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NATA

Client:

LumCAT: CR28L25075145BC

Luminaire:

Report No:

Voltage(V): 21.2500

Test No: GC2019011615

Current(A): 0.7000

LampCAT: CREE XPE2

Power (W): 14.8750

Lamp flux(lm): 1782.4

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 250

Width(mm): 75

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1673.47, Efficiency(%): 93.89% , Luminous Efficacy(lm/W): 112.50

Central intensity(cd): 529.200, Maximum intensity(cd): 747.450

Angle of maximum intensity: C=150.0 γ =55.0

Beam Angle(50%Imax): [C0/180]Total=145.4

[C90/270]Total=71.9

Field angle(10%Imax): [C0/180]Total=155.7

[C90/270]Total=123.7

Maximum s/h(1/2): C0_180=1.59 C90_270=1.54

Maximum s/h(1/4): C0_180=1.79 C90_270=1.56

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 93.89%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 80.006%

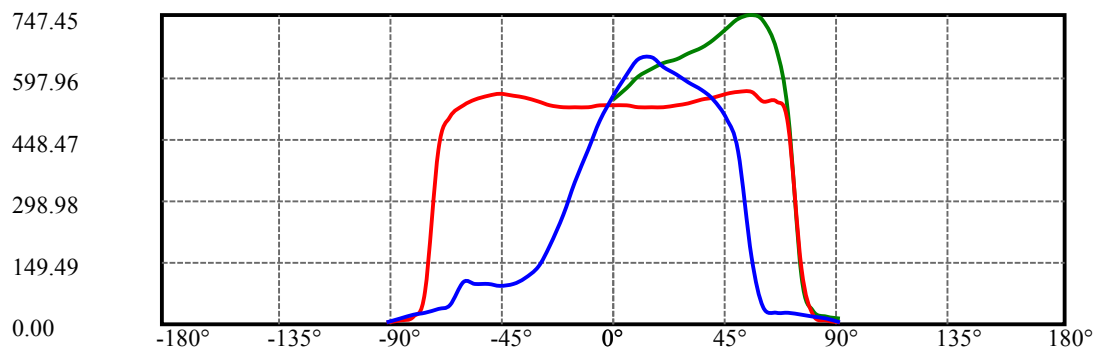
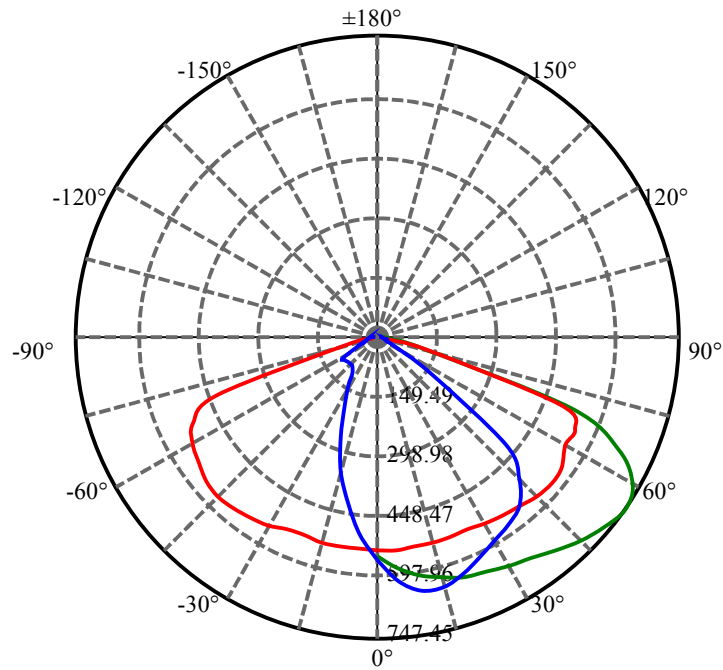
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	541.284	0.000	0	.000%	.000%
5.0	540.530	12.933	12.933	.726%	.773%
10.0	531.713	38.357	51.29	2.152%	3.065%
15.0	515.091	62.096	113.386	3.484%	6.776%
20.0	490.793	82.899	196.285	4.651%	11.729%
25.0	465.823	100.331	296.616	5.629%	17.725%
30.0	448.001	115.645	412.261	6.488%	24.635%
35.0	436.648	130.271	542.532	7.309%	32.420%
40.0	429.541	144.517	687.049	8.108%	41.055%
45.0	421.610	157.598	844.647	8.842%	50.473%
50.0	408.886	167.814	1012.461	9.415%	60.501%
55.0	369.218	169.186	1181.646	9.492%	70.611%
60.0	310.976	157.225	1338.871	8.821%	80.006%
65.0	247.247	135.705	1474.576	7.614%	88.115%
70.0	175.934	107.152	1581.728	6.012%	94.518%
75.0	45.131	57.783	1639.511	3.242%	97.971%
80.0	22.573	18.116	1657.627	1.016%	99.053%
85.0	14.358	10.035	1667.661	.563%	99.653%
90.0	6.841	5.805	1673.466	.326%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	412.26	23.13%	24.64%
0-40	687.05	38.55%	41.06%
0-60	1338.87	75.12%	80.01%
0-90	1667.66	93.56%	99.65%
0-120	1667.66	93.56%	99.65%
0-180	1673.47	93.89%	100.00%
60-90	486.02	27.27%	29.04%
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%
0-60.00	1338.77	75.11%	80.00%

ZONAL LUMEN SUMMARY

0-10	51.29
10-20	144.99
20-30	215.98
30-40	274.79
40-50	325.41
50-60	326.41
60-70	242.86
70-80	75.90
80-90	10.03
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



C150(Max): —————

C0/C180: —————

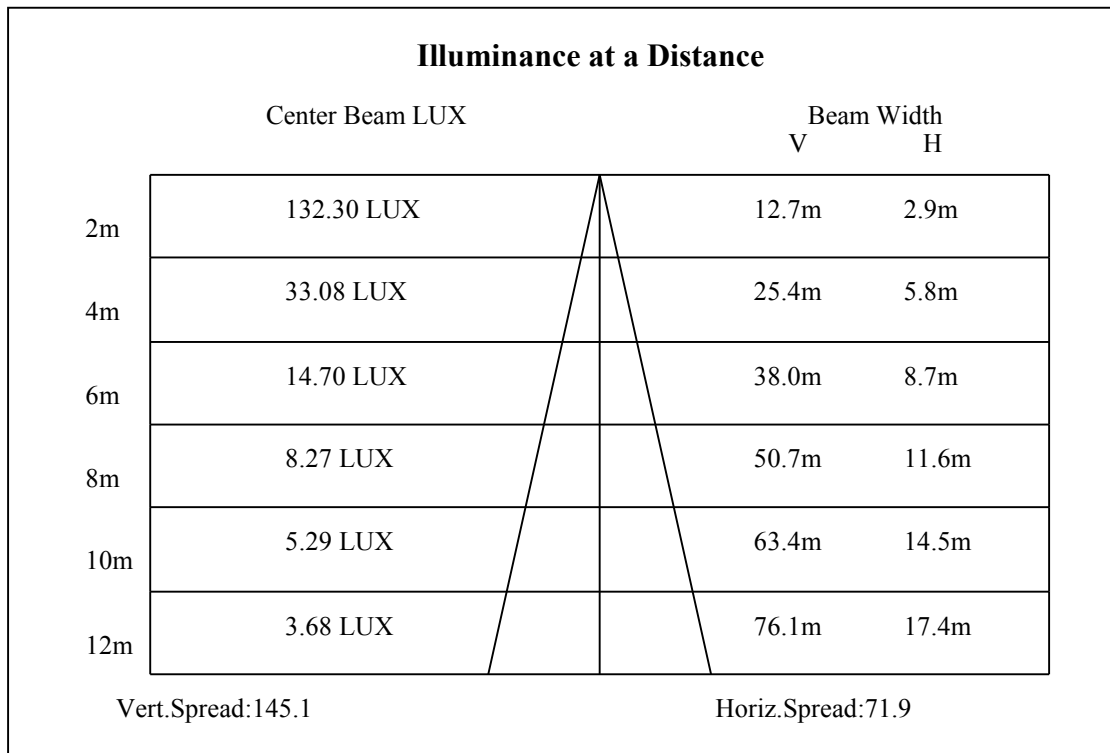
C90/C270: —————

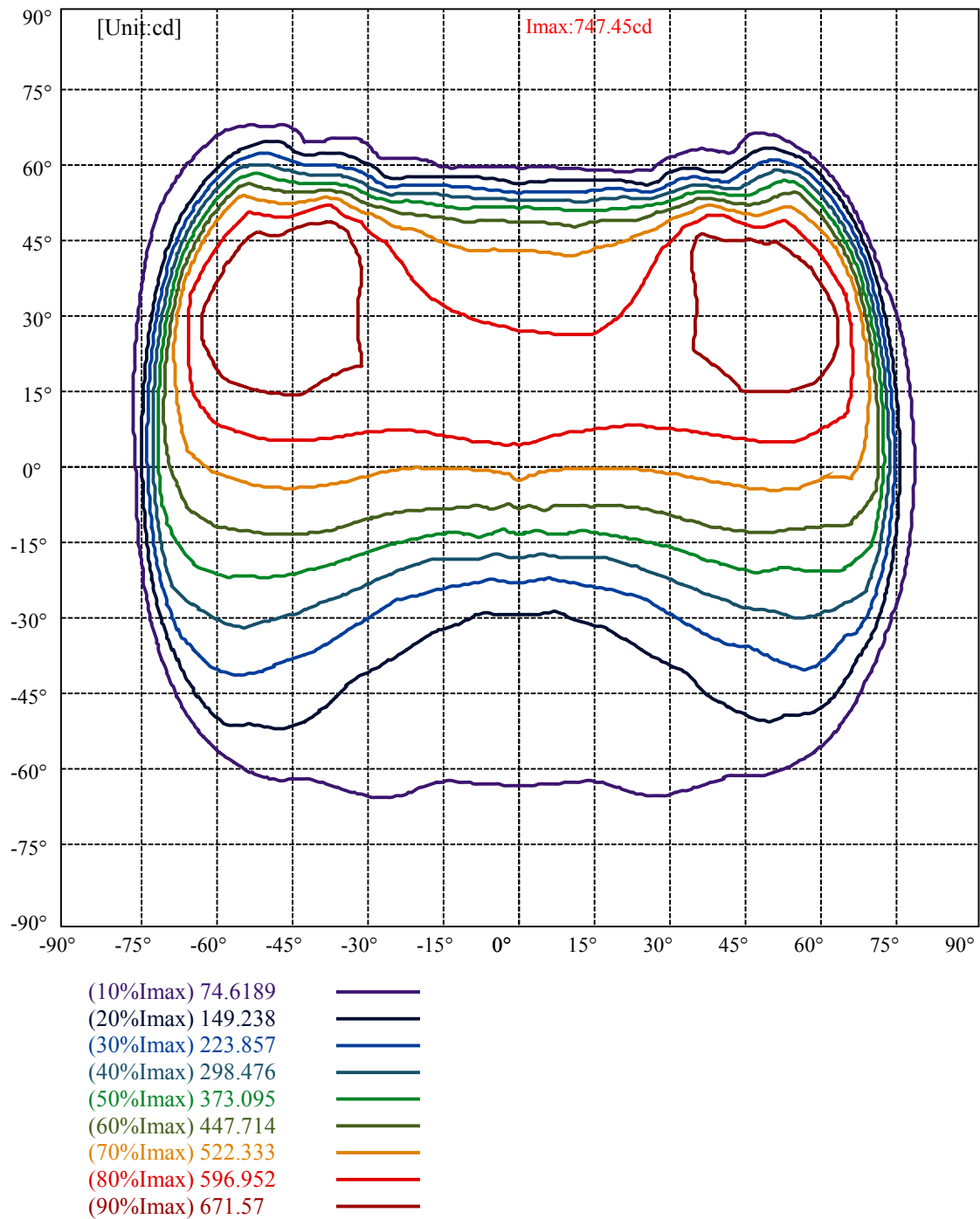
Field angle(10%Imax):C0/180Left:77.1 Right:78.6

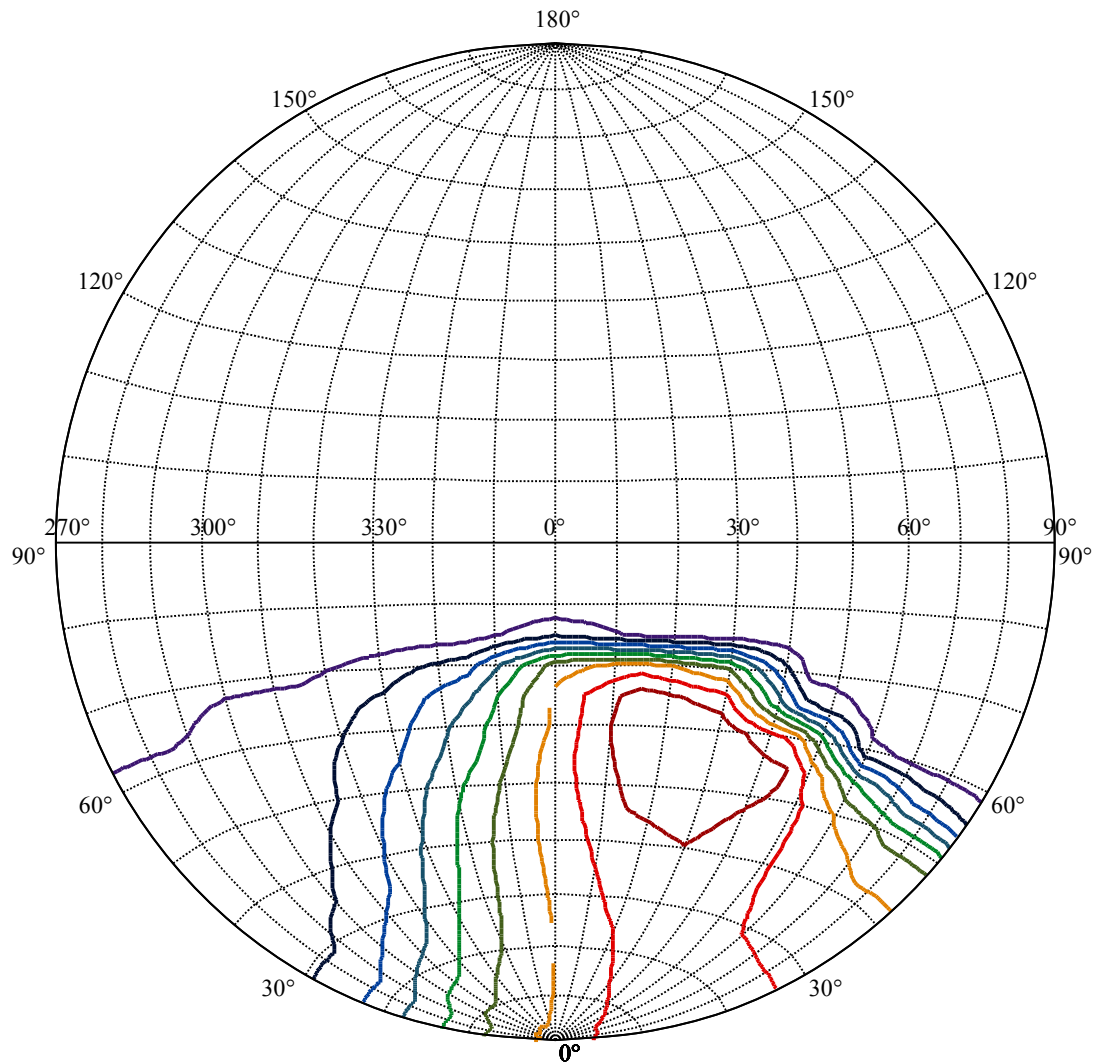
:C90/270Left:64.2 Right:59.5

Beam Angle(50%Imax):C0/180Left:72.3 Right:73.1

:C90/270Left:19.2 Right:52.7







House

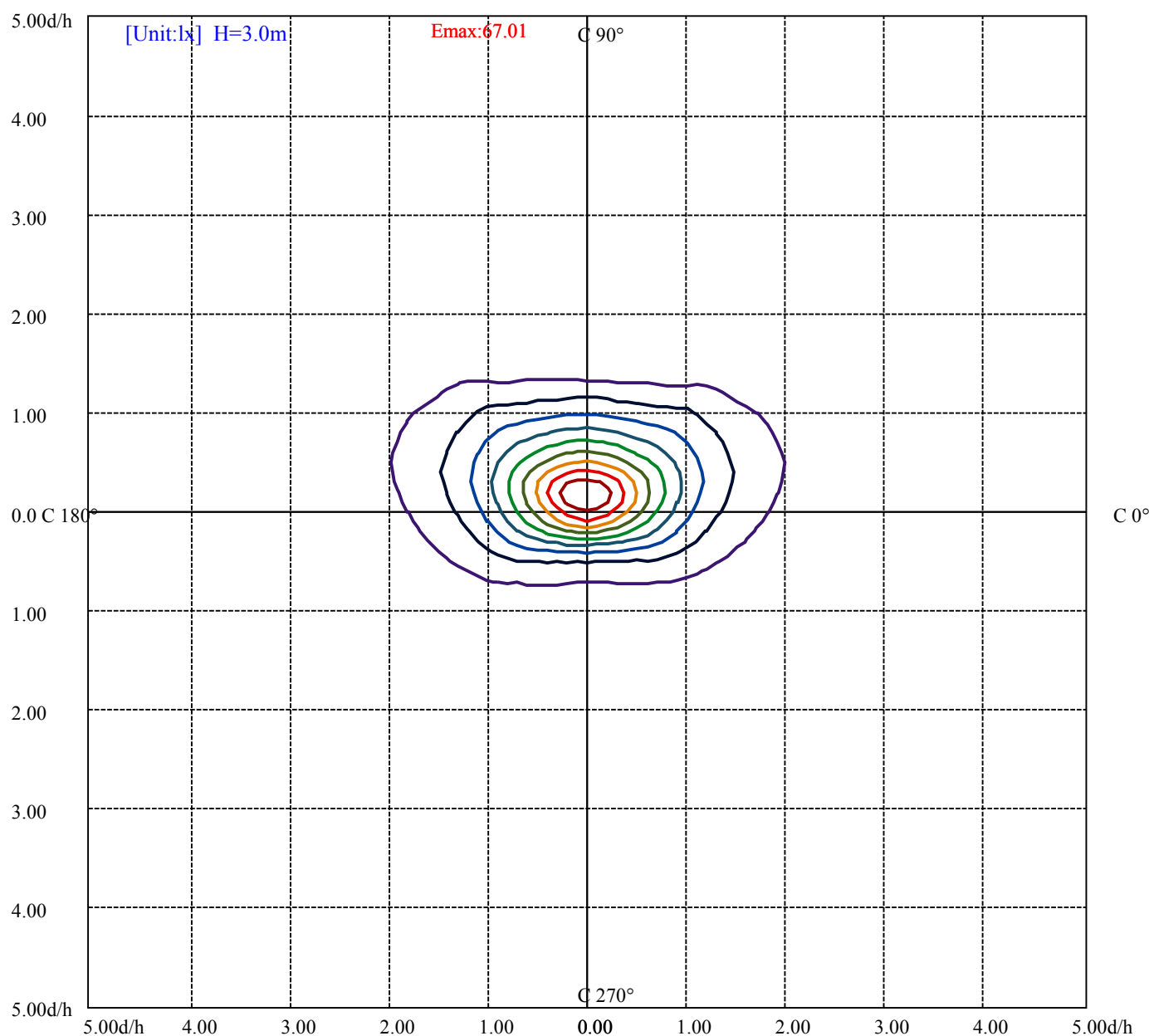
[Unit:cd]

Road

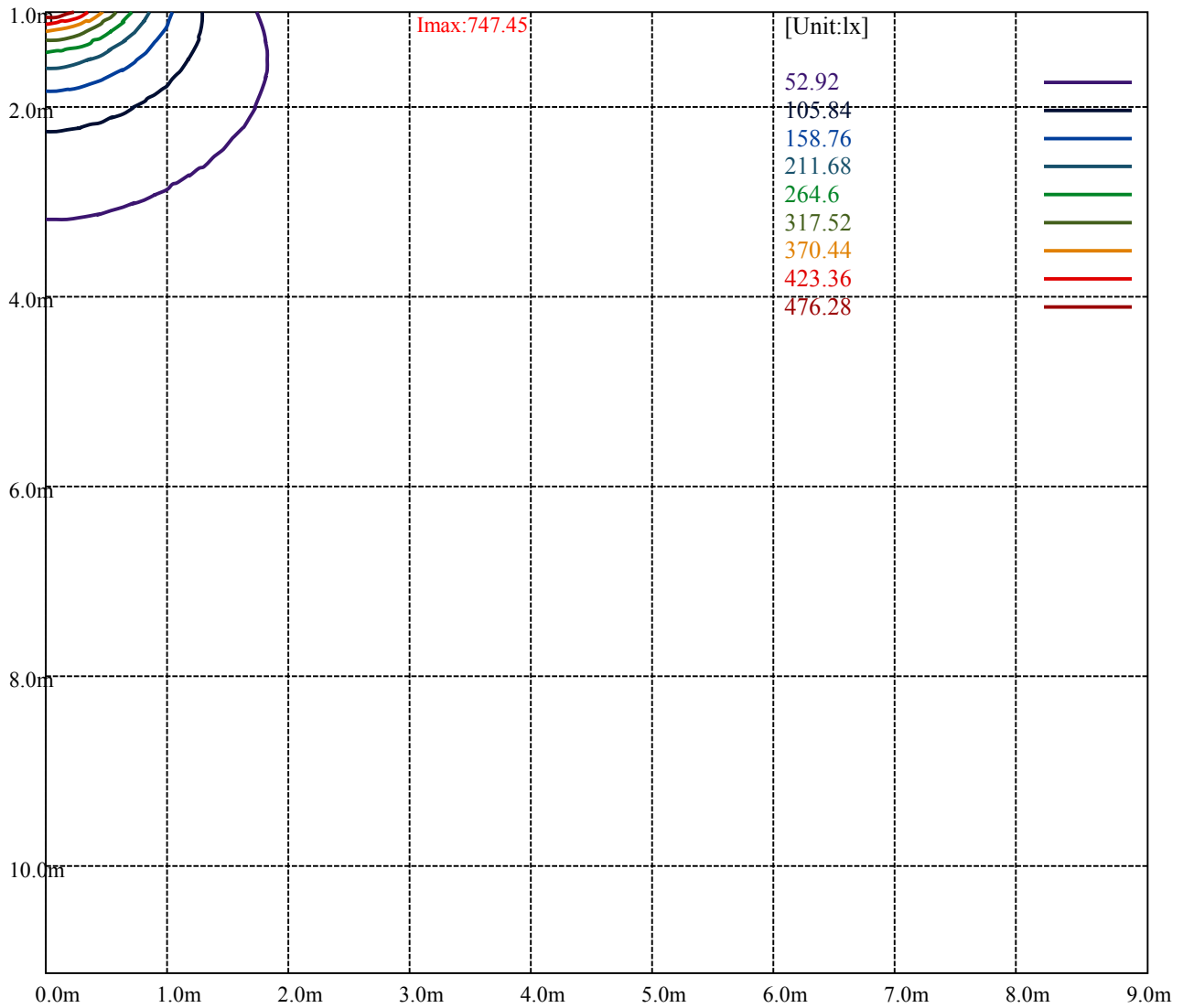
Imax:747.45

(10%Imax) 74.745
(20%Imax) 149.49
(30%Imax) 224.235
(40%Imax) 298.98
(50%Imax) 373.725
(60%Imax) 448.47
(70%Imax) 523.215
(80%Imax) 597.96
(90%Imax) 672.705





(10%Emax) 6.701355	—
(20%Emax) 13.40267	—
(30%Emax) 20.10411	—
(40%Emax) 26.80544	—
(50%Emax) 33.50678	—
(60%Emax) 40.20811	—
(70%Emax) 46.90944	—
(80%Emax) 53.61078	—
(90%Emax) 60.31222	—



Luminance Table

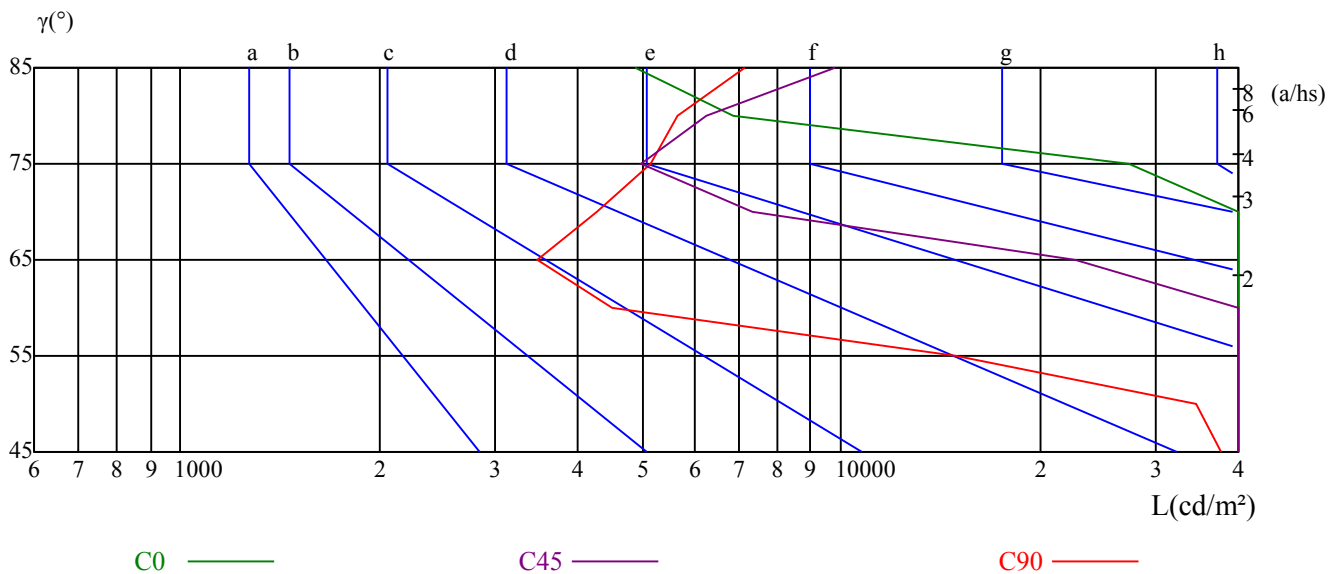
γ	45	50	55	60	65	70	75	80	85
C0	42011	46667	52099	57318	68026	75364	27355	6859	4888
C45	47980	55231	63319	61170	22680	7350	4973	6237	9776
C90	37569	34514	14954	4512	3478	4280	5158	5667	7160

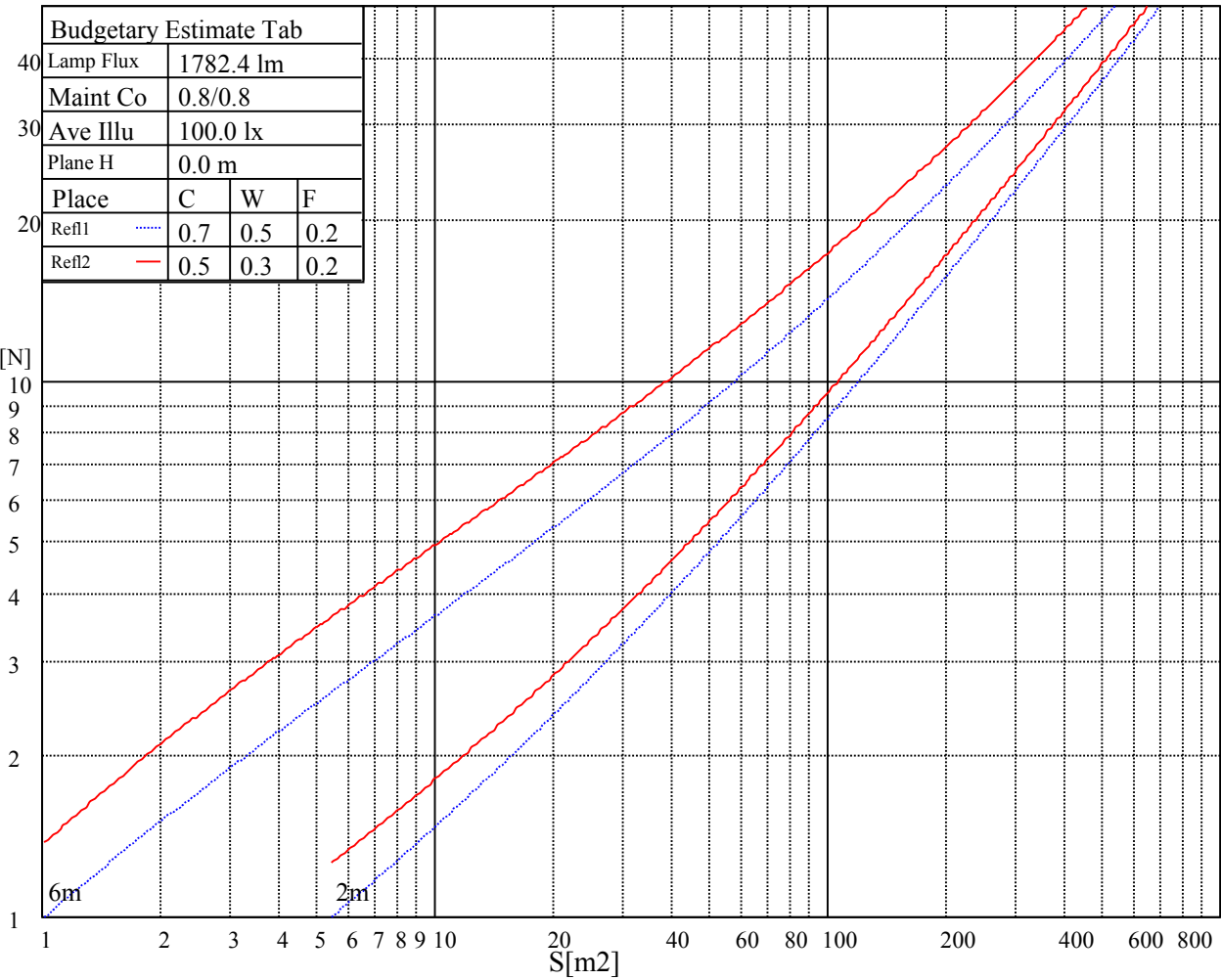
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
65758	4671	23010	21612	5291	6303	4939	7951	10834

Glare Table

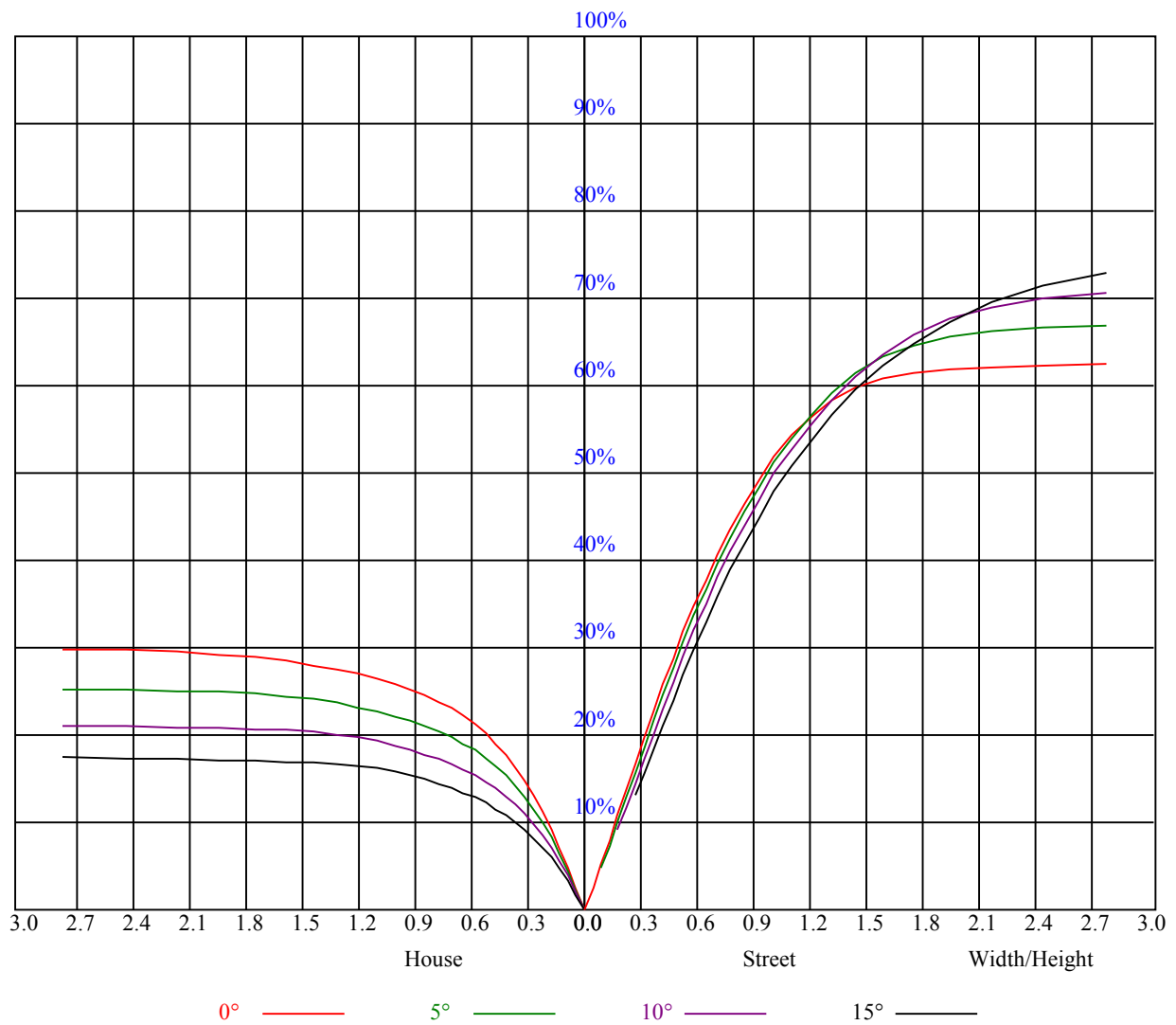
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

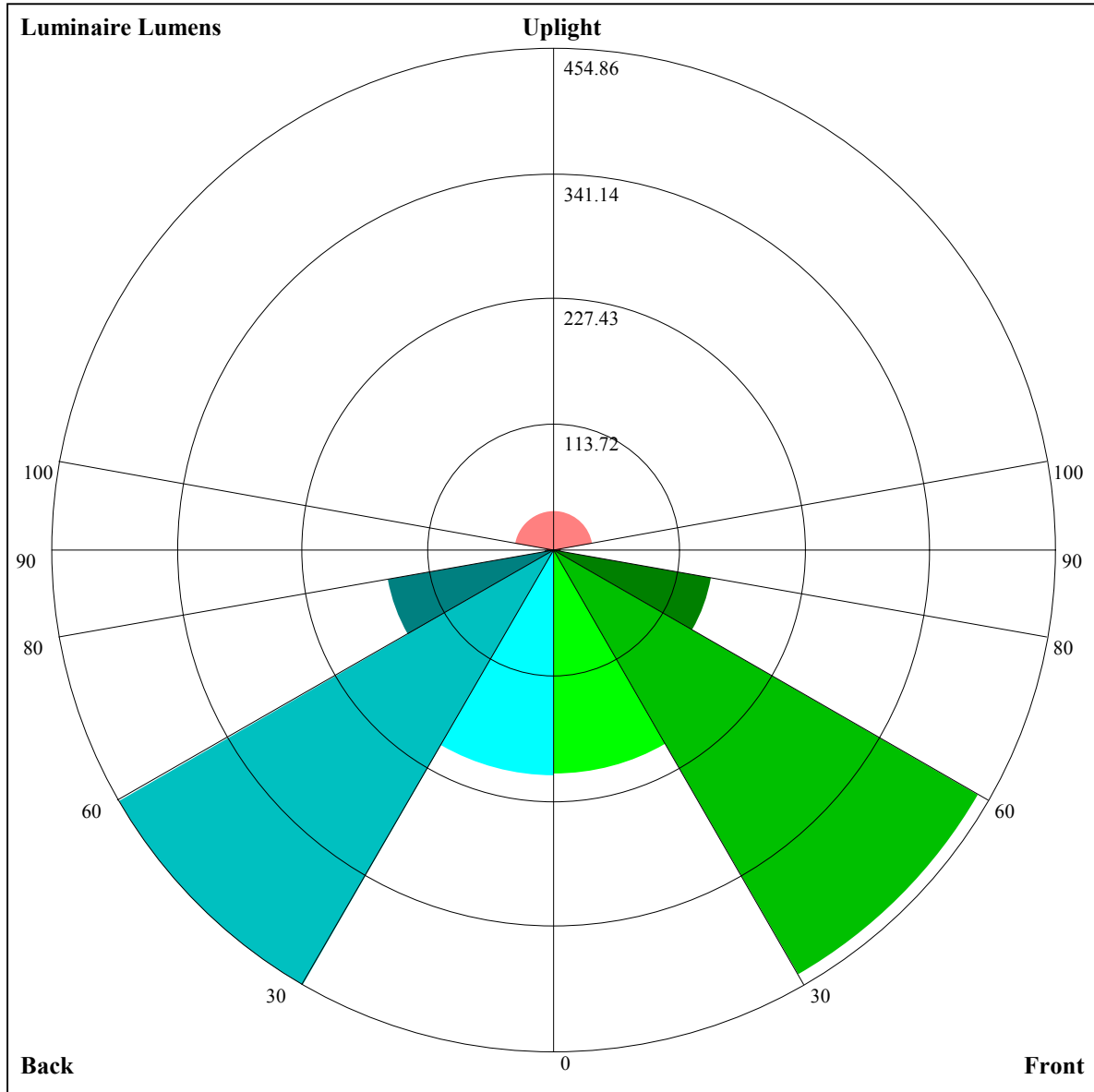
Luminance Limiting Curve





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	1.12	1.12	1.12	1.09	1.09	1.09	1.04	1.04	1.04	1.00	1.00	1.00	0.96	0.96	0.96	0.94
1	0.98	0.94	0.91	0.96	0.92	0.89	0.92	0.89	0.86	0.88	0.86	0.84	0.85	0.83	0.81	0.79
2	0.85	0.79	0.74	0.84	0.78	0.73	0.80	0.75	0.71	0.77	0.73	0.69	0.74	0.71	0.68	0.66
3	0.75	0.67	0.61	0.73	0.66	0.60	0.70	0.64	0.59	0.68	0.62	0.58	0.65	0.61	0.57	0.55
4	0.66	0.57	0.51	0.64	0.57	0.50	0.62	0.55	0.50	0.60	0.54	0.49	0.58	0.53	0.48	0.46
5	0.58	0.50	0.43	0.57	0.49	0.43	0.55	0.48	0.43	0.53	0.47	0.42	0.52	0.46	0.42	0.40
6	0.52	0.44	0.37	0.51	0.43	0.37	0.49	0.42	0.37	0.48	0.41	0.37	0.46	0.41	0.36	0.34
7	0.47	0.39	0.33	0.46	0.38	0.33	0.45	0.38	0.32	0.43	0.37	0.32	0.42	0.36	0.32	0.30
8	0.43	0.35	0.29	0.42	0.34	0.29	0.41	0.34	0.29	0.40	0.33	0.28	0.38	0.33	0.28	0.26
9	0.39	0.31	0.26	0.38	0.31	0.26	0.37	0.30	0.26	0.36	0.30	0.26	0.35	0.30	0.25	0.24
10	0.36	0.28	0.23	0.35	0.28	0.23	0.34	0.28	0.23	0.34	0.27	0.23	0.33	0.27	0.23	0.21





Luminaire Lumens:

FL=203.19,FM=443.84,FH=145.17,FVH=7.53

BL=205.67,BM=454.86,BH=154.09,BVH=8.17

UL=7.46,UH=35.52

BUG Rating:B1-U2-G1

NATA CR28L25075145BC

Intensity data(cd)									Appendix Page: 15 Total:16		
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	529.20	529.37	526.73	526.78	525.09	527.74	534.09	541.13	549.73		
15.0	534.15	546.47	555.58	568.63	578.31	589.22	604.58	624.71	646.76		
30.0	537.13	562.73	584.27	601.99	616.56	627.30	636.08	648.06	669.83		
45.0	536.34	576.39	606.38	623.81	632.31	630.23	622.41	616.95	621.51		
60.0	550.97	595.41	626.01	636.92	628.82	608.91	594.73	583.99	573.47		
75.0	540.51	597.54	628.43	641.03	626.01	603.62	585.84	567.28	544.33		
90.0	552.83	605.19	638.44	643.16	621.23	602.44	585.17	567.11	544.61		
105.0	541.35	597.04	632.81	645.30	632.93	611.16	594.06	573.92	551.25		
120.0	552.21	602.21	635.01	648.17	642.66	627.02	613.13	602.44	591.13		
135.0	544.05	585.28	620.38	641.53	651.32	645.36	636.19	634.44	643.56		
150.0	544.73	572.79	600.02	618.47	631.01	641.87	652.56	667.58	687.04		
165.0	533.08	546.58	560.59	573.19	582.92	594.68	610.37	633.83	654.36		
180.0	529.20	527.34	525.09	525.49	523.52	527.18	538.26	547.14	553.44		
195.0	534.15	520.76	507.77	494.55	482.29	471.60	465.36	461.14	453.09		
210.0	537.13	510.98	484.88	454.33	423.73	390.15	362.19	343.58	321.08		
225.0	536.34	498.49	456.19	401.91	346.95	295.71	257.57	220.33	193.73		
240.0	550.97	500.18	441.96	383.96	309.38	241.37	187.14	155.42	136.18		
255.0	540.51	485.38	410.29	338.68	263.36	190.63	143.66	118.86	106.37		
270.0	552.83	492.86	422.61	343.80	262.63	190.24	139.61	110.36	96.30		
285.0	541.35	485.38	414.79	339.30	260.38	186.81	141.30	115.43	100.97		
300.0	552.21	499.05	445.67	377.44	304.37	236.98	186.02	150.75	128.48		
315.0	541.80	502.37	452.93	398.93	344.87	292.89	249.81	214.03	188.04		
330.0	544.73	514.01	484.93	449.66	417.66	385.76	356.01	329.91	309.49		
345.0	533.08	518.91	499.39	485.16	470.76	460.91	455.91	451.18	444.26		
360.0	529.20	529.37	526.73	526.78	525.09	527.74	534.09	541.13	549.73		

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	556.99	562.44	560.31	537.36	539.04	483.30	132.75	22.33	7.99		
15.0	668.48	691.09	714.88	738.79	711.68	558.68	56.25	24.92	8.38		
30.0	695.76	721.52	740.31	721.24	634.61	452.87	60.64	17.32	8.44		
45.0	636.13	665.66	680.96	573.47	179.72	47.14	24.13	20.31	15.98		
60.0	556.82	514.80	378.28	93.49	38.48	24.53	24.98	24.08	19.63		
75.0	497.14	419.46	215.49	50.23	28.52	22.05	24.69	19.80	13.22		
90.0	498.09	415.97	160.82	42.30	27.56	27.45	25.03	18.45	11.70		
105.0	508.28	432.39	257.85	58.73	32.68	24.47	27.56	23.23	17.04		
120.0	577.80	544.84	421.93	151.20	50.01	32.79	29.48	31.11	28.29		
135.0	663.58	693.51	713.98	635.23	326.70	80.66	38.25	27.90	25.99		
150.0	713.53	735.98	747.45	733.56	663.75	511.03	116.44	31.44	17.21		
165.0	675.00	694.74	715.78	731.42	704.03	571.16	125.61	33.86	12.94		
180.0	556.14	553.95	542.25	529.59	503.10	420.86	77.01	18.68	8.16		
195.0	435.77	413.66	383.18	352.18	297.90	215.83	42.64	21.54	9.84		
210.0	294.41	271.91	239.18	212.18	170.78	128.76	29.76	19.74	9.96		
225.0	171.90	154.46	145.74	130.56	114.53	58.84	27.90	19.13	11.48		
240.0	122.40	112.67	110.42	108.56	105.30	54.23	23.23	17.72	14.06		
255.0	101.31	97.76	98.16	100.69	46.74	31.78	23.12	19.18	13.28		
270.0	94.67	95.29	98.27	100.86	46.46	34.88	26.33	21.77	14.29		
285.0	97.43	97.59	98.55	99.84	46.80	31.33	23.63	20.93	14.96		
300.0	116.78	109.18	109.41	106.48	103.50	49.50	24.75	22.22	19.35		
315.0	166.44	148.61	139.73	122.06	108.39	57.49	32.06	23.74	17.38		
330.0	283.28	257.29	222.08	192.71	162.56	109.97	31.11	22.28	14.74		
345.0	430.54	408.49	366.24	340.71	291.09	192.83	35.83	20.08	10.29		
360.0	556.99	562.44	560.31	537.36	539.04	483.30	132.75	22.33	7.99		

Intensity data(cd)

C/ γ (°)	90.0
0.0	4.89
15.0	4.05
30.0	4.11
45.0	4.39
60.0	4.73
75.0	5.23
90.0	5.57
105.0	7.54
120.0	9.51
135.0	12.43
150.0	12.15
165.0	6.81
180.0	5.23
195.0	4.16
210.0	4.11
225.0	4.22
240.0	4.89
255.0	5.12
270.0	5.85
285.0	6.69
300.0	10.63
315.0	11.98
330.0	11.19
345.0	8.72
360.0	4.89