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## NATA

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LumCAT: 4-2275-M  
Luminaire: 92.70.135.00  
Report No: NATA0100  
Test No: GC2018102518  
LampCAT: LUMILEDS LUXEON 1205  
Lamp flux(lm): 2979.0  
Number of Lamps: 1  
Length(mm): 100  
Phm Type: C

Voltage(V): 35.7000  
Current(A): 0.6000  
Power (W): 21.4200  
PF: 0.0000  
Ballast type: DC  
Width(mm): 100  
Height(mm): 0

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## Photometric Results

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Lumens(lm): 2691.66  
Efficiency(%): 90.35%  
Lumens(lm)/Power(W): 129.34  
Central intensity(cd): 13618.130  
Maximum intensity(cd): 13618.130  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=19.7  
                                  [C90/270]Total=19.7  
Field angle(10%Imax): [C0/180]Total=39.5  
                                  [C90/270]Total=39.5  
Maximum s/h(1/2): C0\_180=0.34 C90\_270=0.34  
Maximum s/h(1/4): C0\_180=0.35 C90\_270=0.35  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 93.00%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 95.998%

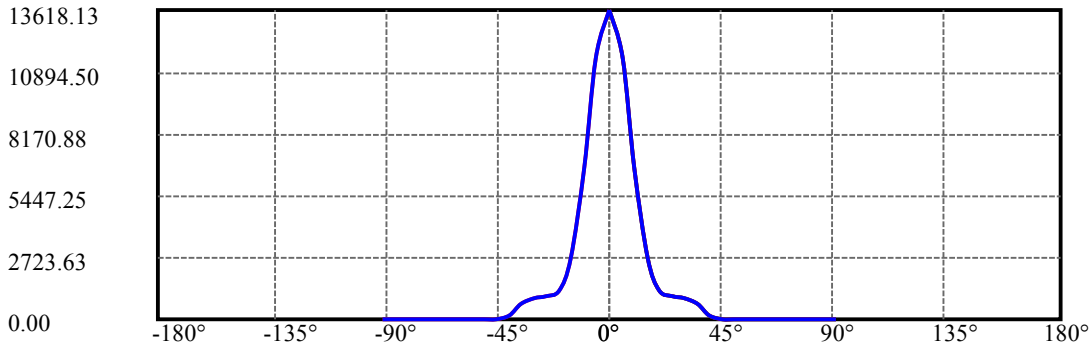
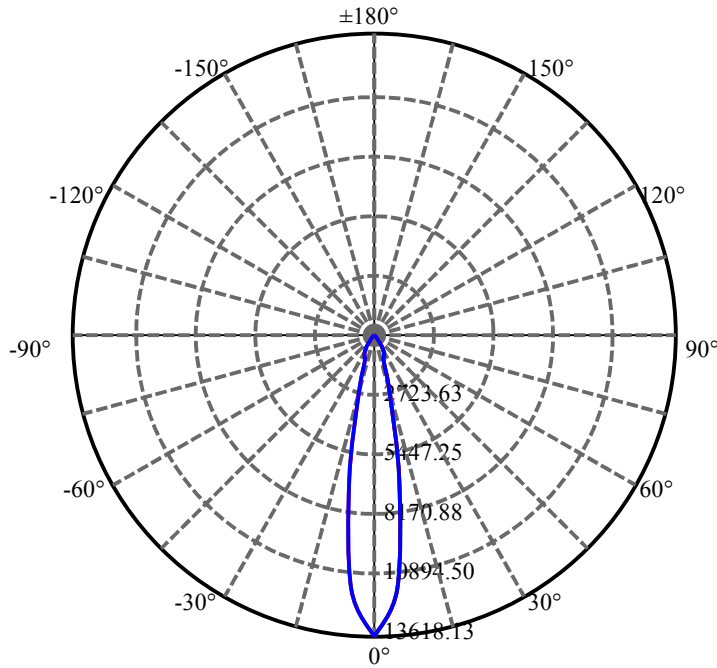
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	13618.125	81.439	81.439	2.734%	3.026%
5.0	11489.344	548.884	630.323	18.425%	23.418%
10.0	6648.328	632.808	1263.131	21.242%	46.928%
15.0	2720.883	386.007	1649.139	12.958%	61.269%
20.0	1290.516	241.938	1891.077	8.121%	70.257%
25.0	1005.961	233.034	2124.111	7.823%	78.915%
30.0	924.630	253.412	2377.523	8.507%	88.329%
35.0	674.177	211.960	2589.483	7.115%	96.204%
40.0	136.617	48.135	2637.618	1.616%	97.992%
45.0	14.379	5.573	2643.192	.187%	98.199%
50.0	12.923	5.427	2648.618	.182%	98.401%
55.0	12.206	5.481	2654.099	.184%	98.605%
60.0	11.728	5.567	2659.666	.187%	98.812%
65.0	11.398	5.662	2665.328	.190%	99.022%
70.0	11.166	5.751	2671.08	.193%	99.236%
75.0	10.990	5.819	2676.898	.195%	99.452%
80.0	10.898	5.883	2682.781	.197%	99.670%
85.0	10.842	5.920	2688.702	.199%	99.890%
90.0	10.779	2.954	2691.656	.099%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2377.52	79.81%	88.33%
0-40	2637.62	88.54%	97.99%
0-60	2659.67	89.28%	98.81%
0-90	2688.70	90.26%	99.89%
0-120	2688.70	90.26%	99.89%
0-180	2691.66	90.35%	100.00%
60-90	34.60	1.16%	1.29%
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%
0-25.58	2153.33	72.28%	80.00%

ZONAL LUMEN SUMMARY

0-10	1263.13
10-20	627.95
20-30	486.45
30-40	260.10
40-50	11.00
50-60	11.05
60-70	11.41
70-80	11.70
80-90	5.92
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



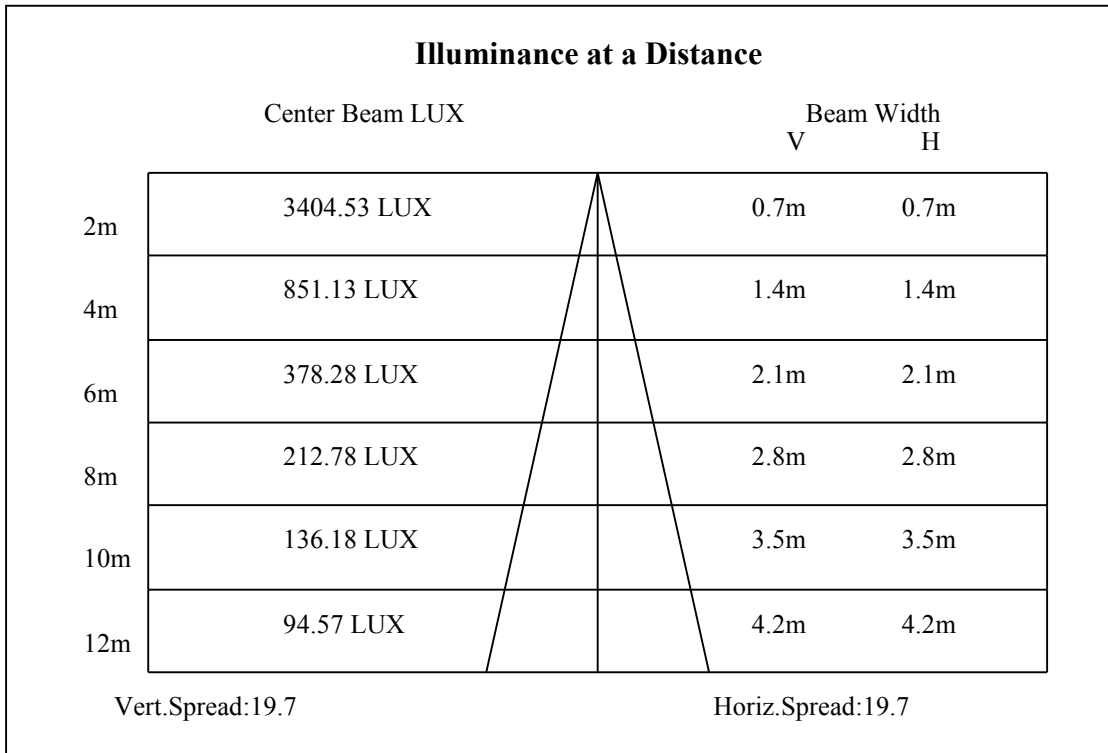
C0(Max): —————

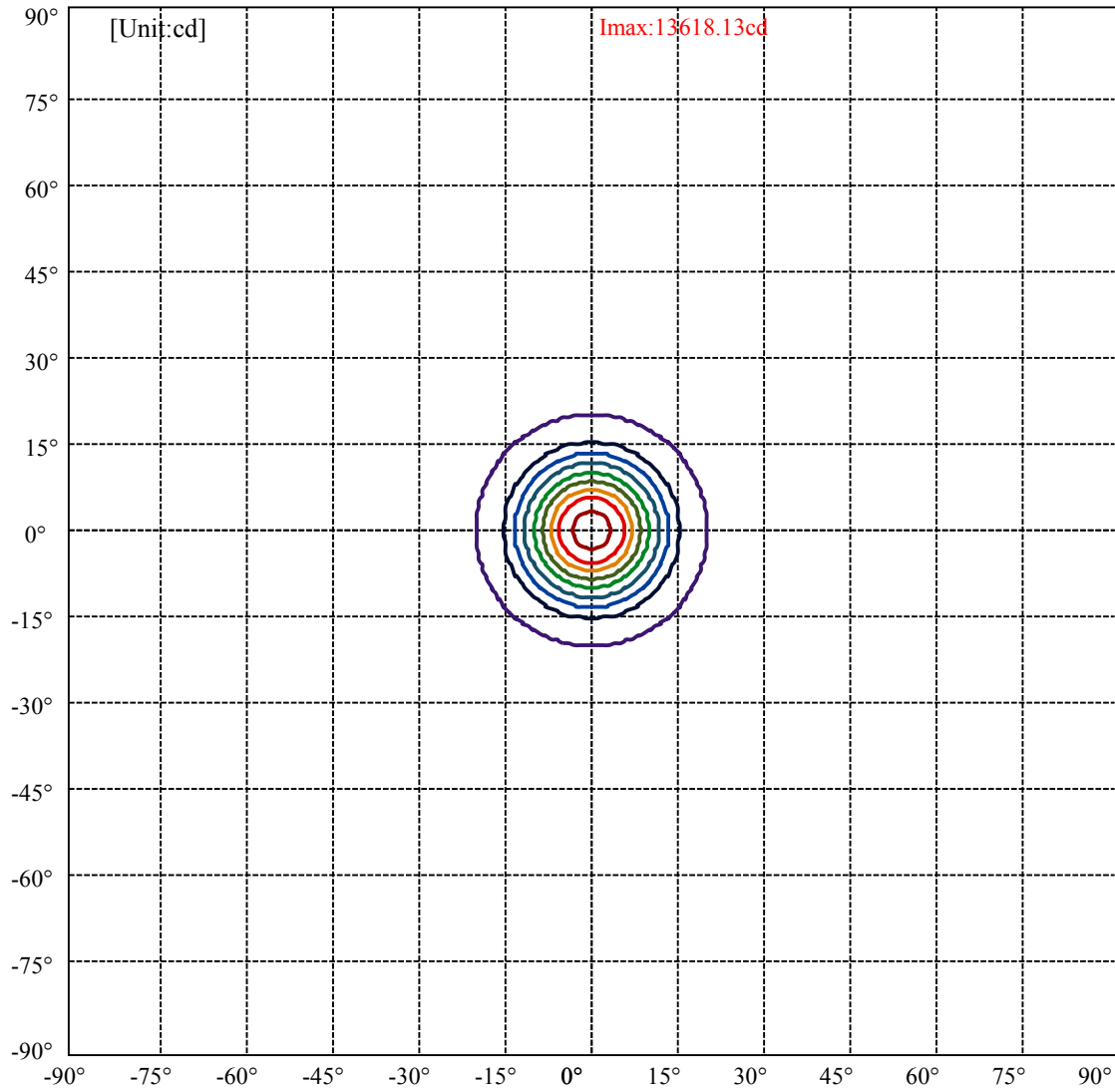
C0/C180: —————

C90/C270: —————

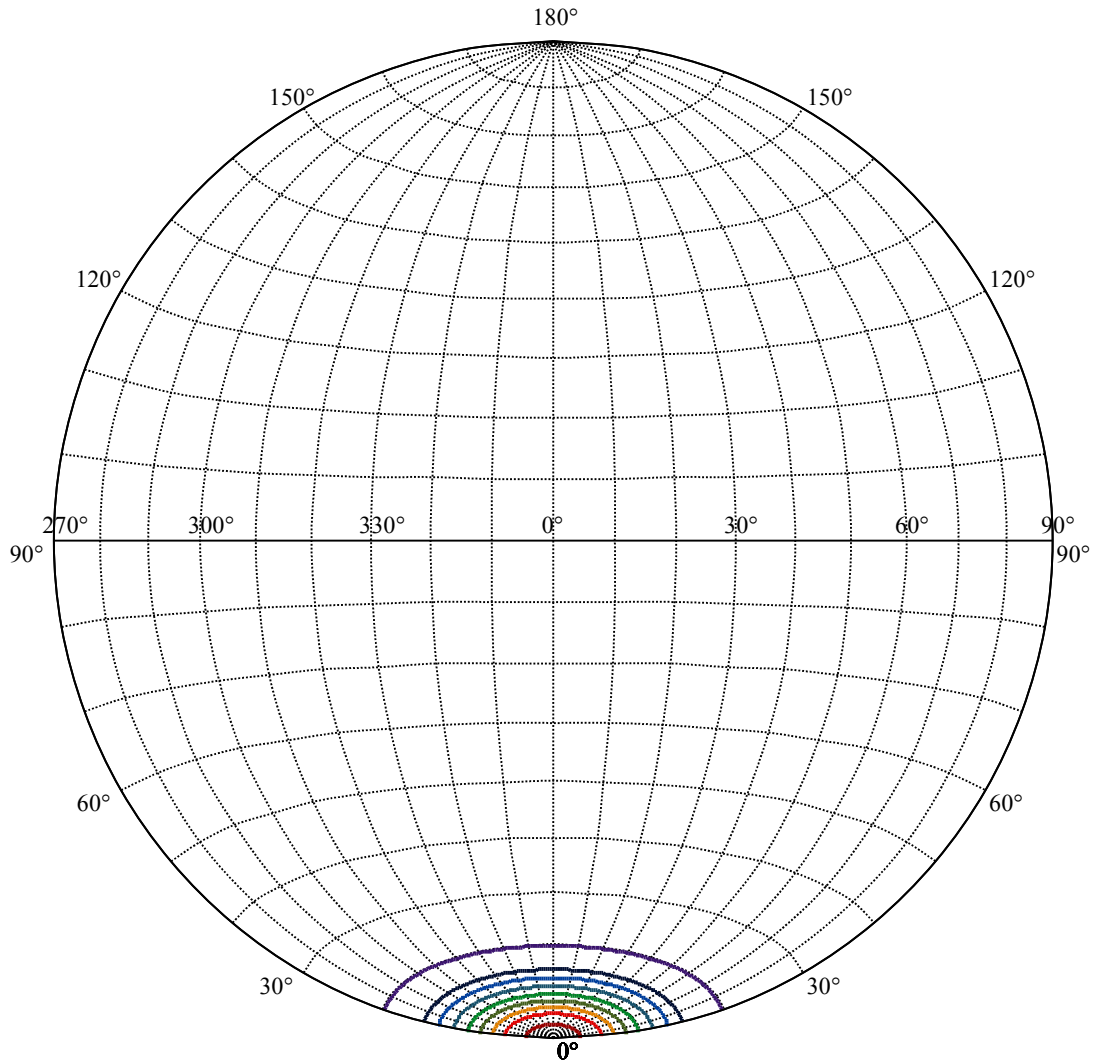
Field angle(10%Imax):C0/180Left:19.8 Right:19.8  
:C90/270Left:19.8 Right:19.8

Beam Angle(50%Imax):C0/180Left:9.8 Right:9.8  
:C90/270Left:9.8 Right:9.8





(10%Imax) 1361.81	—
(20%Imax) 2723.63	—
(30%Imax) 4085.44	—
(40%Imax) 5447.25	—
(50%Imax) 6809.06	—
(60%Imax) 8170.88	—
(70%Imax) 9532.69	—
(80%Imax) 10894.5	—
(90%Imax) 12256.3	—



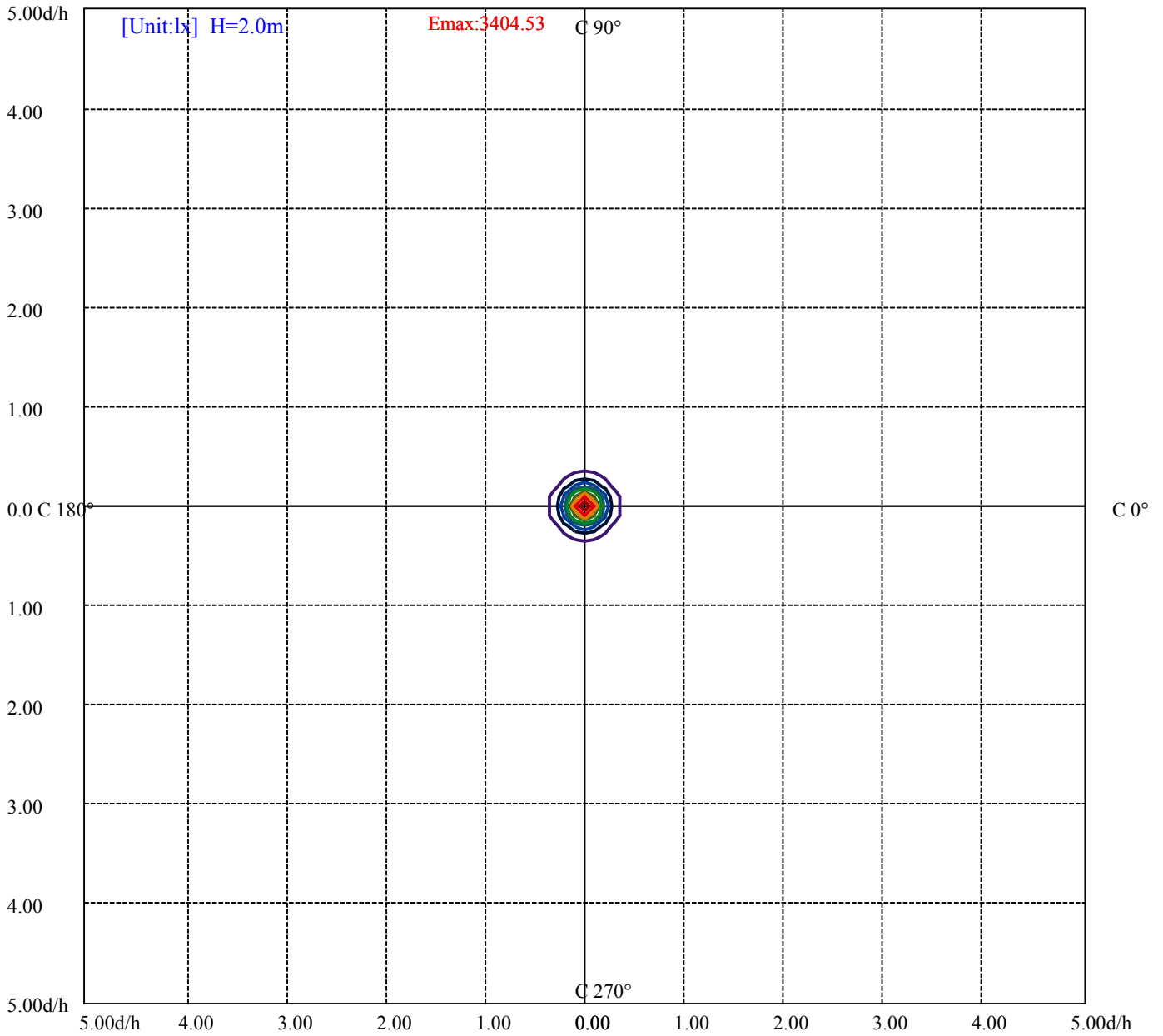
House

[Unit:cd]

Road

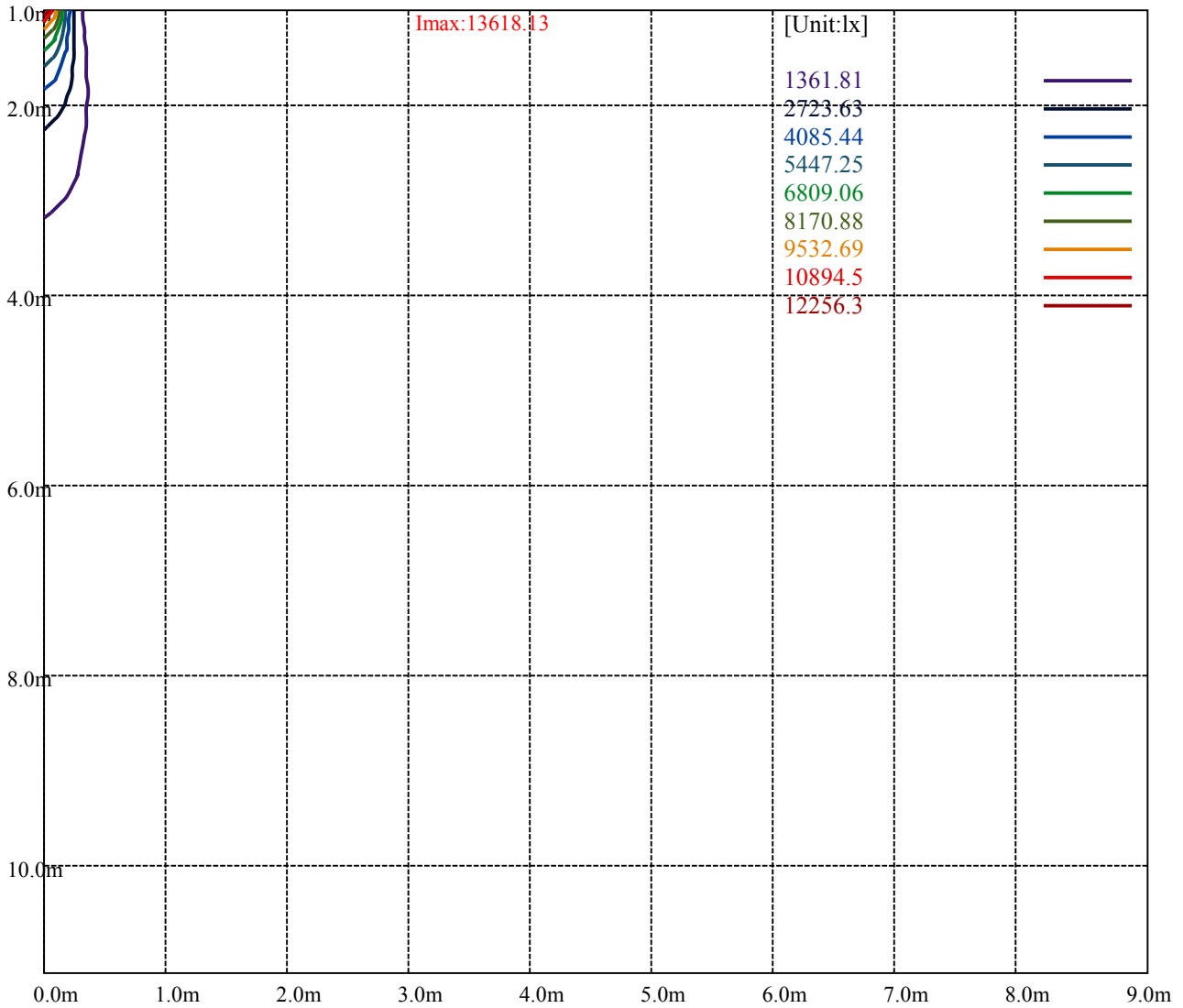
**Imax:13618.13**

(10%Imax)	1361.81	—
(20%Imax)	2723.63	—
(30%Imax)	4085.44	—
(40%Imax)	5447.25	—
(50%Imax)	6809.06	—
(60%Imax)	8170.88	—
(70%Imax)	9532.69	—
(80%Imax)	10894.5	—
(90%Imax)	12256.3	—



(10%Emax) 340.4525	—
(20%Emax) 680.9025	—
(30%Emax) 1021.355	—
(40%Emax) 1361.805	—
(50%Emax) 1702.257	—
(60%Emax) 2042.71	—
(70%Emax) 2383.16	—
(80%Emax) 2723.6	—
(90%Emax) 3064.075	—





Luminance Table

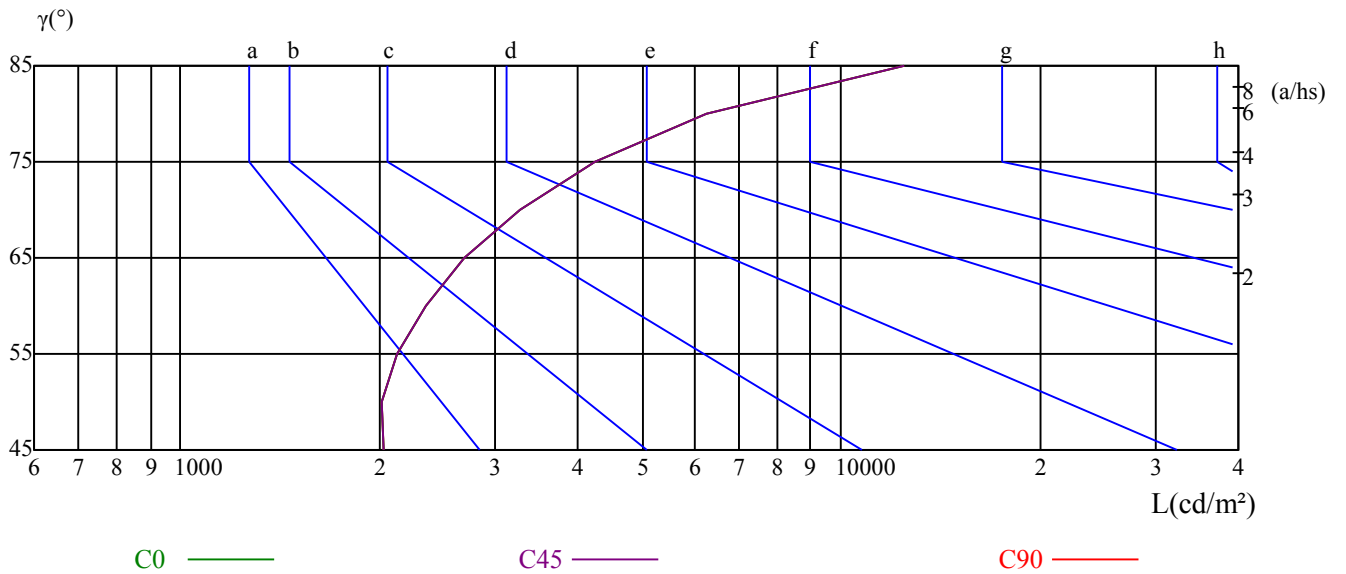
$\gamma$	45	50	55	60	65	70	75	80	85
C0	2033	2011	2128	2346	2697	3265	4246	6276	12440
C45	2033	2011	2128	2346	2697	3265	4246	6276	12440
C90	2033	2011	2128	2346	2697	3265	4246	6276	12440

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2697	2697	2697	4246	4246	4246	12440	12440	12440

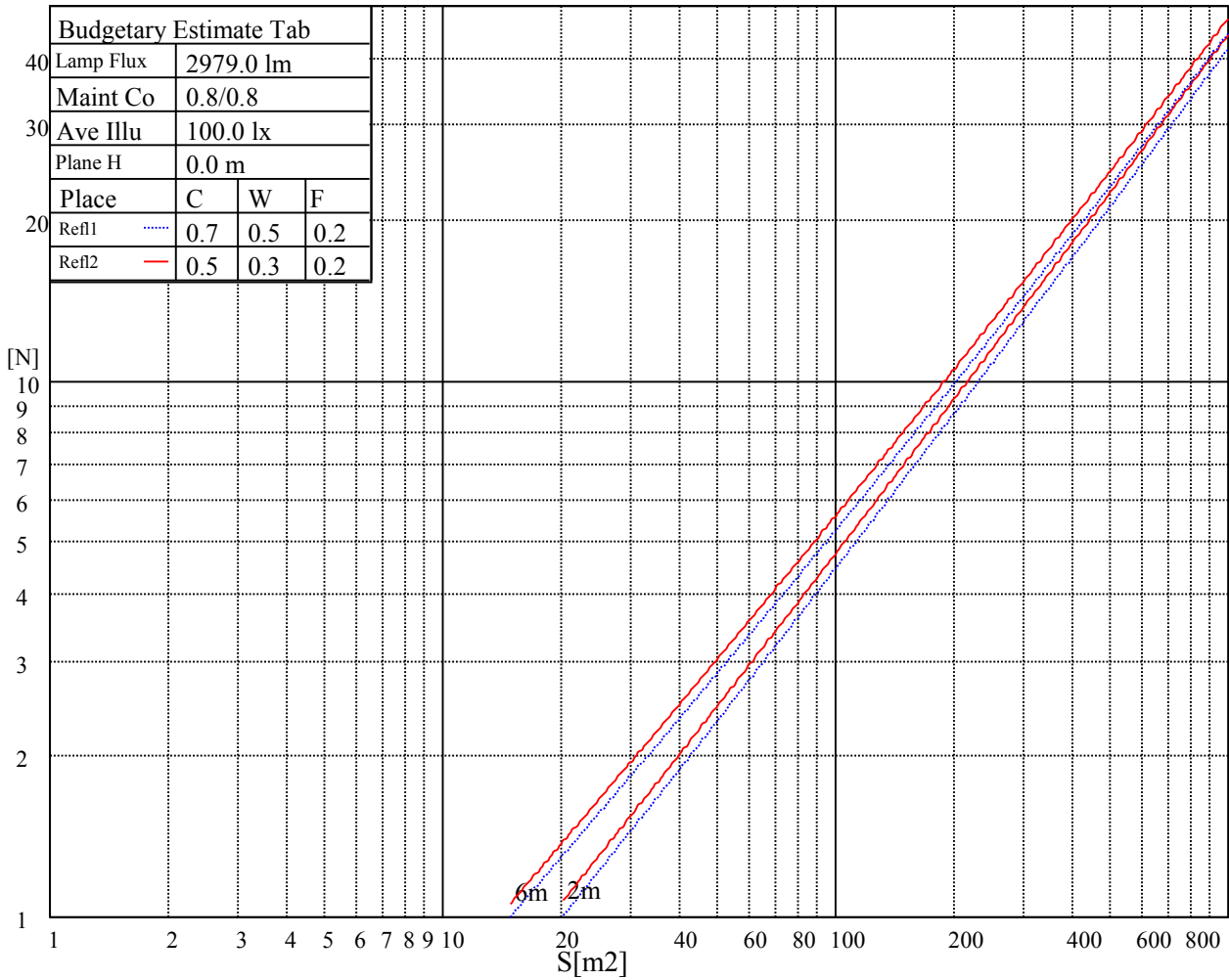
Glare Table

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

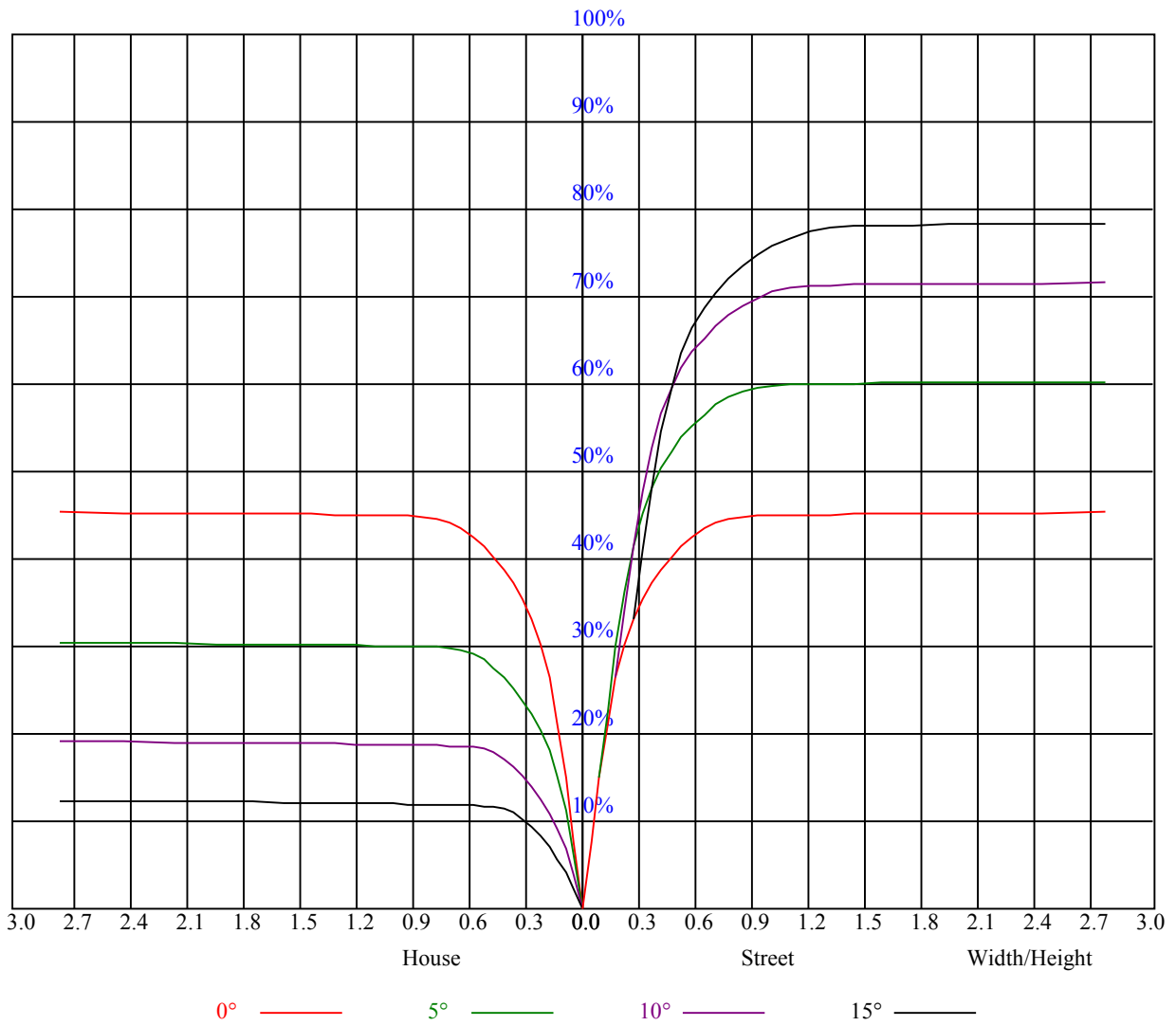
Luminance Limiting Curve



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	-0.07	0.84	0.29	1.15	1.46	-0.13	0.78	0.24	1.09	1.41
	3H	3.15	3.95	3.53	4.28	4.65	3.09	3.89	3.47	4.22	4.59
	4H	4.90	5.65	5.31	6.00	6.39	4.86	5.60	5.26	5.95	6.34
	6H	6.89	7.57	7.31	7.94	8.34	6.83	7.51	7.25	7.89	8.28
	8H	7.98	8.62	8.42	9.01	9.42	7.93	8.56	8.36	8.95	9.37
	12H	9.76	10.37	10.19	10.75	11.18	9.70	10.31	10.14	10.69	11.13
4H	2H	0.84	1.58	1.25	1.94	2.33	0.80	1.54	1.21	1.90	2.29
	3H	4.30	4.91	4.72	5.32	5.73	4.27	4.88	4.68	5.29	5.69
	4H	6.23	6.77	6.66	7.19	7.64	6.20	6.74	6.64	7.16	7.61
	6H	8.37	8.83	8.84	9.28	9.76	8.33	8.79	8.80	9.24	9.72
	8H	9.56	9.99	10.04	10.45	10.92	9.51	9.94	9.99	10.39	10.87
	12H	11.23	11.60	11.72	12.09	12.57	11.18	11.55	11.67	12.04	12.52
8H	4H	6.95	7.39	7.43	7.84	8.31	6.93	7.36	7.41	7.81	8.29
	6H	9.37	9.71	9.88	10.21	10.70	9.32	9.66	9.84	10.17	10.66
	8H	10.75	11.05	11.28	11.57	12.07	10.70	11.00	11.23	11.52	12.02
	12H	12.55	12.81	13.07	13.30	13.89	12.50	12.76	13.02	13.26	13.84
12H	4H	7.16	7.53	7.65	8.02	8.50	7.14	7.51	7.63	8.00	8.48
	6H	9.88	9.98	10.22	10.46	11.01	9.84	9.95	10.18	10.42	10.97
	8H	11.19	11.45	11.72	11.95	12.53	11.15	11.41	11.67	11.91	12.49
Variation with the observer position at spacings:											
S = 1.0H		5.2/-7.8					5.2/-7.8				
S = 1.5H		7.4/-5.8					7.4/-5.8				
S = 2.0H		8.8/-4.3					8.8/-4.3				
Standard tables:		BK2					BK2				
Uncorrected UGR		-0.7					-0.7				



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	1.01	0.98	0.96	0.99	0.96	0.94	0.95	0.93	0.91	0.92	0.90	0.89	0.88	0.87	0.86	0.84
2	0.96	0.92	0.89	0.94	0.91	0.88	0.91	0.89	0.86	0.89	0.86	0.84	0.86	0.84	0.83	0.81
3	0.92	0.87	0.84	0.90	0.86	0.83	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.81	0.80	0.78
4	0.88	0.83	0.80	0.87	0.83	0.80	0.85	0.81	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.76
5	0.84	0.80	0.77	0.84	0.79	0.76	0.82	0.78	0.76	0.81	0.77	0.75	0.79	0.76	0.74	0.73
6	0.81	0.77	0.74	0.81	0.77	0.73	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
7	0.79	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.69
8	0.76	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
9	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.65
10	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.70	0.67	0.65	0.64



Intensity data(cd)

C/ $\gamma$ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	13601.25	11874.38	6980.63	2857.50	1372.50	1018.69	933.75	734.06	302.06
45.0	13635.00	11593.13	6406.88	2846.25	1271.81	982.69	909.56	609.75	38.25
90.0	13623.75	11068.88	5721.75	2198.25	1114.26	967.05	897.02	577.24	30.77
135.0	13612.50	12031.88	7391.25	2874.38	1387.13	1015.31	923.06	725.63	299.25
180.0	13601.25	11225.81	6386.06	2511.56	1114.48	992.19	912.83	635.57	39.21
225.0	13635.00	11013.75	6864.19	2874.94	1438.31	1022.74	937.97	710.94	63.28
270.0	13623.75	11992.50	7419.38	3155.63	1518.19	1050.19	956.81	797.63	290.25
315.0	13612.50	11114.44	6016.50	2448.56	1107.45	998.83	926.04	602.61	29.87
360.0	13601.25	11874.38	6980.63	2857.50	1372.50	1018.69	933.75	734.06	302.06
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	14.18	12.88	12.09	11.64	11.36	11.08	10.91	10.86	10.80
45.0	13.95	12.88	12.21	11.76	11.48	11.25	11.03	10.91	10.86
90.0	13.78	12.71	12.15	11.70	11.42	11.19	11.03	10.91	10.86
135.0	14.18	12.94	12.26	11.81	11.48	11.19	11.03	10.91	10.86
180.0	13.95	12.77	12.09	11.64	11.31	11.14	10.97	10.86	10.80
225.0	15.02	13.44	12.60	11.81	11.42	11.19	10.97	10.91	10.86
270.0	16.03	13.11	12.21	11.81	11.42	11.19	11.03	10.97	10.91
315.0	13.95	12.66	12.04	11.64	11.31	11.08	10.97	10.86	10.80
360.0	14.18	12.88	12.09	11.64	11.36	11.08	10.91	10.86	10.80
C/ $\gamma$ (°)	90.0								
0.0	10.74								
45.0	10.80								
90.0	10.80								
135.0	10.74								
180.0	10.74								
225.0	10.80								
270.0	10.80								
315.0	10.80								
360.0	10.74								