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NATA

LumCAT: 2-1795-N
Luminaire: 92.70.131.00
Report No: NATA0100
Test No: GC2019011716
LampCAT: LUMINUS CLM-14-AC30
Lamp flux(lm): 3658.0
Number of Lamps: 1
Length(mm): 69
Phm Type: C

Voltage(V): 35.2000
Current(A): 0.7000
Power (W): 24.6400
PF: 0.0000
Ballast type: DC
Width(mm): 69
Height(mm): 0

Photometric Results

Lumens(lm): 2932.17
Efficiency(%): 80.16%
Lumens(lm)/Power(W): 120.34
Central intensity(cd): 5991.750
Maximum intensity(cd): 5991.750
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=40.5
 [C90/270]Total=40.5
Field angle(10%Imax): [C0/180]Total=64.6
 [C90/270]Total=64.6
Maximum s/h(1/2): C0_180=0.66 C90_270=0.66
Maximum s/h(1/4): C0_180=0.64 C90_270=0.64
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 81.06%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.645%

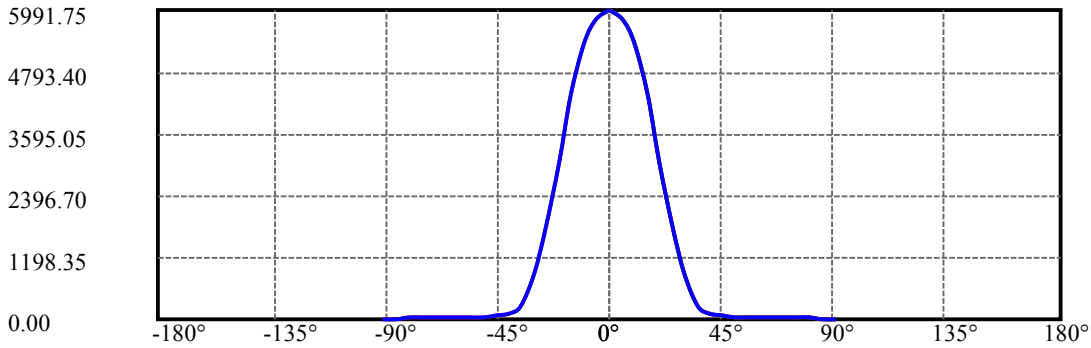
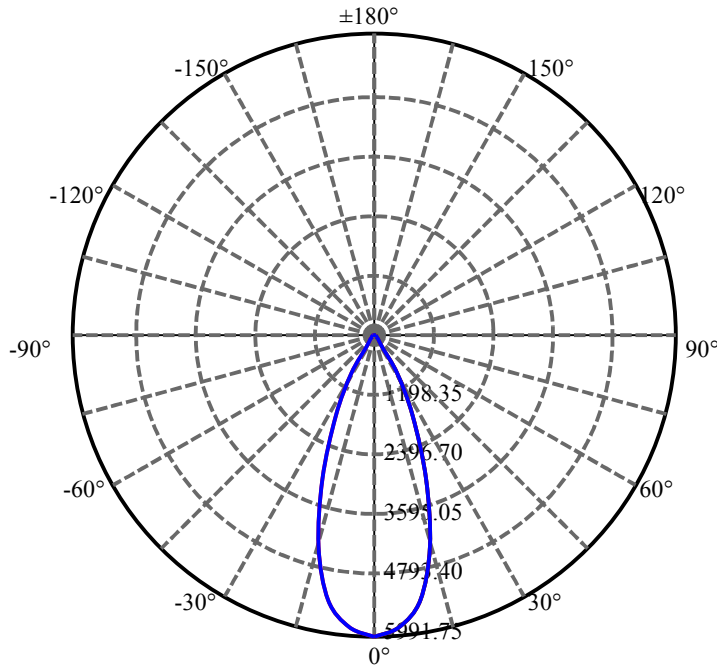
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5991.750	35.832	35.832	.980%	1.222%
5.0	5811.891	277.653	313.485	7.590%	10.691%
10.0	5343.750	508.634	822.12	13.905%	28.038%
15.0	4336.734	615.246	1437.365	16.819%	49.021%
20.0	3055.570	572.840	2010.205	15.660%	68.557%
25.0	1782.204	412.853	2423.058	11.286%	82.637%
30.0	885.129	242.586	2665.644	6.632%	90.910%
35.0	265.627	83.513	2749.157	2.283%	93.758%
40.0	98.606	34.743	2783.899	.950%	94.943%
45.0	62.817	24.347	2808.247	.666%	95.774%
50.0	49.521	20.794	2829.04	.568%	96.483%
55.0	41.977	18.848	2847.888	.515%	97.126%
60.0	37.561	17.830	2865.718	.487%	97.734%
65.0	32.857	16.323	2882.041	.446%	98.290%
70.0	28.048	14.447	2896.488	.395%	98.783%
75.0	23.892	12.650	2909.138	.346%	99.215%
80.0	19.744	10.658	2919.796	.291%	99.578%
85.0	16.003	8.739	2928.534	.239%	99.876%
90.0	13.261	3.634	2932.169	.099%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2665.64	72.87%	90.91%
0-40	2783.90	76.10%	94.94%
0-60	2865.72	78.34%	97.73%
0-90	2928.53	80.06%	99.88%
0-120	2928.53	80.06%	99.88%
0-180	2932.17	80.16%	100.00%
60-90	80.65	2.20%	2.75%
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%
0-24.06	2345.74	64.13%	80.00%

ZONAL LUMEN SUMMARY

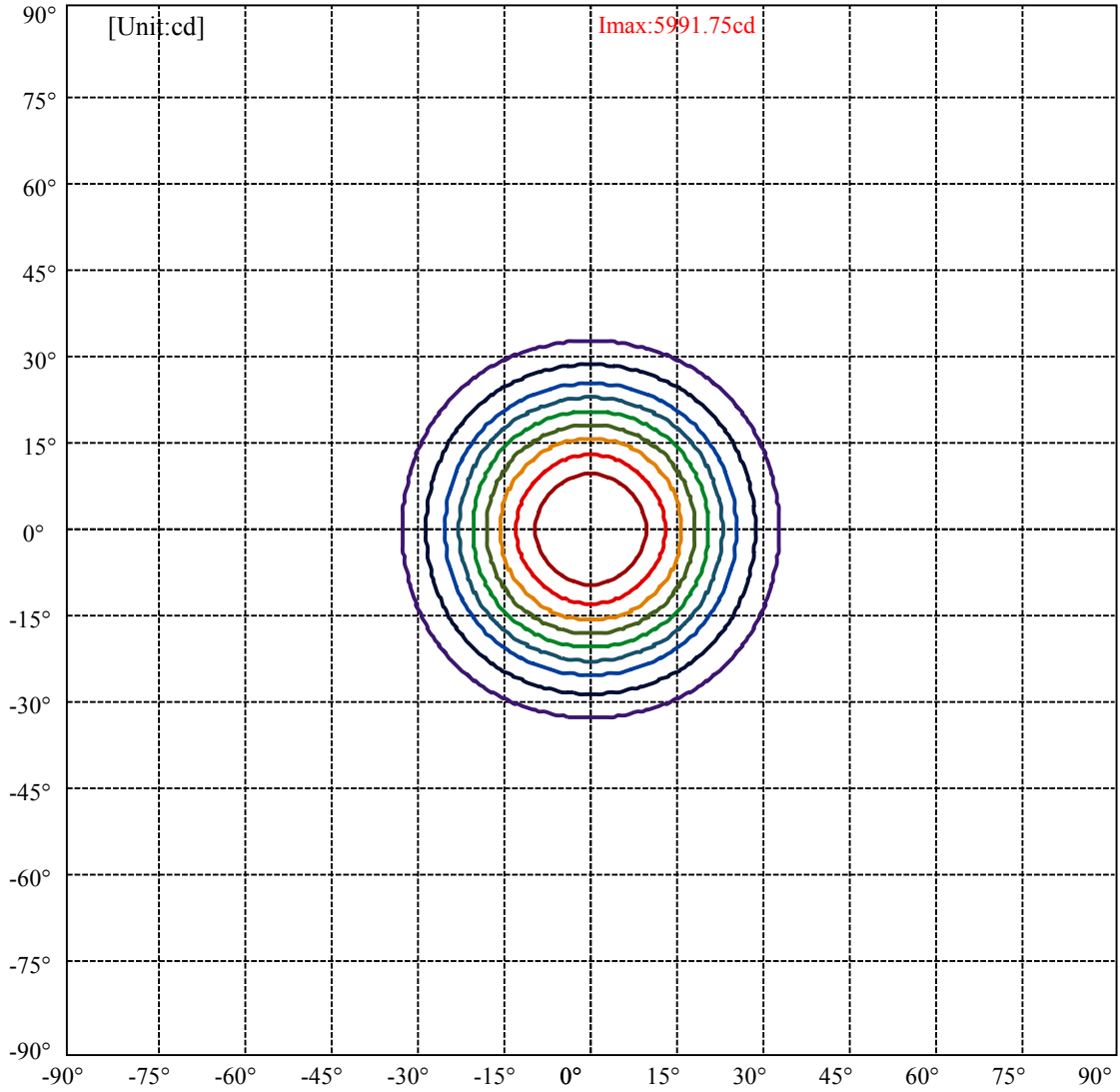
0-10	822.12
10-20	1188.09
20-30	655.44
30-40	118.26
40-50	45.14
50-60	36.68
60-70	30.77
70-80	23.31
80-90	8.74
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



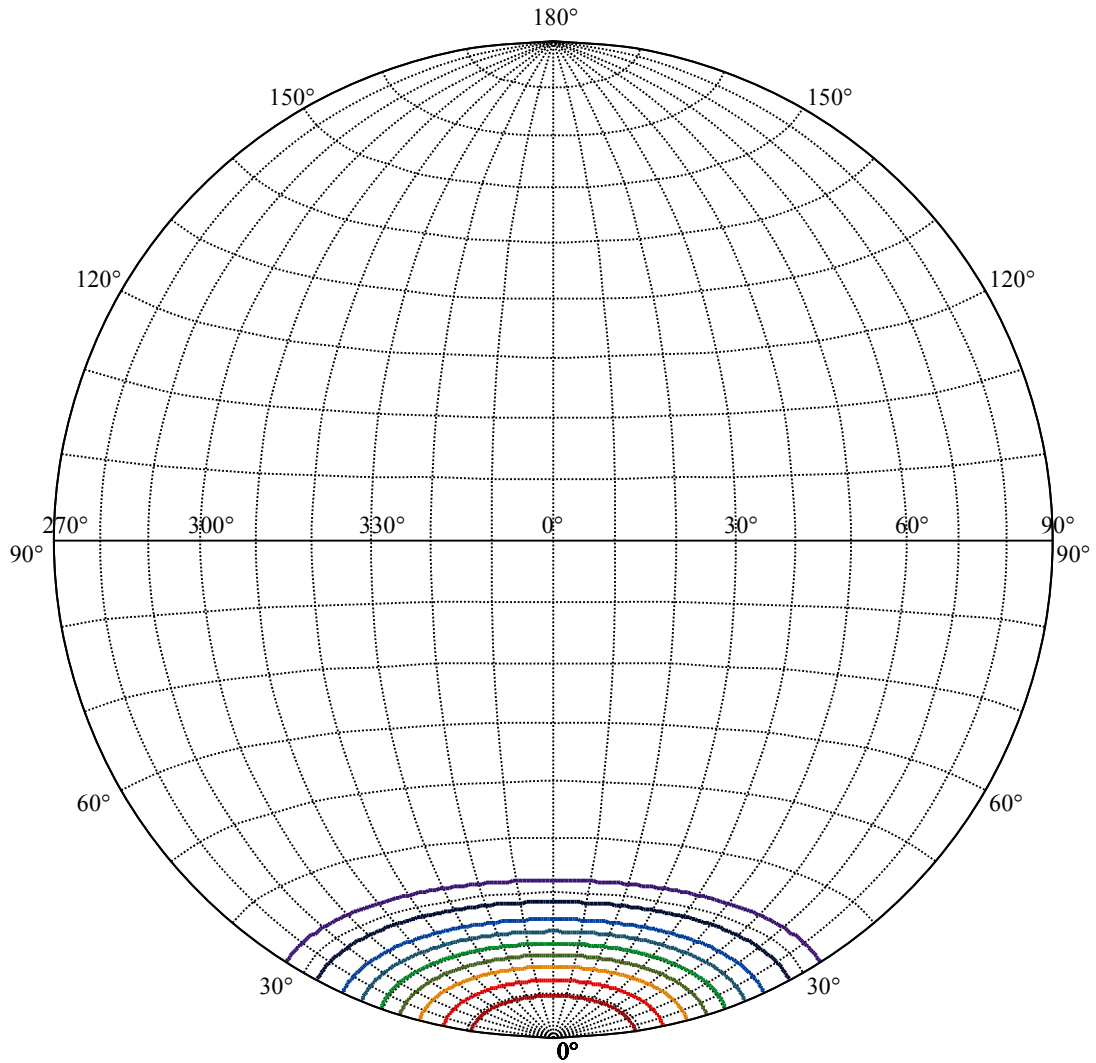
C0(Max): —————
C0/C180: —————
C90/C270: —————

Field angle(10%Imax):C0/180Left:32.3 Right:32.3
:C90/270Left:32.3 Right:32.3

Beam Angle(50%Imax):C0/180Left:20.2 Right:20.2
:C90/270Left:20.2 Right:20.2



(10%Imax) 599.175	—
(20%Imax) 1198.35	—
(30%Imax) 1797.53	—
(40%Imax) 2396.7	—
(50%Imax) 2995.88	—
(60%Imax) 3595.05	—
(70%Imax) 4194.23	—
(80%Imax) 4793.4	—
(90%Imax) 5392.58	—



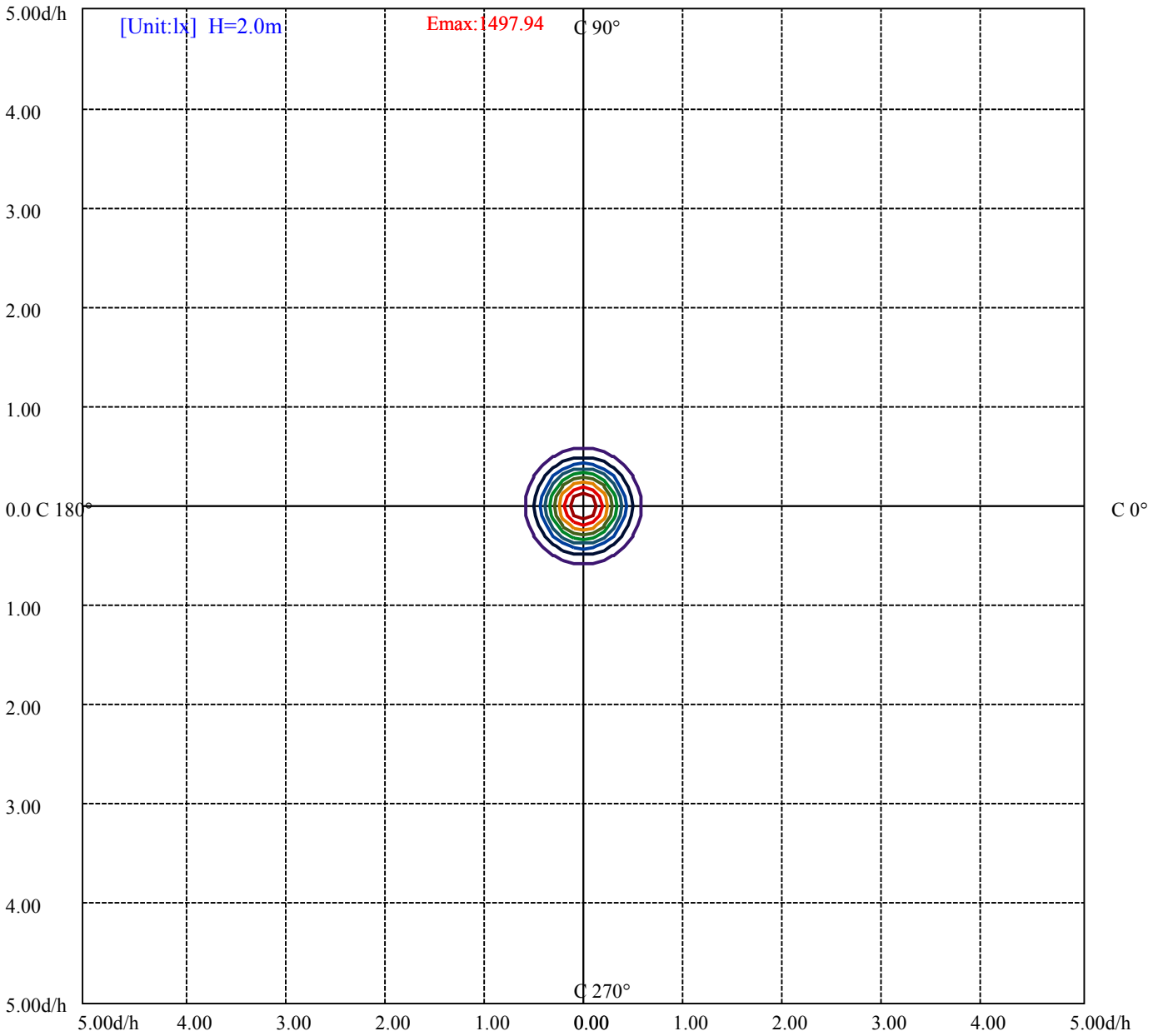
House

[Unit:cd]

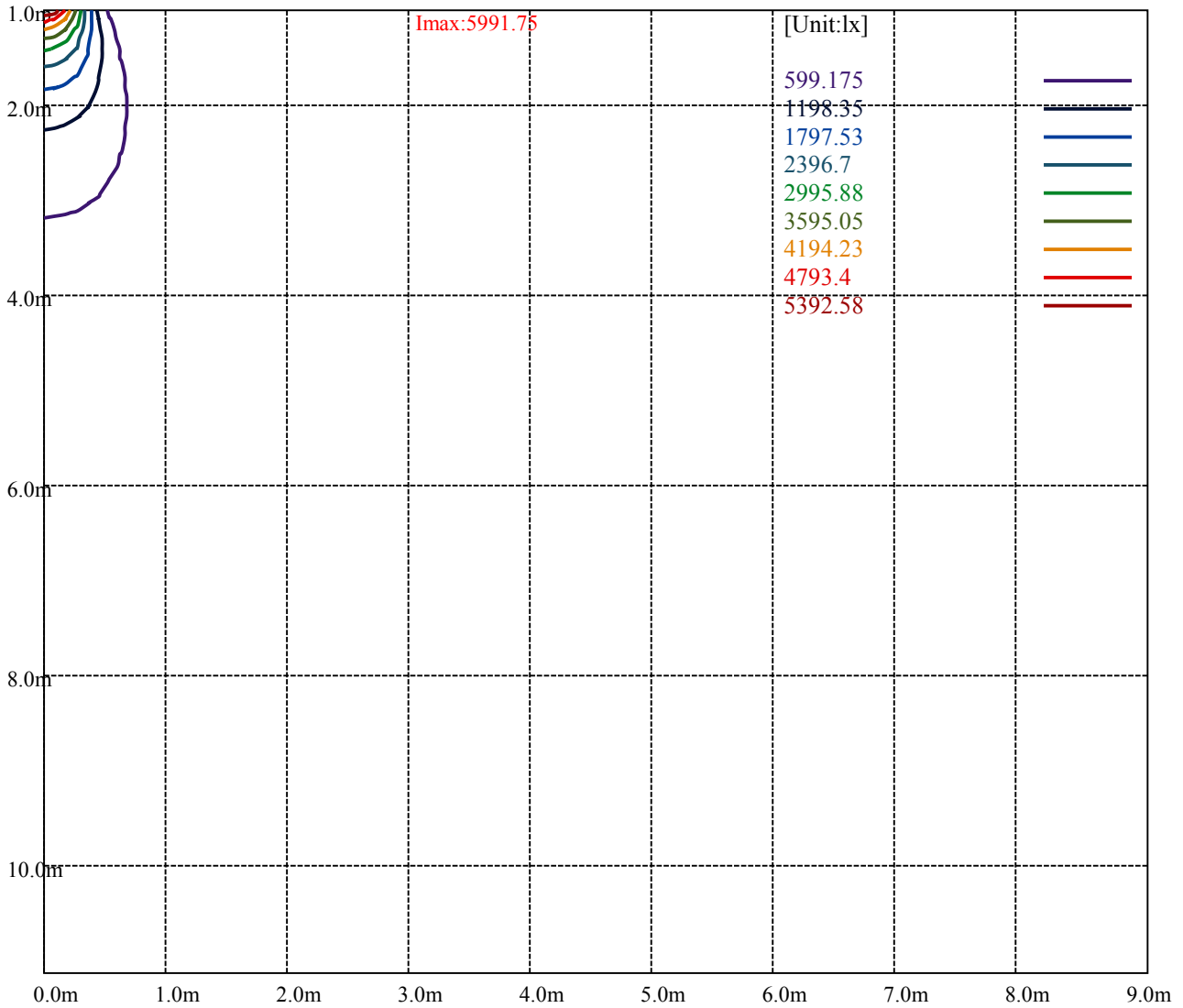
Road

Imax:5991.75

(10%Imax) 599.175	—
(20%Imax) 1198.35	—
(30%Imax) 1797.53	—
(40%Imax) 2396.7	—
(50%Imax) 2995.88	—
(60%Imax) 3595.05	—
(70%Imax) 4194.23	—
(80%Imax) 4793.4	—
(90%Imax) 5392.58	—



- (10%E_{max}) 149.7935
- (20%E_{max}) 299.5875
- (30%E_{max}) 449.38
- (40%E_{max}) 599.175
- (50%E_{max}) 748.9675
- (60%E_{max}) 898.7625
- (70%E_{max}) 1048.555
- (80%E_{max}) 1198.35
- (90%E_{max}) 1348.142



Luminance Table

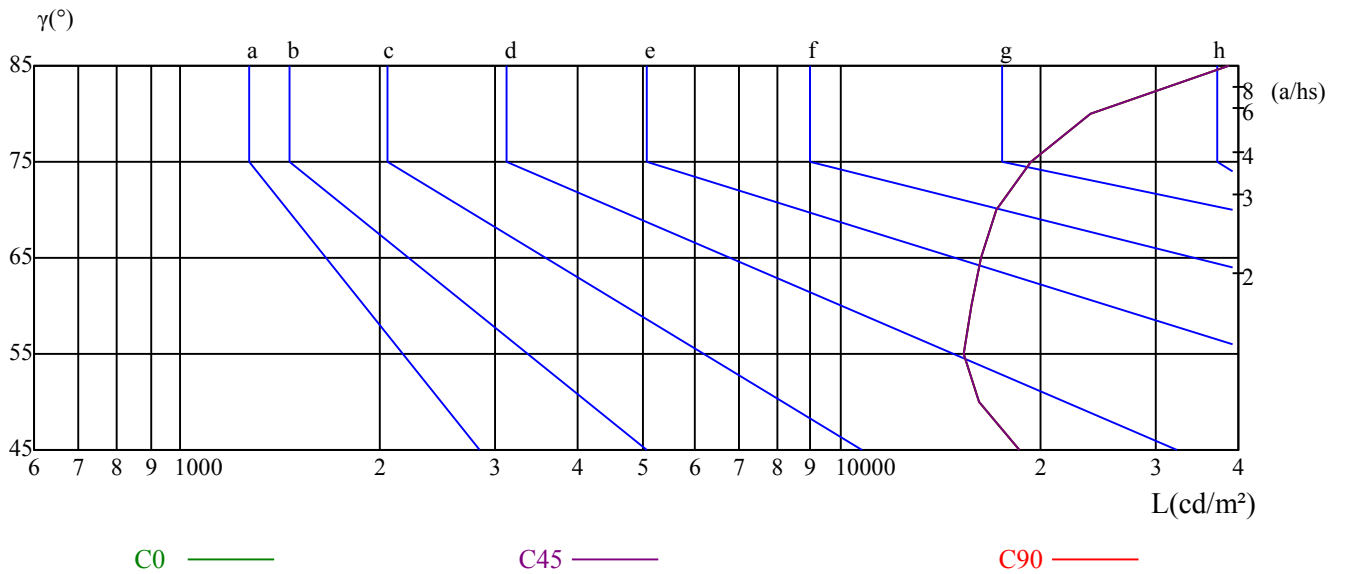
γ	45	50	55	60	65	70	75	80	85
C0	18659	16182	15372	15779	16330	17225	19389	23881	38567
C45	18659	16182	15372	15779	16330	17225	19389	23881	38567
C90	18659	16182	15372	15779	16330	17225	19389	23881	38567

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
16330	16330	16330	19389	19389	19389	38567	38567	38567

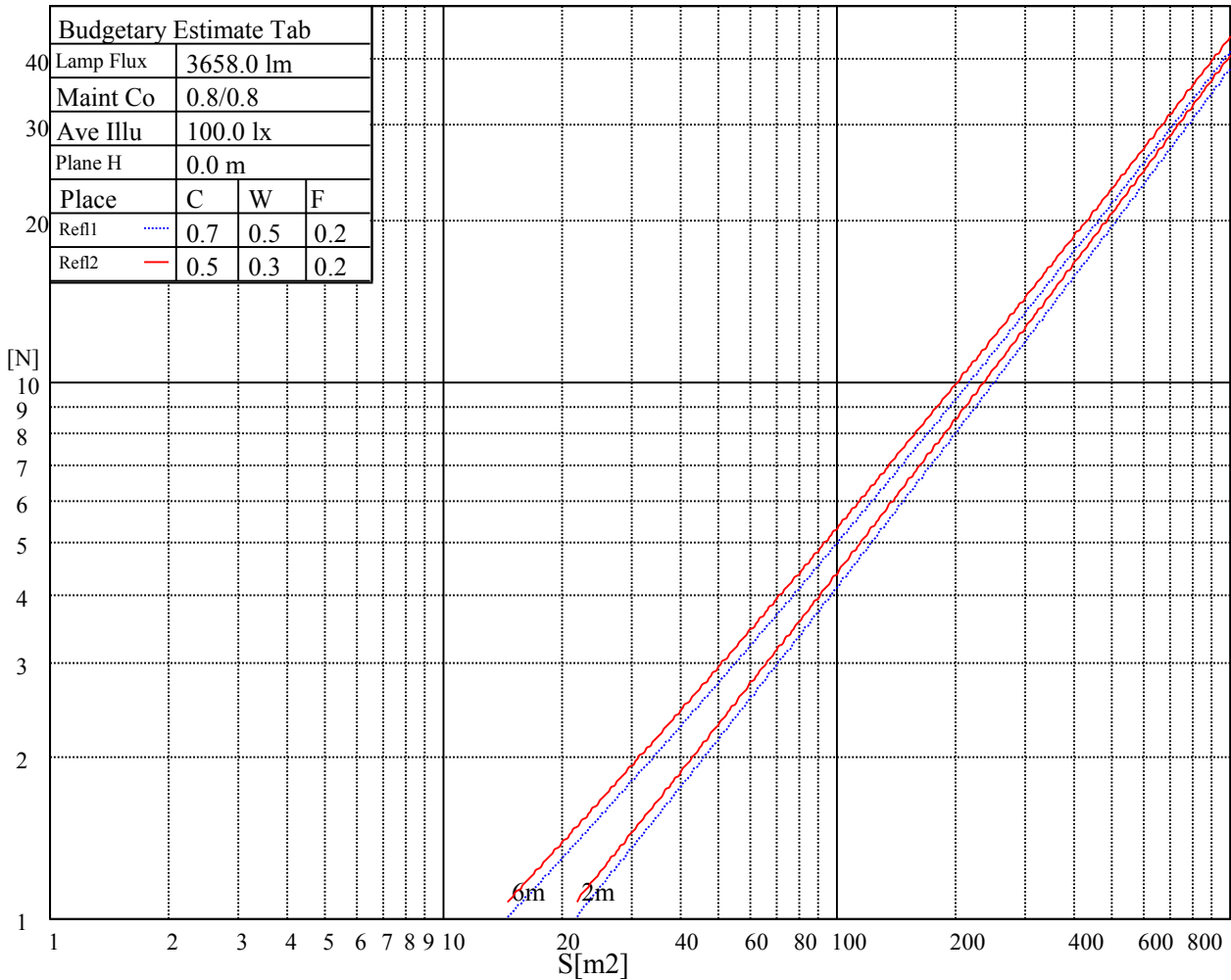
Glare Table

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

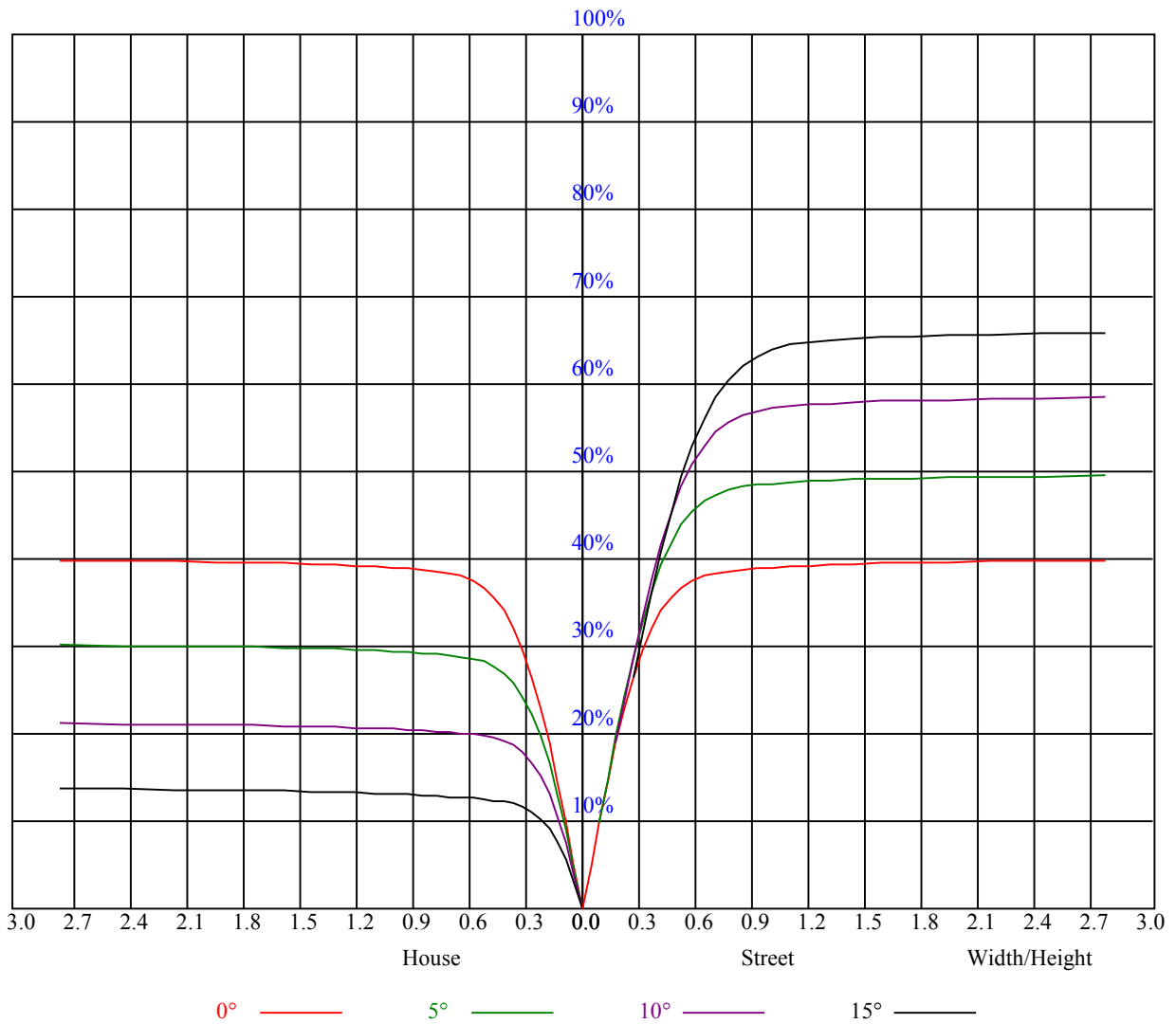
Luminance Limiting Curve



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	10.21	11.18	10.58	11.49	11.81	10.14	11.10	10.50	11.41	11.73
	3H	12.63	13.48	13.01	13.81	14.18	12.44	13.29	12.82	13.62	13.99
	4H	13.76	14.55	14.16	14.90	15.29	13.56	14.36	13.97	14.71	15.10
	6H	14.85	15.58	15.27	15.95	16.35	14.75	15.47	15.17	15.85	16.25
	8H	15.40	16.08	15.84	16.47	16.88	15.38	16.06	15.81	16.45	16.86
	12H	16.30	16.95	16.74	17.34	17.77	16.43	17.08	16.86	17.46	17.89
4H	2H	10.81	11.61	11.22	11.96	12.35	10.76	11.55	11.16	11.90	12.29
	3H	13.45	14.10	13.87	14.51	14.92	13.29	13.95	13.71	14.35	14.76
	4H	14.75	15.33	15.19	15.76	16.20	14.59	15.18	15.03	15.60	16.05
	6H	15.91	16.41	16.38	16.86	17.34	15.84	16.34	16.31	16.79	17.26
	8H	16.58	17.05	17.06	17.50	17.97	16.59	17.06	17.07	17.51	17.98
8H	12H	17.51	17.91	18.00	18.40	18.88	17.66	18.06	18.15	18.55	19.03
	4H	15.17	15.64	15.65	16.09	16.56	15.05	15.51	15.52	15.96	16.44
	6H	16.61	16.98	17.12	17.48	17.97	16.56	16.93	17.07	17.44	17.92
	8H	17.46	17.78	17.99	18.31	18.80	17.49	17.82	18.03	18.34	18.84
12H	12H	18.70	18.98	19.22	19.48	20.06	18.85	19.13	19.37	19.63	20.21
	4H	15.26	15.66	15.75	16.15	16.63	15.14	15.54	15.63	16.02	16.50
	6H	17.05	17.12	17.33	17.59	18.14	17.01	17.08	17.29	17.55	18.10
	8H	17.76	18.04	18.28	18.54	19.12	17.80	18.08	18.32	18.58	19.16
Variation with the observer position at spacings:											
S = 1.0H	3.2/-1.7					3.2/-1.7					
S = 1.5H	4.2/-1.4					4.2/-1.4					
S = 2.0H	5.0/-1.2					5.0/-1.2					
Standard tables:	BKBF					BKBF					
Uncorrected UGR	5.9					5.9					



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	0.97	0.97	0.97	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.83	0.83	0.83	0.81
1	0.89	0.87	0.85	0.88	0.86	0.84	0.84	0.83	0.81	0.81	0.80	0.79	0.78	0.78	0.77	0.75
2	0.84	0.81	0.79	0.83	0.80	0.78	0.80	0.78	0.76	0.78	0.76	0.74	0.76	0.74	0.73	0.72
3	0.80	0.76	0.74	0.79	0.76	0.73	0.77	0.74	0.72	0.75	0.73	0.71	0.73	0.71	0.70	0.68
4	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.68	0.72	0.70	0.67	0.71	0.69	0.67	0.66
5	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.68	0.66	0.64	0.63
6	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.66	0.64	0.62	0.61
7	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.64	0.61	0.59	0.58
8	0.65	0.61	0.58	0.64	0.61	0.58	0.63	0.60	0.58	0.63	0.60	0.57	0.62	0.59	0.57	0.56
9	0.62	0.59	0.56	0.62	0.58	0.56	0.61	0.58	0.56	0.61	0.58	0.56	0.60	0.57	0.55	0.54
10	0.60	0.57	0.54	0.60	0.56	0.54	0.59	0.56	0.54	0.59	0.56	0.54	0.58	0.56	0.54	0.53



Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	5979.38	5943.94	5643.56	4893.75	3592.13	2378.25	1250.44	398.81	131.96
45.0	6001.31	5854.50	5461.31	4515.75	3237.75	1984.50	957.38	291.94	101.31
90.0	5976.00	5737.50	5155.88	3947.06	2723.63	1352.25	634.84	155.98	80.04
135.0	6010.31	5743.13	5225.06	4124.25	2809.69	1609.31	735.75	291.94	81.45
180.0	5979.38	5683.50	5076.56	3814.88	2556.00	1076.01	578.64	153.84	78.86
225.0	6001.31	5770.13	5235.75	4209.75	2906.44	1698.19	806.51	196.26	89.49
270.0	5976.00	5877.56	5452.88	4583.25	3328.31	2068.31	1085.06	347.63	114.13
315.0	6010.31	5884.88	5499.00	4605.19	3290.63	2090.81	1032.41	288.62	111.60
360.0	5979.38	5943.94	5643.56	4893.75	3592.13	2378.25	1250.44	398.81	131.96

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	74.64	55.18	44.55	39.54	34.65	29.76	25.93	22.28	17.33
45.0	63.79	49.61	41.34	36.73	31.73	27.17	23.01	19.35	15.92
90.0	57.49	47.87	41.51	38.59	34.20	29.36	24.58	18.56	14.46
135.0	56.64	45.96	39.83	35.94	31.05	26.21	22.50	18.56	15.86
180.0	56.98	46.69	40.67	36.45	31.50	26.78	22.61	18.62	16.31
225.0	60.58	48.15	41.29	36.62	32.06	27.11	23.12	19.18	15.75
270.0	66.71	52.76	44.66	39.60	35.38	30.60	25.48	20.76	15.86
315.0	65.70	49.95	41.96	37.01	32.29	27.39	23.91	20.64	16.54
360.0	74.64	55.18	44.55	39.54	34.65	29.76	25.93	22.28	17.33

C/γ(°)	90.0
0.0	14.29
45.0	13.05
90.0	12.83
135.0	12.99
180.0	13.11
225.0	12.94
270.0	13.05
315.0	13.84
360.0	14.29