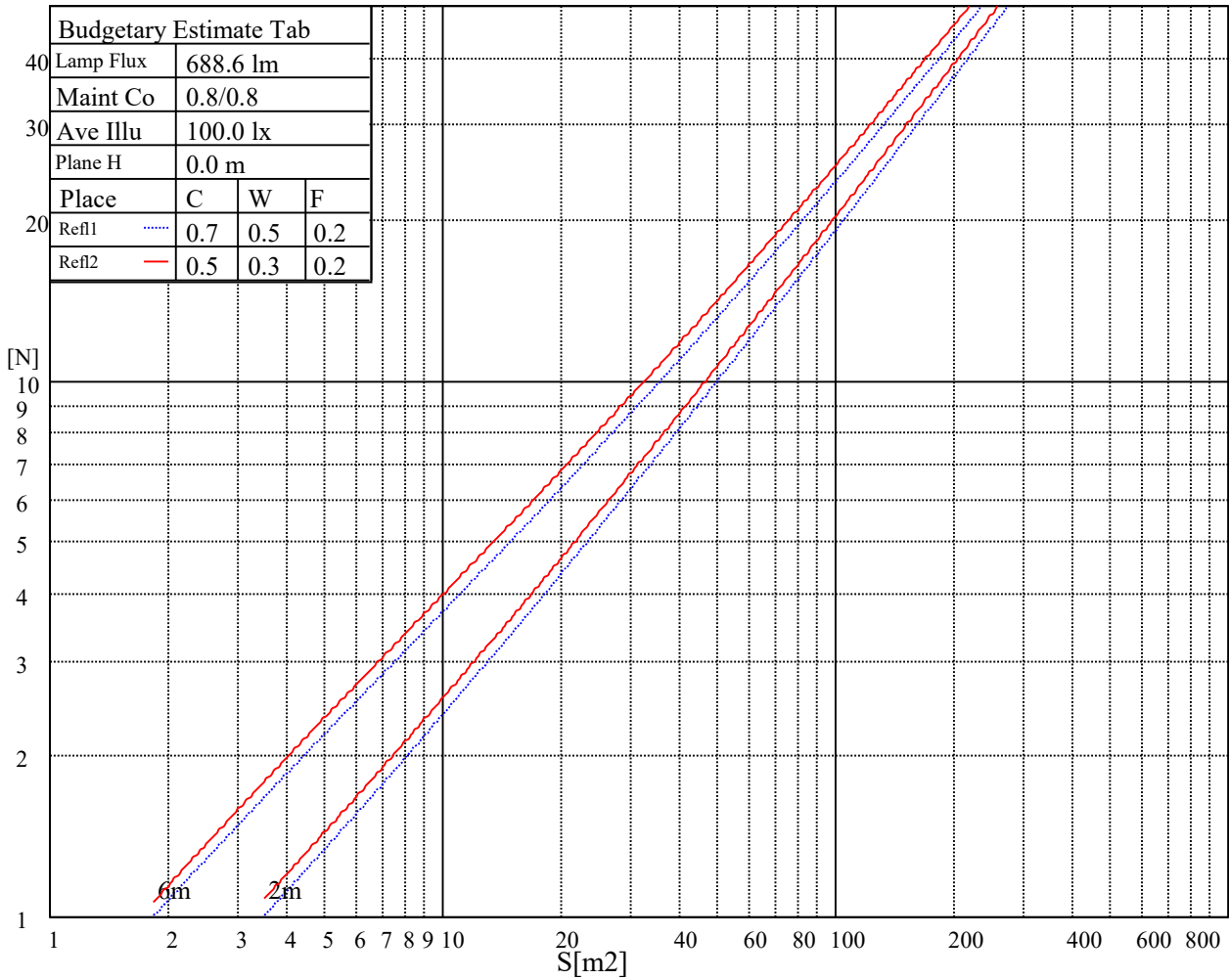
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

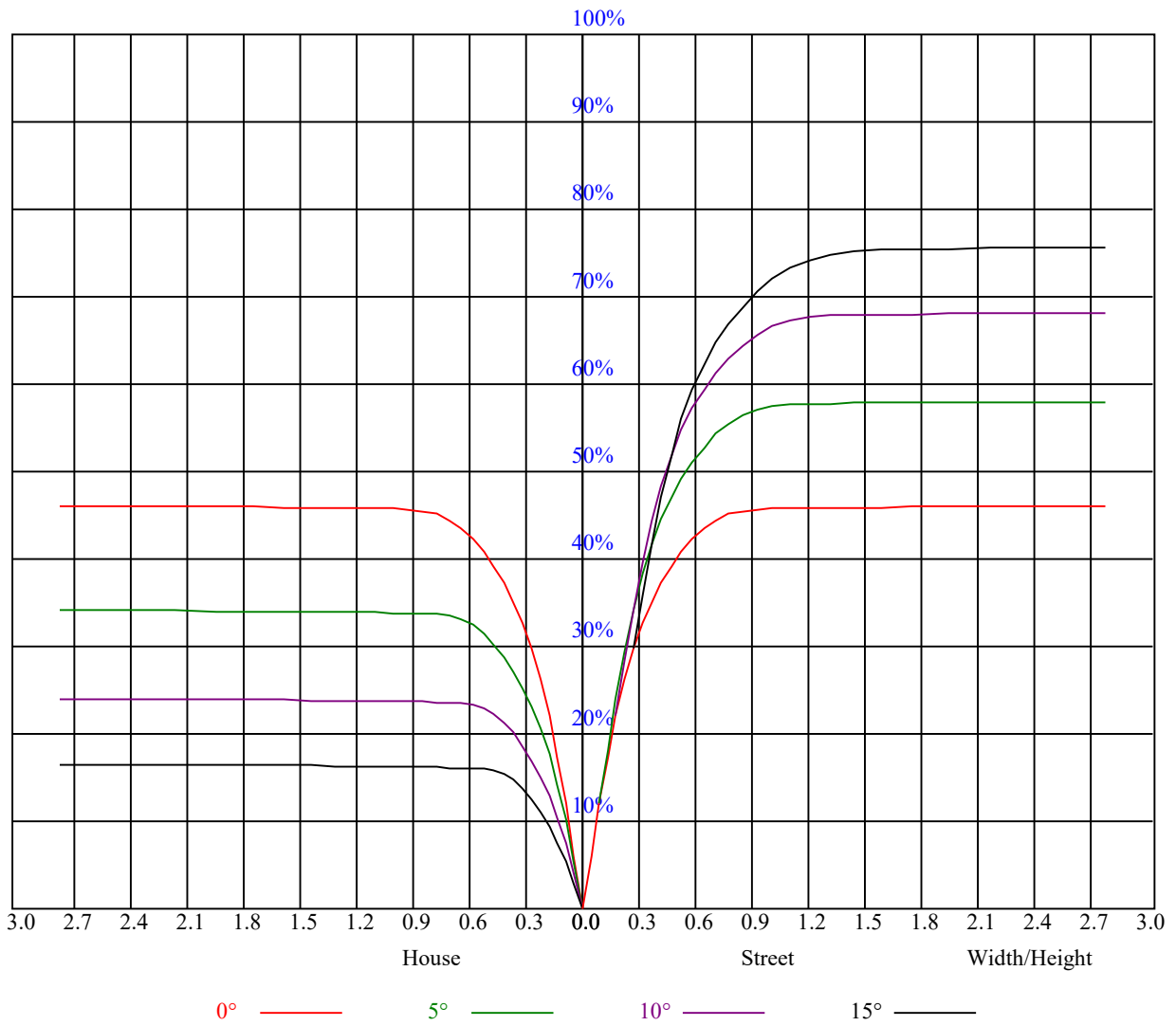
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

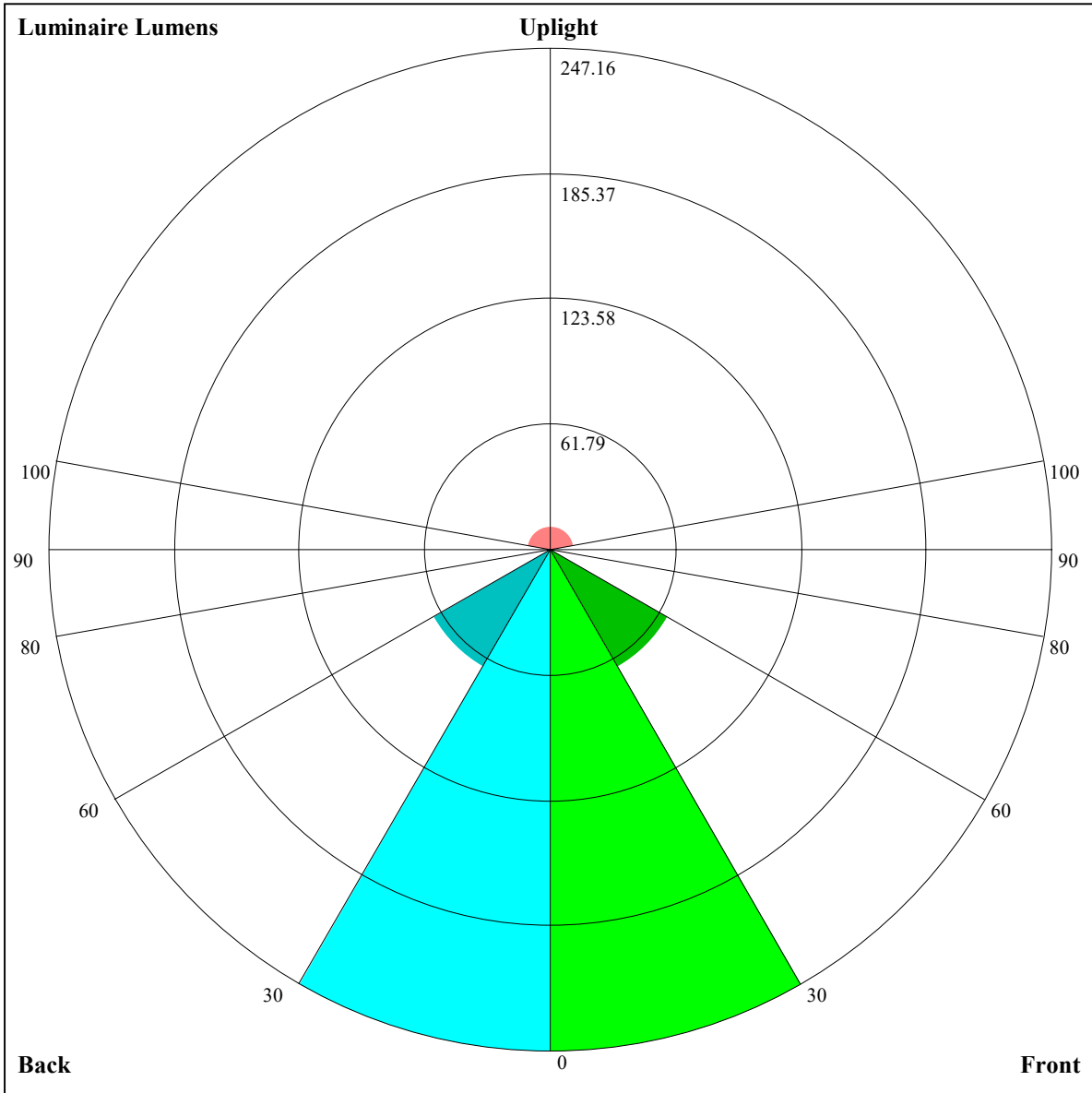
Luminance Limiting Curve





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	1.11	1.11	1.11	1.08	1.08	1.08	1.03	1.03	1.03	0.99	0.99	0.99	0.95	0.95	0.95	0.93
1	1.03	1.01	0.99	1.01	0.99	0.97	0.97	0.96	0.94	0.94	0.93	0.92	0.91	0.90	0.89	0.87
2	0.97	0.94	0.91	0.96	0.93	0.90	0.93	0.90	0.88	0.90	0.88	0.86	0.87	0.86	0.84	0.83
3	0.92	0.88	0.85	0.91	0.87	0.84	0.88	0.85	0.83	0.86	0.83	0.81	0.84	0.82	0.80	0.79
4	0.87	0.83	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
5	0.83	0.78	0.75	0.82	0.78	0.74	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.71
6	0.79	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.68
7	0.76	0.71	0.68	0.75	0.71	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	0.64	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.66	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	0.64	0.61	0.68	0.64	0.61	0.67	0.64	0.61	0.60
10	0.67	0.62	0.59	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.65	0.61	0.59	0.58





Luminaire Lumens:

FL=247.16,FM=66.49,FH=2.48,FVH=1.29

BL=247.16,BM=66.49,BH=2.48,BVH=1.29

UL=2.51,UH=11.93

BUG Rating:B1-U2-G0

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	1823.47	1788.51	1656.92	1430.09	1219.55	980.00	760.93	579.58	454.82
45.0	1827.32	1791.43	1652.52	1445.67	1194.94	938.88	726.30	543.24	427.95
90.0	1826.77	1778.05	1640.13	1434.49	1179.31	927.20	698.67	525.68	414.96
135.0	1847.69	1791.43	1652.52	1445.67	1194.94	938.88	726.30	543.24	427.95
180.0	1823.47	1788.51	1656.92	1430.09	1219.55	980.00	760.93	579.58	454.82
225.0	1827.32	1791.43	1652.52	1445.67	1194.94	938.88	726.30	543.24	427.95
270.0	1826.77	1778.05	1640.13	1434.49	1179.31	927.20	698.67	525.68	414.96
315.0	1847.69	1791.43	1652.52	1445.67	1194.94	938.88	726.30	543.24	427.95
360.0	1823.47	1788.51	1656.92	1430.09	1219.55	980.00	760.93	579.58	454.82
C/γ(°)	22.5	25.0	27.5	30.0	32.5	35.0	37.5	40.0	42.5
0.0	375.26	327.31	297.19	278.70	238.56	185.10	140.01	86.33	39.20
45.0	357.54	318.12	295.10	276.88	250.01	200.41	137.75	75.21	28.08
90.0	351.04	314.26	293.73	276.93	255.30	203.27	129.77	63.09	22.46
135.0	357.54	318.12	295.10	276.88	250.01	200.41	137.75	75.21	28.08
180.0	375.26	327.31	297.19	278.70	238.56	185.10	140.01	86.33	39.20
225.0	357.54	318.12	295.10	276.88	250.01	200.41	137.75	75.21	28.08
270.0	351.04	314.26	293.73	276.93	255.30	203.27	129.77	63.09	22.46
315.0	357.54	318.12	295.10	276.88	250.01	200.41	137.75	75.21	28.08
360.0	375.26	327.31	297.19	278.70	238.56	185.10	140.01	86.33	39.20
C/γ(°)	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0
0.0	15.80	4.07	2.64	2.53	2.48	2.42	2.42	2.42	2.37
45.0	9.52	3.30	2.64	2.59	2.53	2.42	2.42	2.37	2.37
90.0	6.28	2.92	2.81	2.70	2.64	2.59	2.59	2.53	2.53
135.0	9.52	3.30	2.64	2.59	2.53	2.42	2.42	2.37	2.37
180.0	15.80	4.07	2.64	2.53	2.48	2.42	2.42	2.42	2.37
225.0	9.52	3.30	2.64	2.59	2.53	2.42	2.42	2.37	2.37
270.0	6.28	2.92	2.81	2.70	2.64	2.59	2.59	2.53	2.53
315.0	9.52	3.30	2.64	2.59	2.53	2.42	2.42	2.37	2.37
360.0	15.80	4.07	2.64	2.53	2.48	2.42	2.42	2.42	2.37
C/γ(°)	67.5	70.0	72.5	75.0	77.5	80.0	82.5	85.0	87.5
0.0	2.31	2.31	2.37	2.42	2.31	2.31	2.26	2.26	2.31
45.0	2.37	2.31	2.31	2.31	2.26	2.31	2.26	2.31	2.26
90.0	2.53	2.53	2.48	2.53	2.59	2.53	2.53	2.53	2.37
135.0	2.37	2.31	2.31	2.31	2.26	2.31	2.26	2.31	2.26
180.0	2.31	2.31	2.37	2.42	2.31	2.31	2.26	2.26	2.31
225.0	2.37	2.31	2.31	2.31	2.26	2.31	2.26	2.31	2.26
270.0	2.53	2.53	2.48	2.53	2.59	2.53	2.53	2.53	2.37
315.0	2.37	2.31	2.31	2.31	2.26	2.31	2.26	2.31	2.26
360.0	2.31	2.31	2.37	2.42	2.31	2.31	2.26	2.26	2.31
C/γ(°)	90.0								
0.0	2.26								
45.0	2.26								
90.0	2.42								
135.0	2.26								
180.0	2.26								
225.0	2.26								
270.0	2.42								
315.0	2.26								
360.0	2.26								