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NATA

LumCAT: 2-1795-N	
Luminaire: 92.70.131.00	
Report No: NATA0100	Voltage(V): 35.3000
Test No: GC2019011807	Current(A): 0.3000
LampCAT: CITIZEN CLU710	Power (W): 10.5900
Lamp flux(lm): 1285.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 69	Width(mm): 69
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1045.68
Efficiency(%): 81.38%
Lumens(lm)/Power(W): 100.30
Central intensity(cd): 2929.641
Maximum intensity(cd): 2929.641
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=29.7
 [C90/270]Total=29.7
Field angle(10%Imax): [C0/180]Total=59.6
 [C90/270]Total=59.6
Maximum s/h(1/2): C0_180=0.50 C90_270=0.50
Maximum s/h(1/4): C0_180=0.54 C90_270=0.54
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 82.66%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.339%

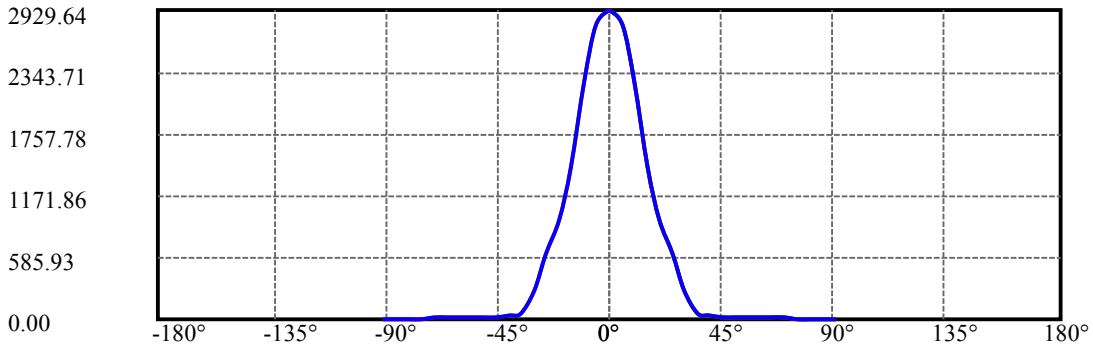
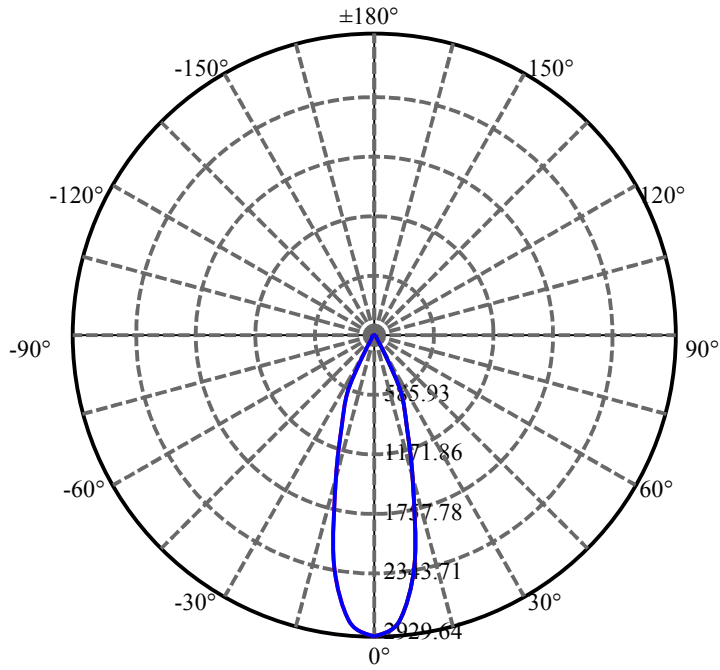
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2929.641	17.520	17.52	1.363%	1.675%
5.0	2788.945	133.237	150.757	10.369%	14.417%
10.0	2258.086	214.932	365.689	16.726%	34.972%
15.0	1442.588	204.658	570.346	15.927%	54.543%
20.0	946.020	177.354	747.7	13.802%	71.504%
25.0	625.795	144.967	892.667	11.282%	85.368%
30.0	278.044	76.203	968.871	5.930%	92.655%
35.0	58.746	18.470	987.34	1.437%	94.421%
40.0	28.905	10.184	997.525	.793%	95.395%
45.0	19.350	7.500	1005.025	.584%	96.112%
50.0	15.405	6.469	1011.493	.503%	96.731%
55.0	13.423	6.027	1017.52	.469%	97.307%
60.0	12.213	5.798	1023.318	.451%	97.862%
65.0	10.716	5.323	1028.641	.414%	98.371%
70.0	9.422	4.853	1033.494	.378%	98.835%
75.0	8.009	4.240	1037.734	.330%	99.241%
80.0	6.708	3.621	1041.355	.282%	99.587%
85.0	5.583	3.049	1044.404	.237%	99.878%
90.0	4.641	1.272	1045.676	.099%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	968.87	75.40%	92.65%
0-40	997.52	77.63%	95.40%
0-60	1023.32	79.64%	97.86%
0-90	1044.40	81.28%	99.88%
0-120	1044.40	81.28%	99.88%
0-180	1045.68	81.38%	100.00%
60-90	26.88	2.09%	2.57%
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%
0-23.06	836.54	65.10%	80.00%

ZONAL LUMEN SUMMARY

0-10	365.69
10-20	382.01
20-30	221.17
30-40	28.65
40-50	13.97
50-60	11.82
60-70	10.18
70-80	7.86
80-90	3.05
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: —————

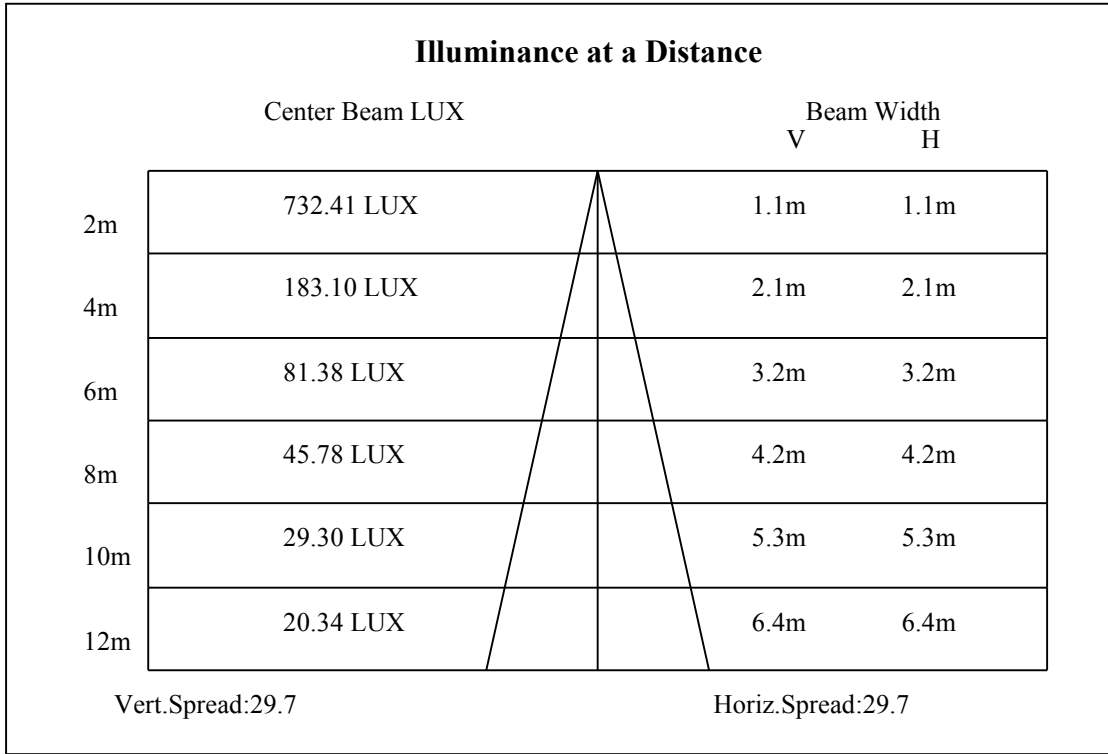
C90/C270: —————

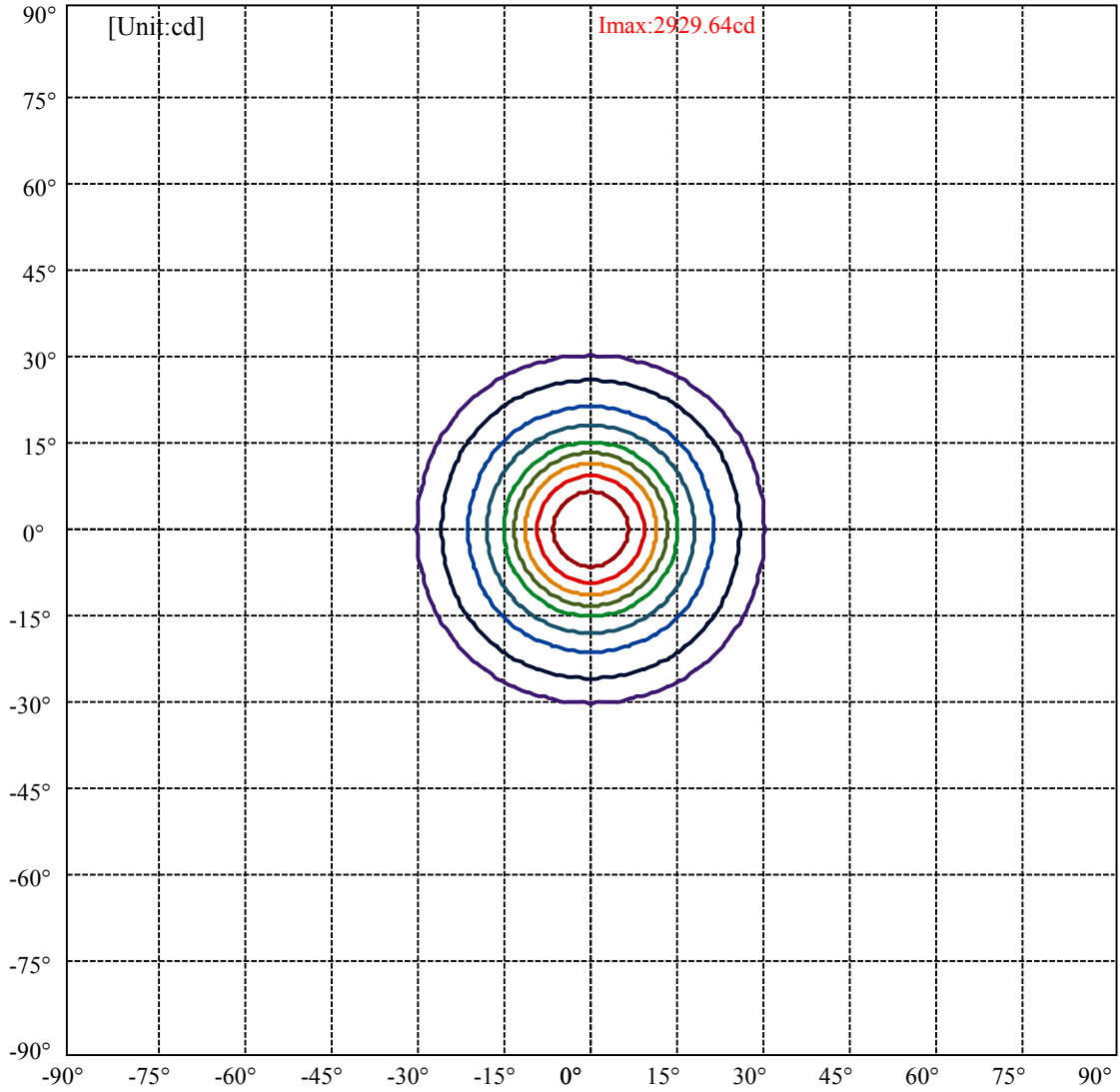
Field angle(10%Imax):C0/180Left:29.8 Right:29.8

:C90/270Left:29.8 Right:29.8

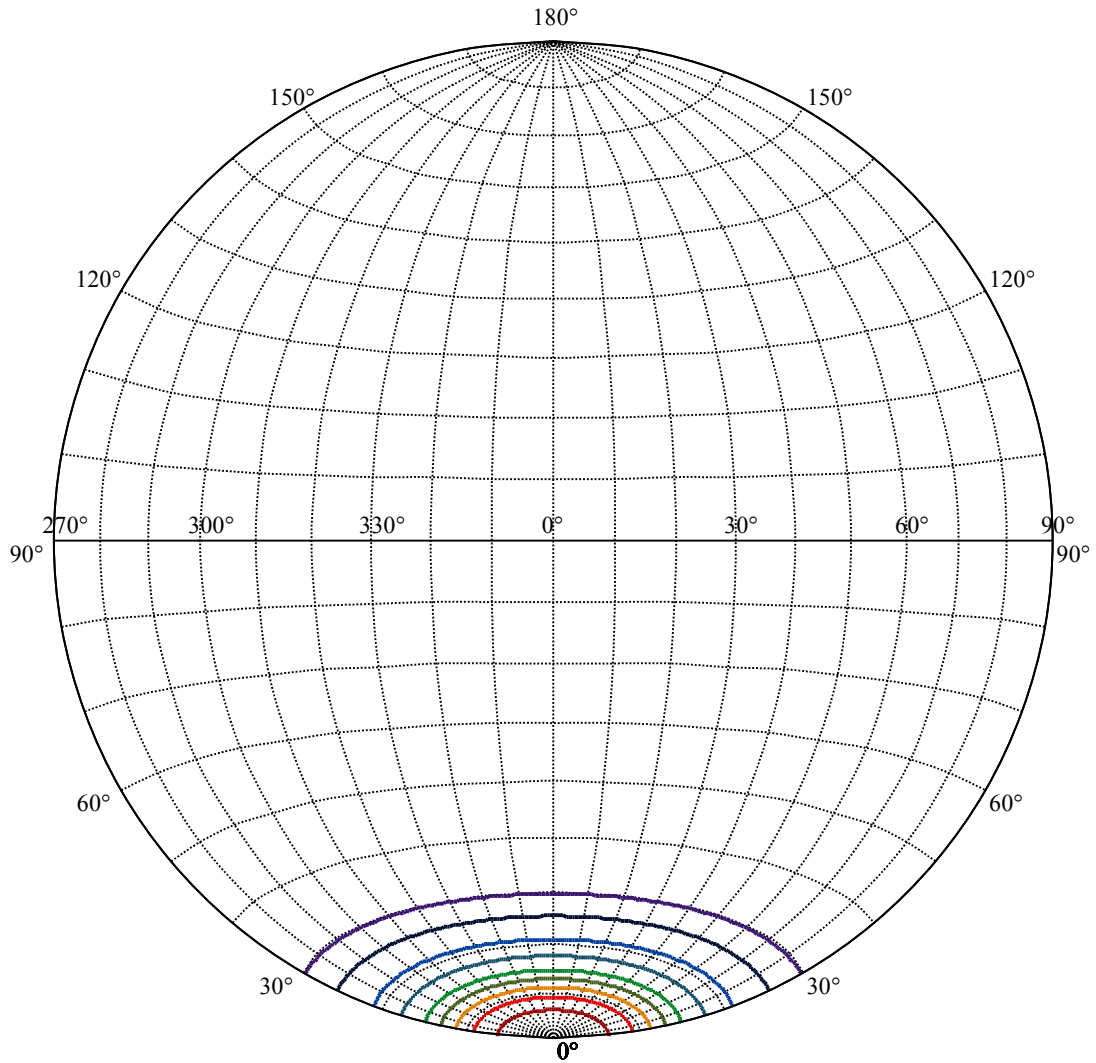
Beam Angle(50%Imax):C0/180Left:14.9 Right:14.9

:C90/270Left:14.9 Right:14.9





(10%Imax) 292.964	—
(20%Imax) 585.928	—
(30%Imax) 878.892	—
(40%Imax) 1171.86	—
(50%Imax) 1464.82	—
(60%Imax) 1757.78	—
(70%Imax) 2050.75	—
(80%Imax) 2343.71	—
(90%Imax) 2636.68	—



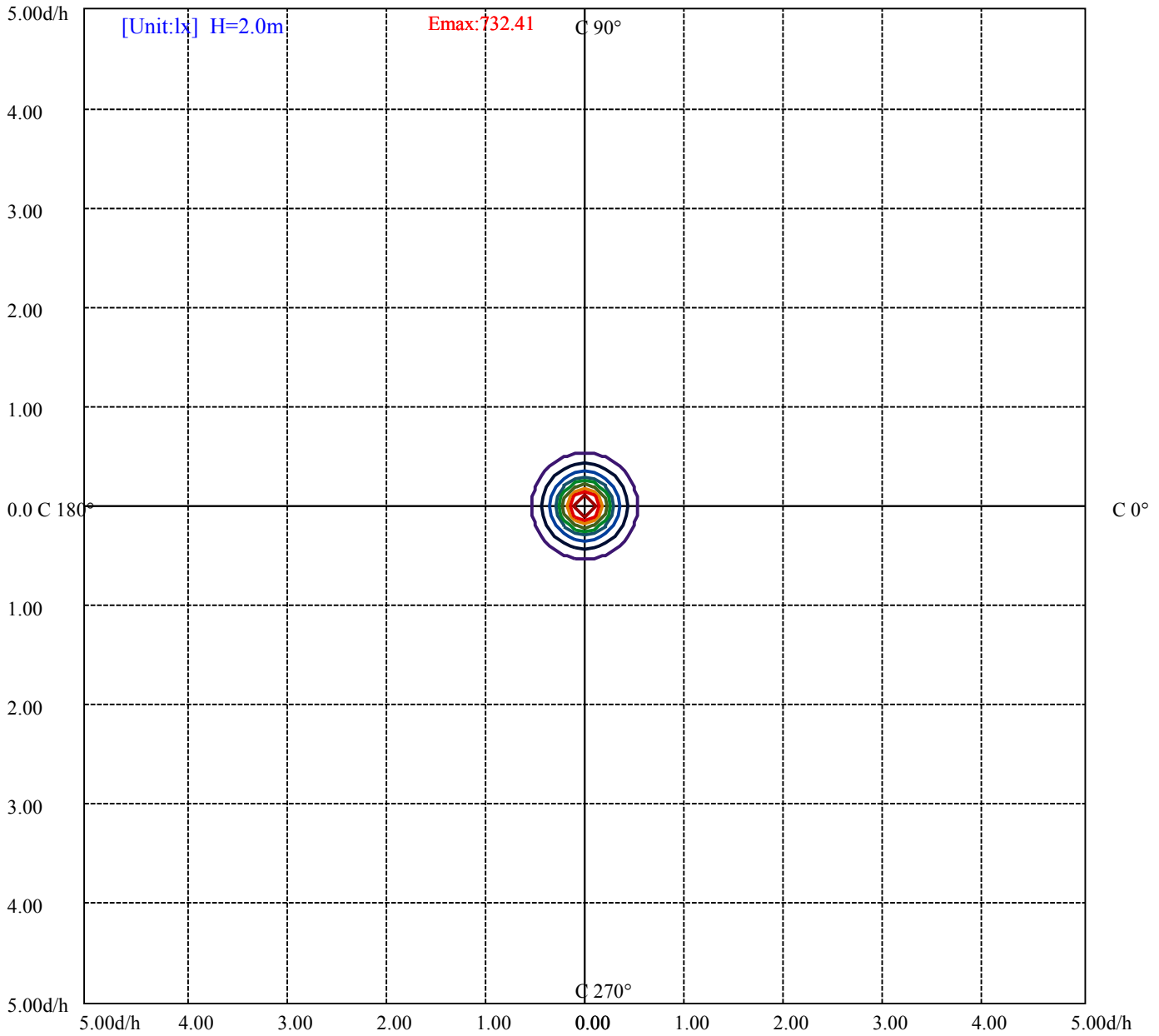
House

[Unit:cd]

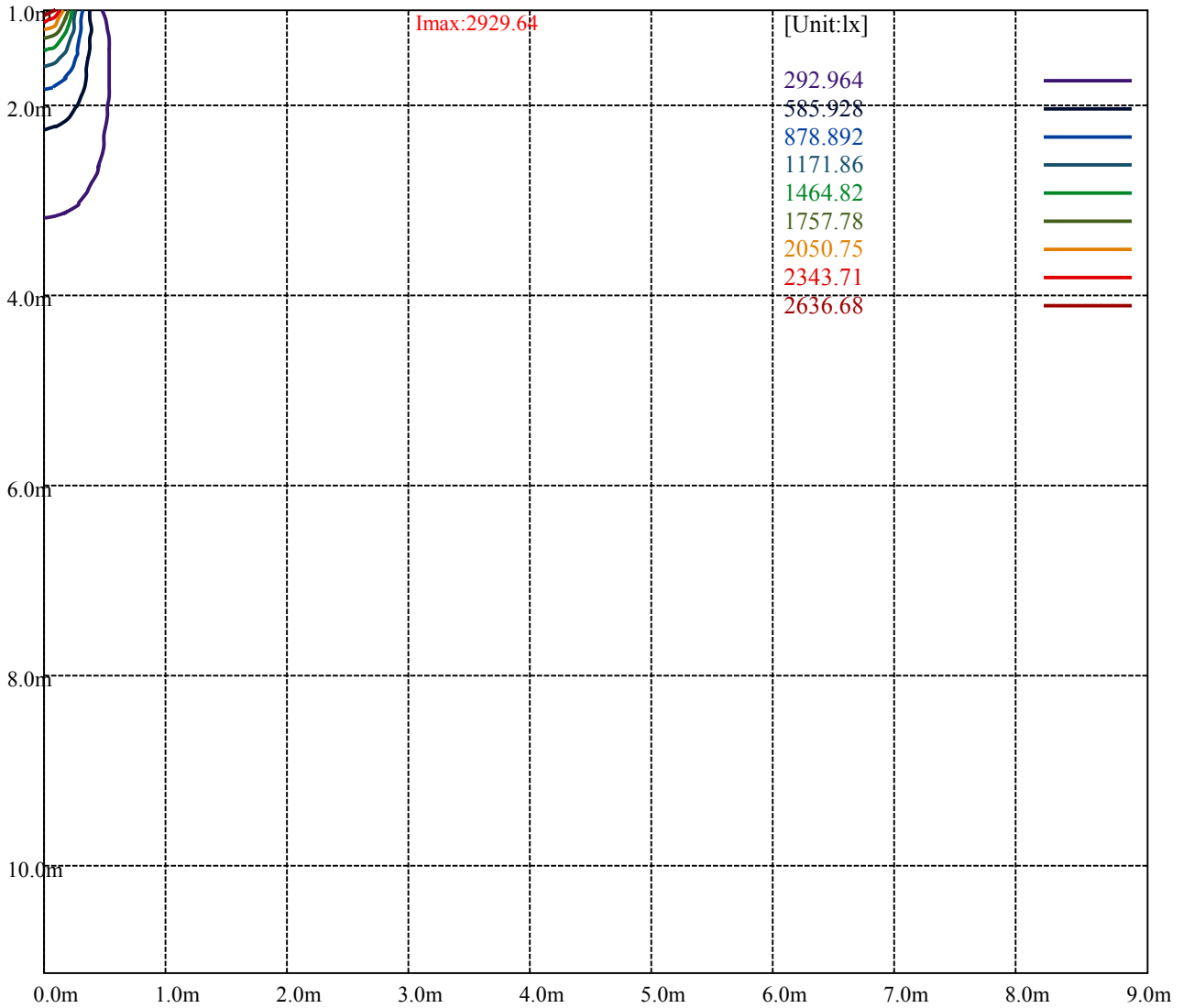
Road

Imax:2929.64

(10%Imax) 292.964	—
(20%Imax) 585.928	—
(30%Imax) 878.892	—
(40%Imax) 1171.86	—
(50%Imax) 1464.82	—
(60%Imax) 1757.78	—
(70%Imax) 2050.75	—
(80%Imax) 2343.71	—
(90%Imax) 2636.68	—



(10%Emax) 73.241	—
(20%Emax) 146.4818	—
(30%Emax) 219.7227	—
(40%Emax) 292.9625	—
(50%Emax) 366.205	—
(60%Emax) 439.445	—
(70%Emax) 512.6875	—
(80%Emax) 585.9275	—
(90%Emax) 659.1675	—



Luminance Table

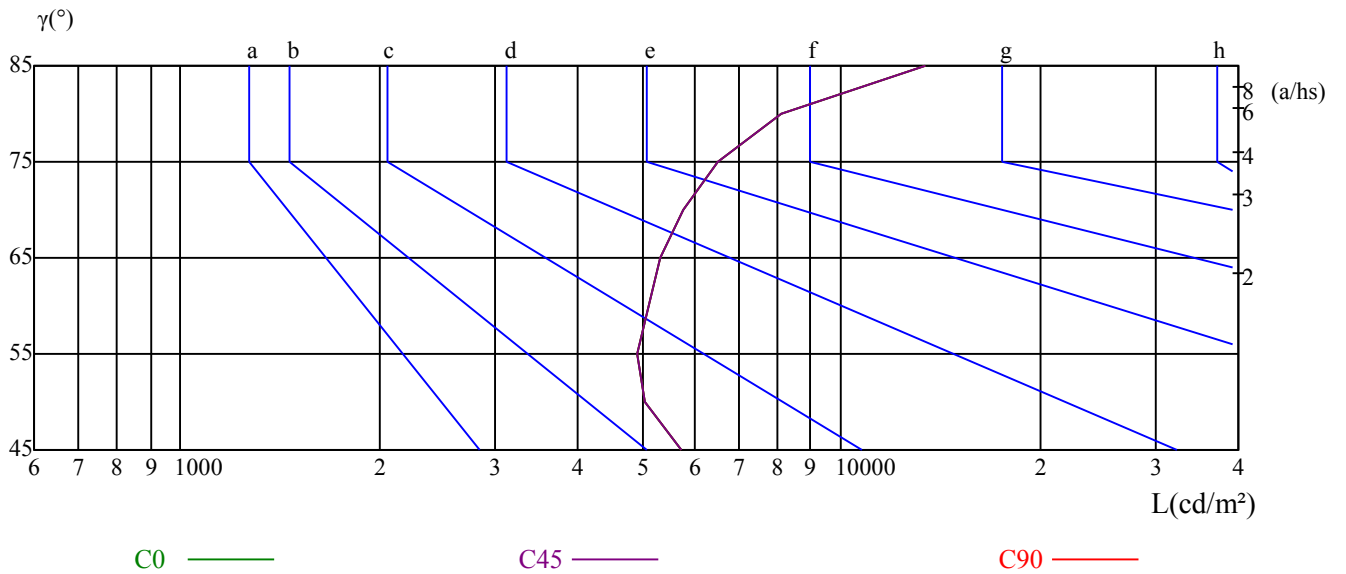
γ	45	50	55	60	65	70	75	80	85
C0	5748	5034	4915	5131	5326	5786	6499	8114	13454
C45	5748	5034	4915	5131	5326	5786	6499	8114	13454
C90	5748	5034	4915	5131	5326	5786	6499	8114	13454

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5326	5326	5326	6499	6499	6499	13454	13454	13454

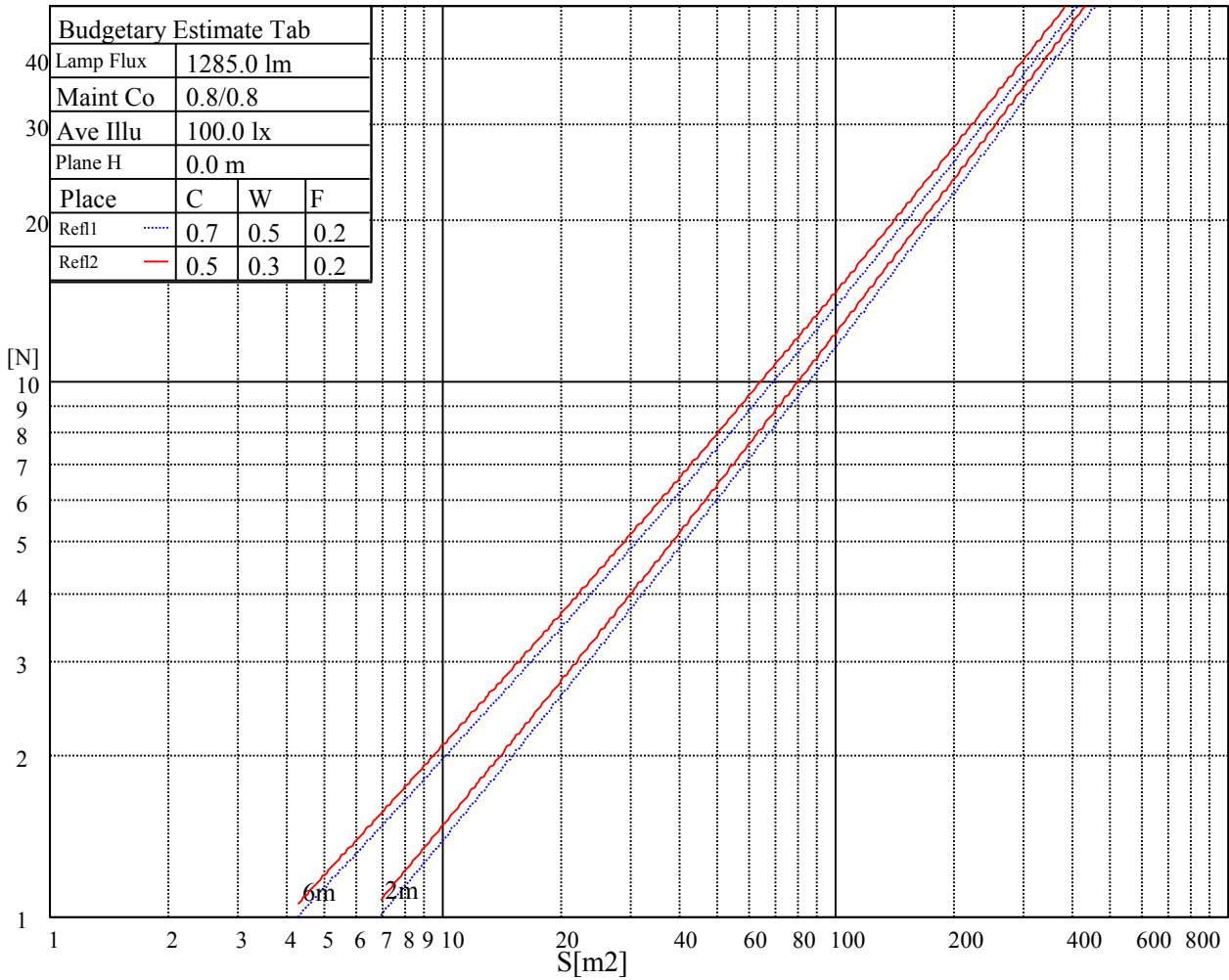
Glare Table

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

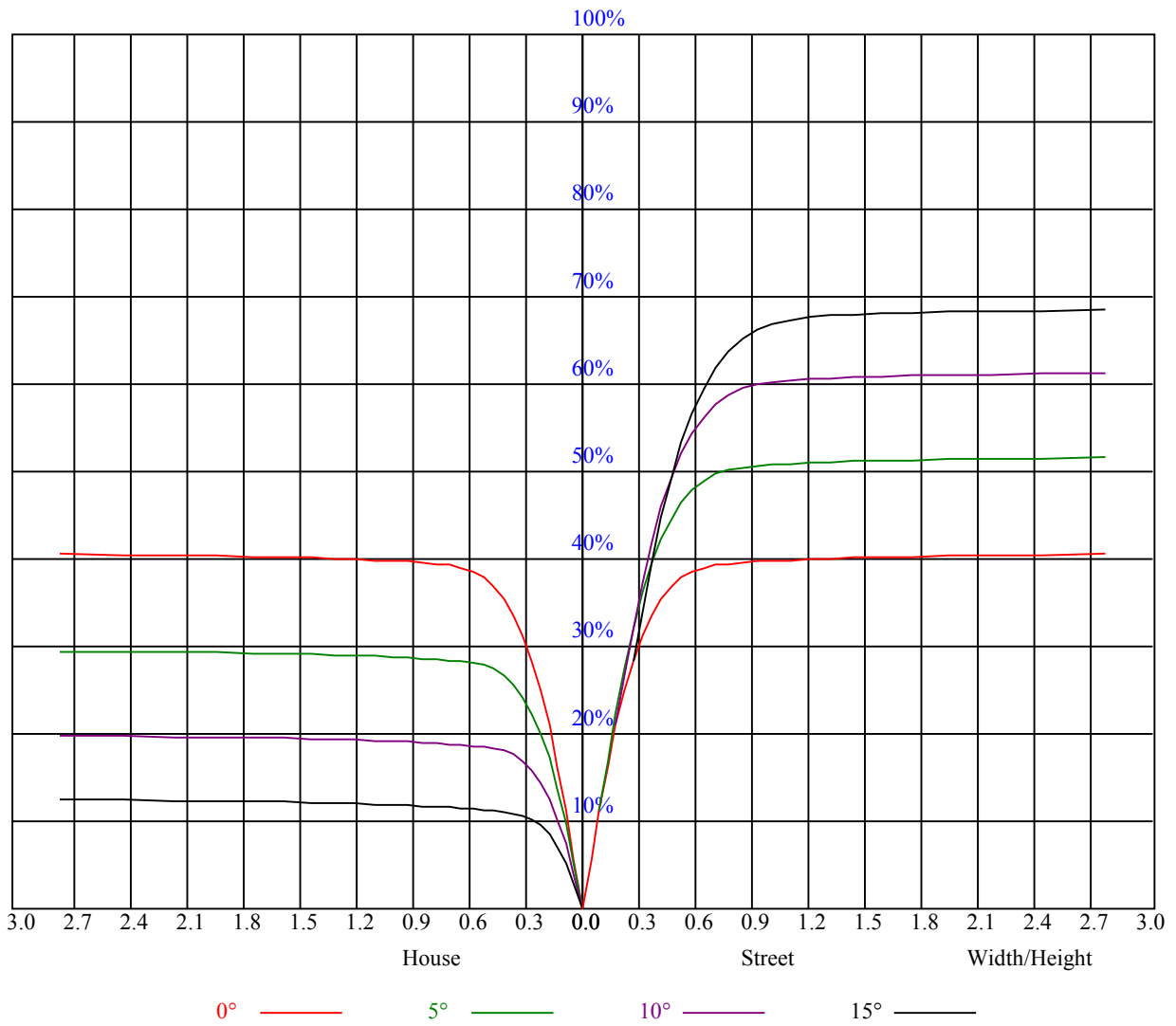
Luminance Limiting Curve



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	9.54	10.50	9.91	10.81	11.13	9.43	10.38	9.79	10.69	11.01
	3H	12.07	12.91	12.45	13.25	13.61	11.83	12.67	12.21	13.00	13.37
	4H	13.24	14.02	13.65	14.37	14.76	13.00	13.79	13.41	14.14	14.53
	6H	14.39	15.10	14.81	15.48	15.88	14.25	14.97	14.67	15.35	15.74
	8H	14.97	15.64	15.40	16.03	16.44	14.92	15.59	15.36	15.99	16.40
	12H	15.93	16.57	16.37	16.96	17.39	16.04	16.69	16.48	17.07	17.50
4H	2H	10.16	10.94	10.57	11.30	11.69	10.07	10.86	10.48	11.21	11.60
	3H	12.92	13.56	13.34	13.97	14.38	12.72	13.37	13.14	13.78	14.18
	4H	14.25	14.83	14.69	15.26	15.70	14.07	14.64	14.51	15.07	15.52
	6H	15.47	15.96	15.94	16.41	16.89	15.37	15.86	15.84	16.31	16.79
	8H	16.18	16.64	16.66	17.09	17.56	16.17	16.63	16.65	17.08	17.55
	12H	17.16	17.56	17.65	18.05	18.53	17.30	17.70	17.79	18.19	18.67
8H	4H	14.69	15.15	15.17	15.60	16.08	14.54	15.00	15.02	15.45	15.93
	6H	16.19	16.55	16.70	17.05	17.54	16.12	16.48	16.63	16.99	17.47
	8H	17.07	17.40	17.61	17.92	18.42	17.10	17.42	17.63	17.94	18.44
	12H	18.36	18.63	18.88	19.13	19.71	18.50	18.78	19.03	19.28	19.86
12H	4H	14.79	15.18	15.28	15.67	16.15	14.64	15.03	15.13	15.52	16.00
	6H	16.63	16.70	16.92	17.17	17.72	16.56	16.64	16.85	17.11	17.66
	8H	17.39	17.66	17.91	18.16	18.74	17.41	17.69	17.93	18.19	18.77
Variation with the observer position at spacings:											
S = 1.0H	2.9/-1.5					2.9/-1.5					
S = 1.5H	3.7/-1.3					3.7/-1.3					
S = 2.0H	4.3/-1.1					4.3/-1.1					
Standard tables:	BKBF					BKBF					
Uncorrected UGR	1.5					1.5					



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	0.98	0.98	0.98	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.84	0.84	0.84	0.83
1	0.91	0.89	0.87	0.89	0.87	0.85	0.86	0.84	0.83	0.83	0.81	0.80	0.80	0.79	0.78	0.76
2	0.86	0.83	0.80	0.85	0.82	0.79	0.82	0.80	0.78	0.80	0.78	0.76	0.77	0.76	0.74	0.73
3	0.82	0.78	0.75	0.81	0.77	0.75	0.79	0.76	0.74	0.77	0.74	0.72	0.75	0.73	0.71	0.70
4	0.78	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.70	0.74	0.72	0.69	0.73	0.70	0.69	0.68
5	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.65
6	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.69	0.67	0.64	0.68	0.66	0.64	0.63
7	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.67	0.64	0.62	0.67	0.64	0.62	0.61
8	0.67	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.65	0.62	0.60	0.65	0.62	0.60	0.59
9	0.65	0.61	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.64	0.61	0.58	0.63	0.60	0.58	0.57
10	0.63	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.62	0.59	0.57	0.61	0.59	0.57	0.56



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	2923.88	2845.13	2416.50	1722.94	1067.63	711.00	393.75	77.12	35.33
45.0	2933.44	2777.63	2313.00	1526.06	969.19	658.13	294.75	61.48	30.54
90.0	2920.50	2686.50	2060.44	1116.28	834.75	527.85	189.17	47.64	25.09
135.0	2940.75	2792.25	2213.44	1406.25	919.69	613.69	291.38	50.63	25.48
180.0	2923.88	2731.50	2091.94	1121.23	833.18	548.94	164.19	44.83	25.43
225.0	2933.44	2820.38	2272.50	1472.63	921.77	622.29	253.41	54.34	27.39
270.0	2920.50	2858.63	2406.38	1659.38	1033.88	667.13	338.06	69.19	31.33
315.0	2940.75	2799.56	2290.50	1515.94	988.09	657.34	299.64	64.74	30.66
360.0	2923.88	2845.13	2416.50	1722.94	1067.63	711.00	393.75	77.12	35.33
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	22.33	16.59	13.78	12.71	10.97	9.68	8.33	7.37	5.79
45.0	19.80	15.58	13.22	12.15	10.46	9.11	7.82	6.58	5.57
90.0	18.17	15.19	13.39	12.88	11.36	9.96	8.21	6.41	5.01
135.0	17.83	14.68	13.05	11.64	10.29	8.94	7.65	6.36	5.63
180.0	18.17	14.74	13.33	11.81	10.46	9.11	7.88	6.53	5.91
225.0	18.79	14.96	13.16	11.87	10.46	9.11	7.88	6.69	5.63
270.0	20.14	15.98	14.06	12.66	11.31	10.24	8.49	7.03	5.57
315.0	19.58	15.53	13.39	11.98	10.41	9.23	7.82	6.69	5.57
360.0	22.33	16.59	13.78	12.71	10.97	9.68	8.33	7.37	5.79
C/ γ (°)	90.0								
0.0	4.89								
45.0	4.56								
90.0	4.56								
135.0	4.61								
180.0	4.56								
225.0	4.61								
270.0	4.61								
315.0	4.73								
360.0	4.89								