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## Nata

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LumCAT: 2-1122-A4  
Luminaire: 99.02.73.172+92.76.365.00  
Report No: NATA0100  
Test No: GC2018082712  
LampCAT: CITIZEN CLU038  
Lamp flux(lm): 2534.0  
Number of Lamps: 1  
Length(mm): 70  
Phm Type: C

Voltage(V): 35.4000  
Current(A): 0.4900  
Power (W): 17.3460  
PF: 0.0000  
Ballast type: DC  
Width(mm): 70  
Height(mm): 0

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## Photometric Results

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Lumens(lm): 2324.85  
Efficiency(%): 91.75%  
Lumens(lm)/Power(W): 134.03  
Central intensity(cd): 5277.707  
Maximum intensity(cd): 5277.707  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=34.8  
                                  [C90/270]Total=34.8  
Field angle(10%Imax): [C0/180]Total=70.9  
                                  [C90/270]Total=70.9  
Maximum s/h(1/2): C0\_180=0.57 C90\_270=0.57  
Maximum s/h(1/4): C0\_180=0.58 C90\_270=0.58  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 92.90%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 97.455%

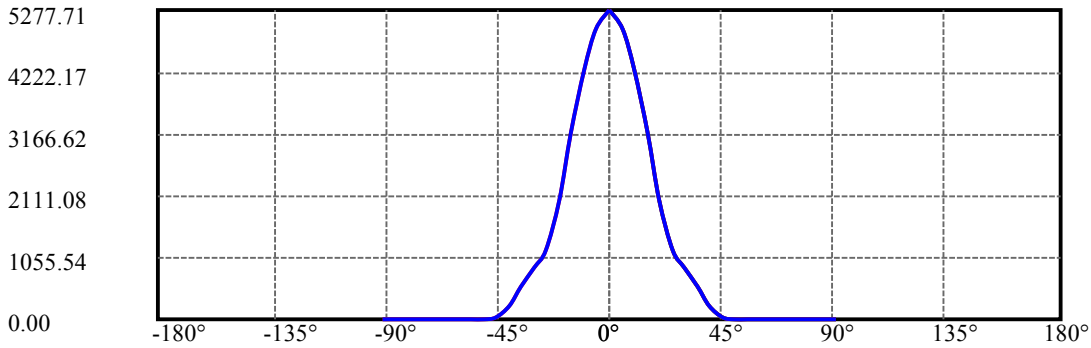
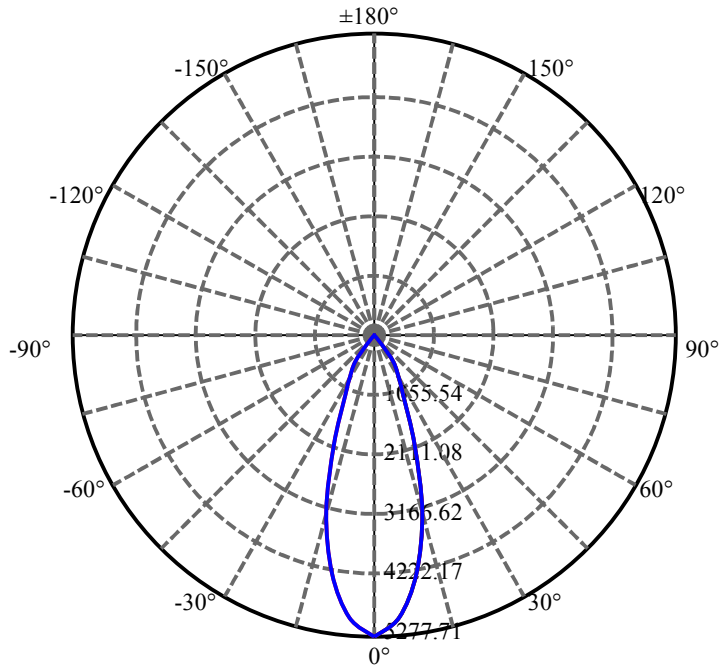
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5277.707	31.562	31.562	1.246%	1.358%
5.0	4945.235	236.250	267.812	9.323%	11.520%
10.0	4248.565	404.391	672.203	15.959%	28.914%
15.0	3195.955	453.405	1125.608	17.893%	48.416%
20.0	2026.488	379.914	1505.522	14.993%	64.758%
25.0	1164.305	269.715	1775.237	10.644%	76.359%
30.0	886.215	242.884	2018.121	9.585%	86.806%
35.0	557.467	175.267	2193.388	6.917%	94.345%
40.0	216.213	76.180	2269.567	3.006%	97.622%
45.0	22.725	8.808	2278.375	.348%	98.001%
50.0	12.587	5.285	2283.661	.209%	98.228%
55.0	11.768	5.284	2288.945	.209%	98.455%
60.0	11.259	5.345	2294.289	.211%	98.685%
65.0	10.922	5.426	2299.715	.214%	98.919%
70.0	10.708	5.516	2305.231	.218%	99.156%
75.0	10.536	5.579	2310.809	.220%	99.396%
80.0	10.406	5.617	2316.427	.222%	99.638%
85.0	10.316	5.633	2322.06	.222%	99.880%
90.0	10.192	2.793	2324.853	.110%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2018.12	79.64%	86.81%
0-40	2269.57	89.56%	97.62%
0-60	2294.29	90.54%	98.69%
0-90	2322.06	91.64%	99.88%
0-120	2322.06	91.64%	99.88%
0-180	2324.85	91.75%	100.00%
60-90	33.12	1.31%	1.42%
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%
0-26.74	1859.88	73.40%	80.00%

ZONAL LUMEN SUMMARY

0-10	672.20
10-20	833.32
20-30	512.60
30-40	251.45
40-50	14.09
50-60	10.63
60-70	10.94
70-80	11.20
80-90	5.63
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: —————

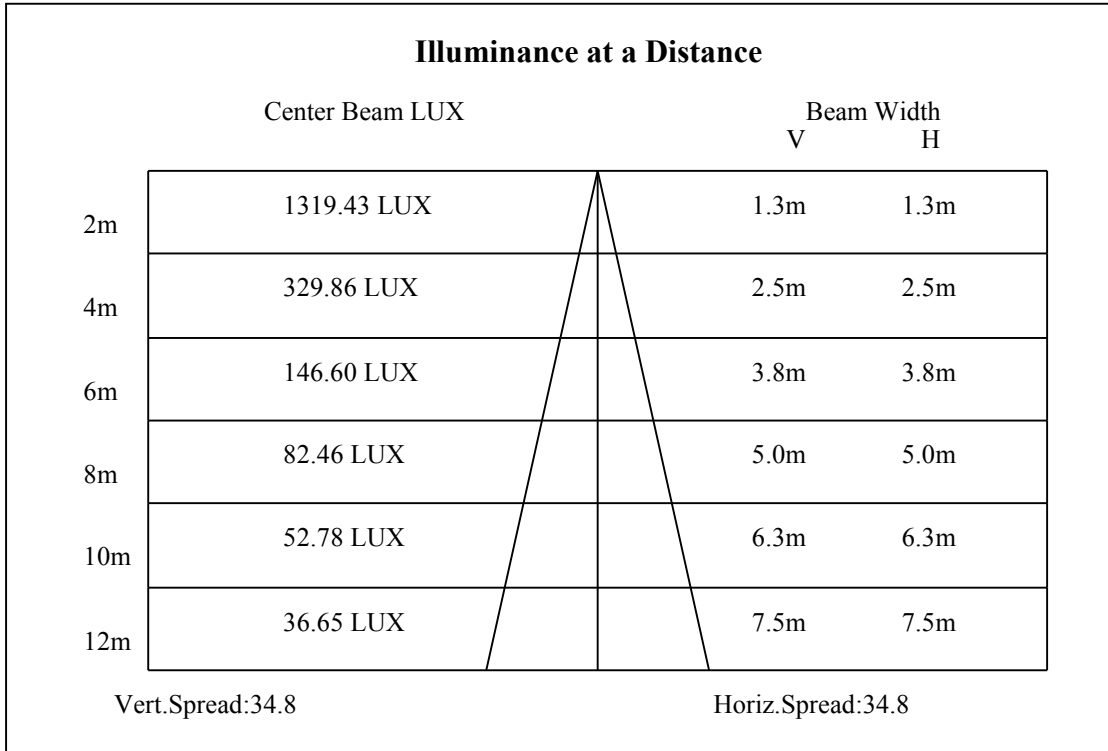
C90/C270: —————

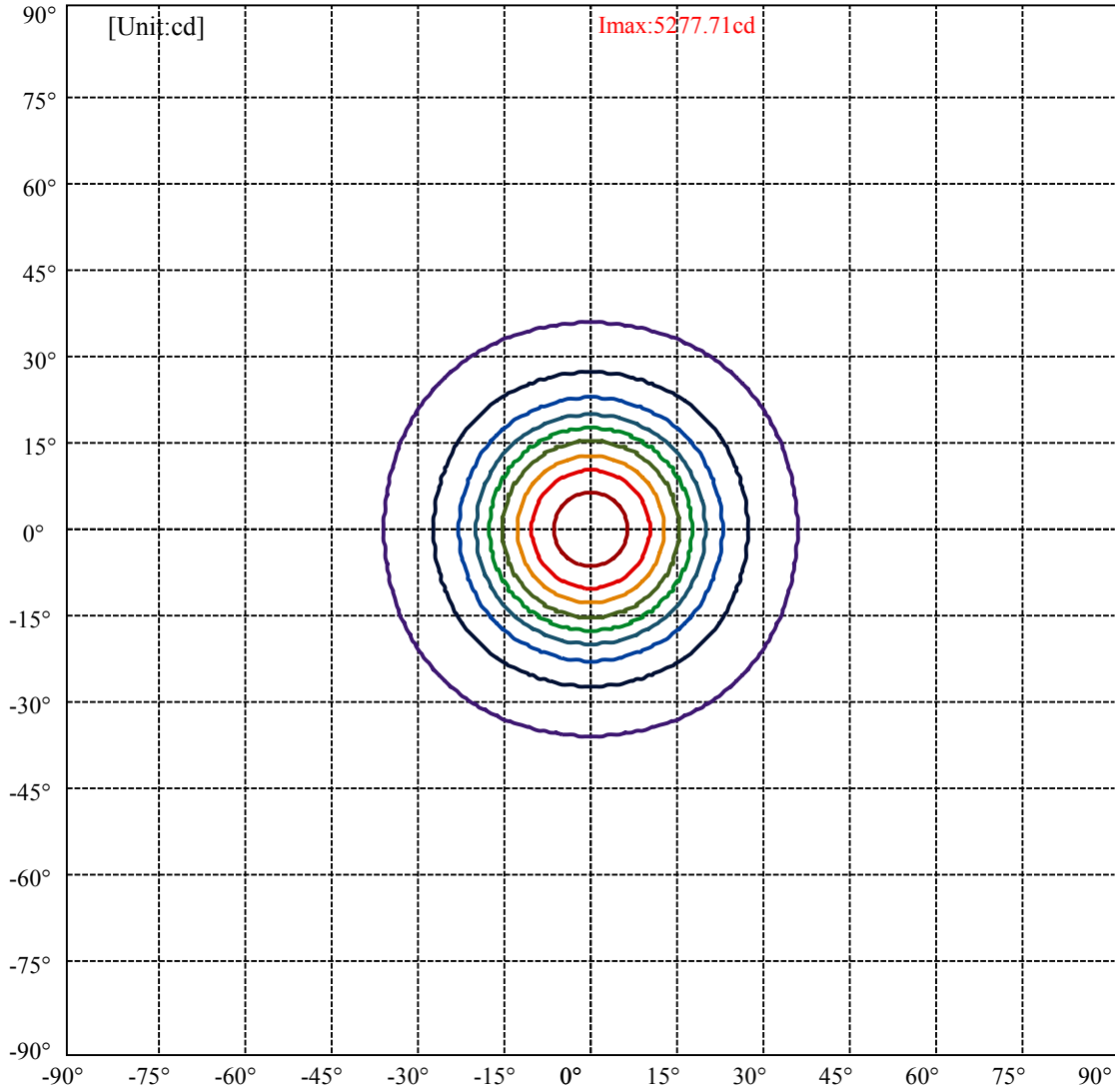
Field angle(10%Imax):C0/180Left:35.4 Right:35.4

:C90/270Left:35.4 Right:35.4

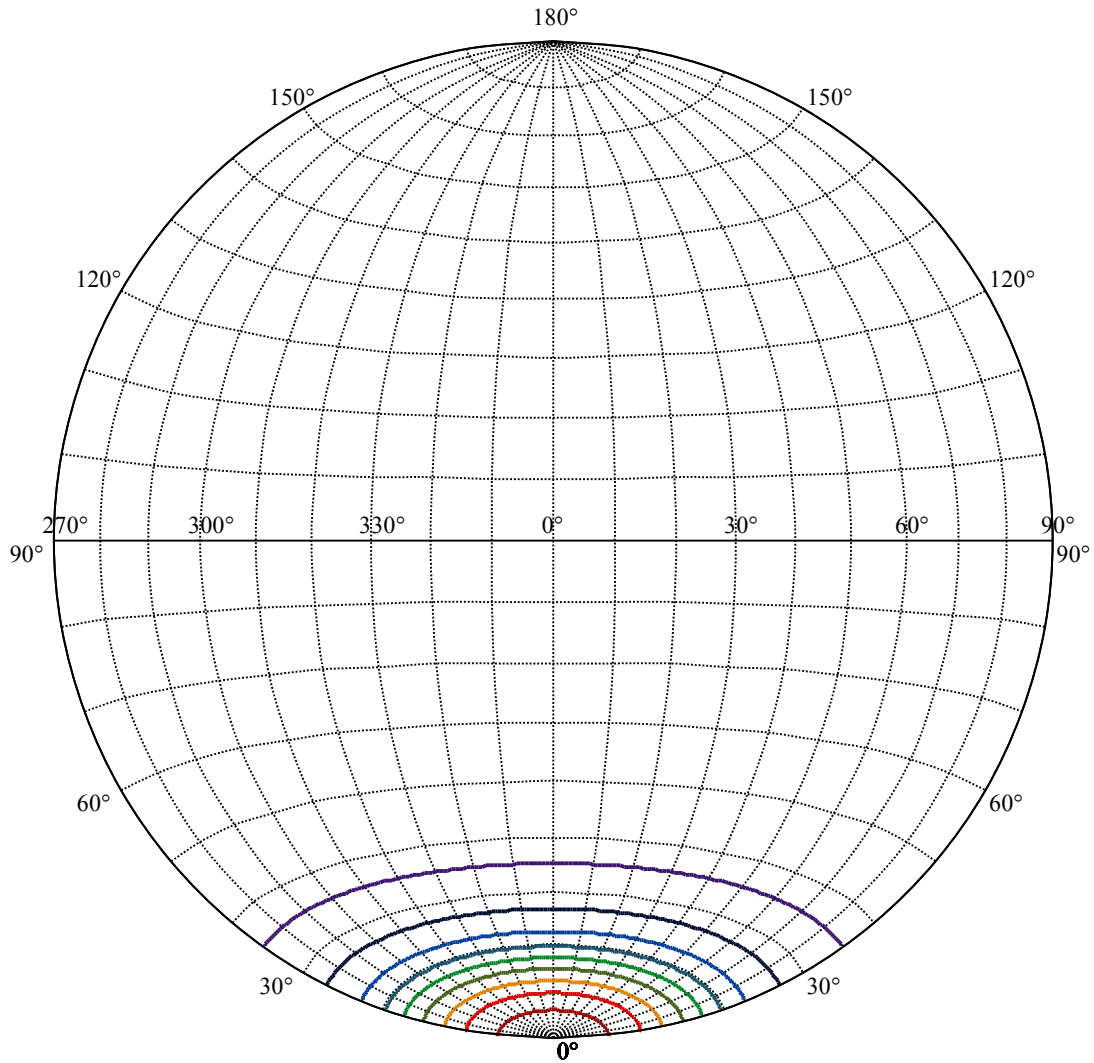
Beam Angle(50%Imax):C0/180Left:17.4 Right:17.4

:C90/270Left:17.4 Right:17.4





(10%Imax) 527.771	—
(20%Imax) 1055.54	—
(30%Imax) 1583.31	—
(40%Imax) 2111.08	—
(50%Imax) 2638.85	—
(60%Imax) 3166.62	—
(70%Imax) 3694.39	—
(80%Imax) 4222.17	—
(90%Imax) 4749.94	—



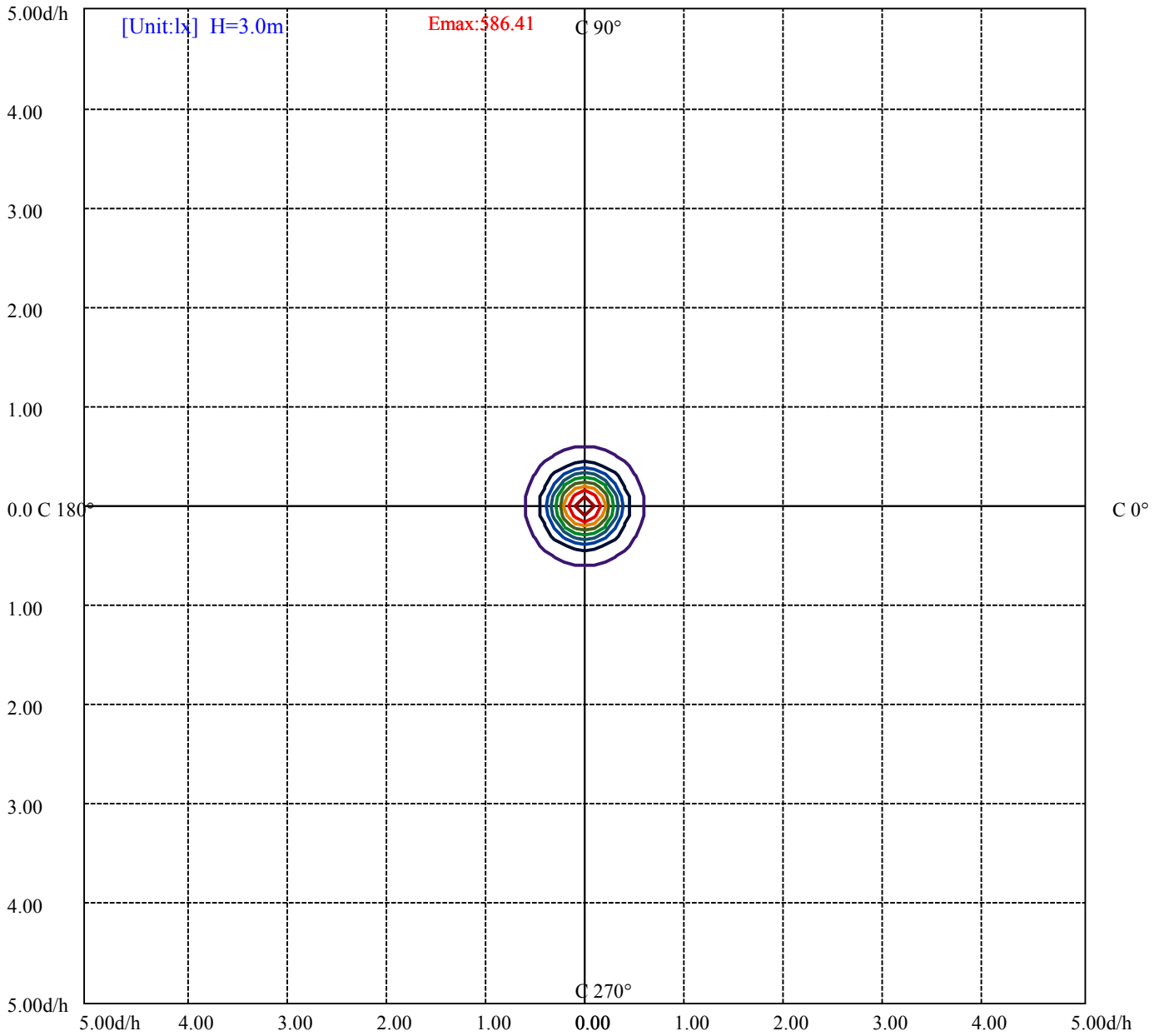
House

[Unit:cd]

Road

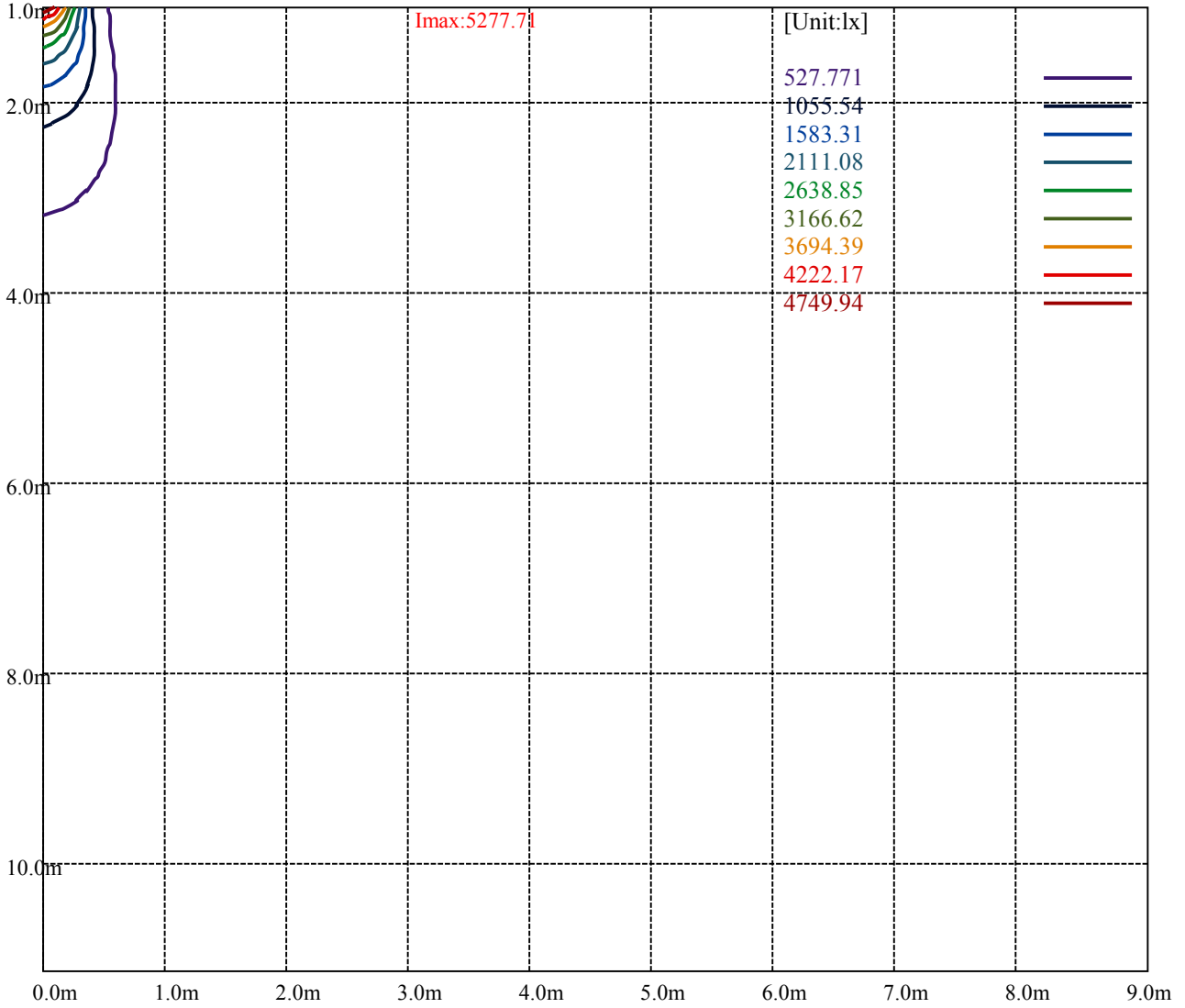
**Imax:5277.71**

(10%Imax) 527.771	—
(20%Imax) 1055.54	—
(30%Imax) 1583.31	—
(40%Imax) 2111.08	—
(50%Imax) 2638.85	—
(60%Imax) 3166.62	—
(70%Imax) 3694.39	—
(80%Imax) 4222.17	—
(90%Imax) 4749.94	—



(10%Emax) 58.64111	—
(20%Emax) 117.2822	—
(30%Emax) 175.9233	—
(40%Emax) 234.5645	—
(50%Emax) 293.2056	—
(60%Emax) 351.8467	—
(70%Emax) 410.4878	—
(80%Emax) 469.1289	—
(90%Emax) 527.77	—





Luminance Table

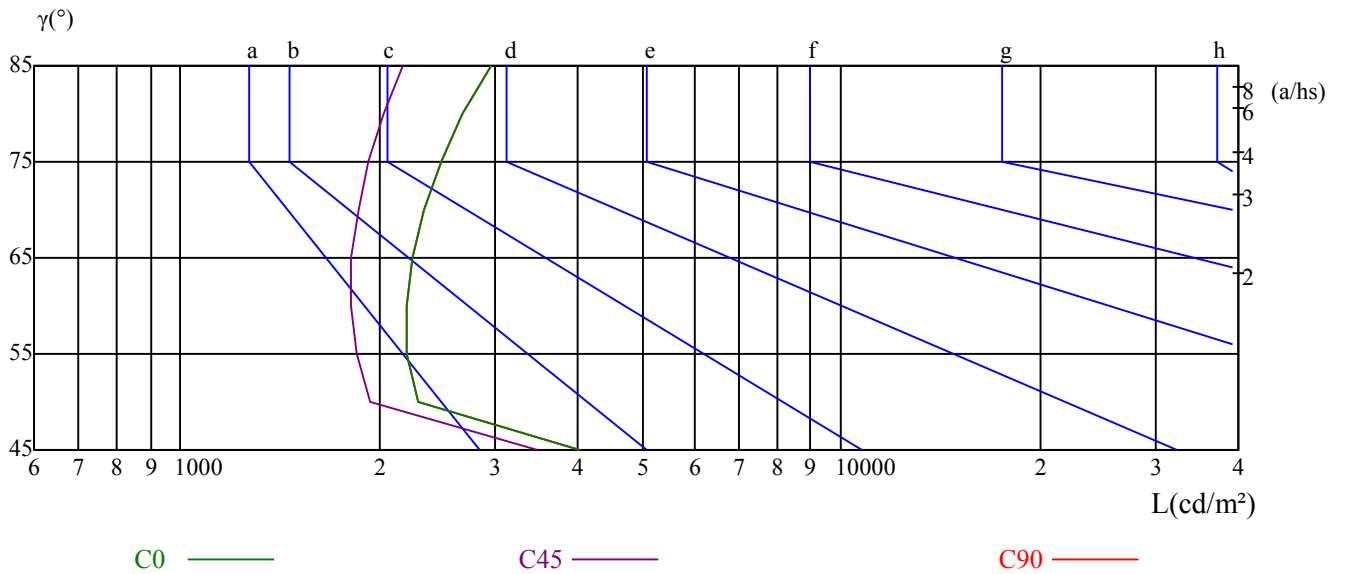
$\gamma$	45	50	55	60	65	70	75	80	85
C0	4027	2285	2206	2200	2246	2343	2483	2679	2951
C45	3472	1941	1845	1809	1815	1856	1924	2024	2164
C90	4027	2285	2206	2200	2246	2343	2483	2679	2951

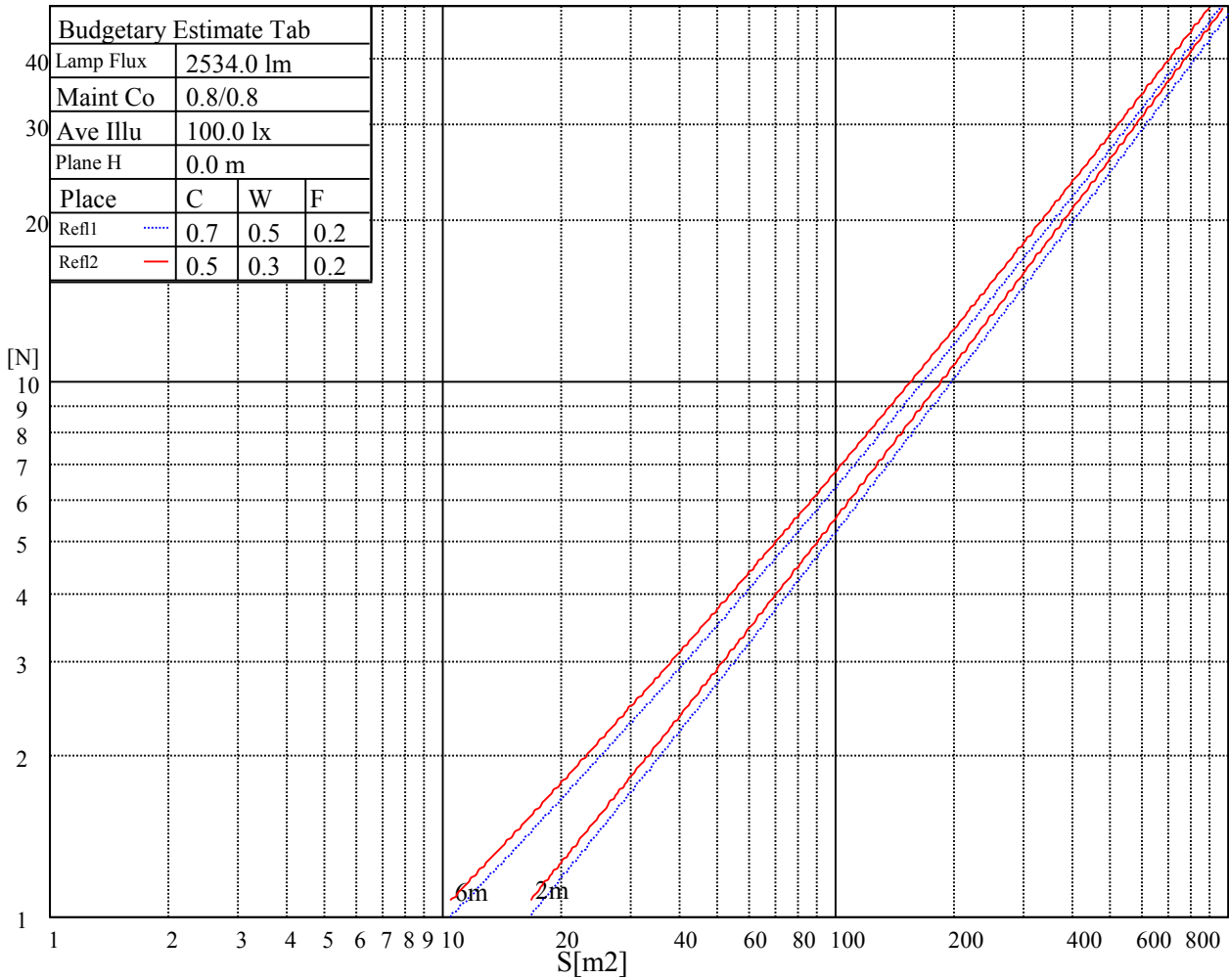
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5274	5274	5274	8308	8308	8308	24156	24156	24156

Glare Table

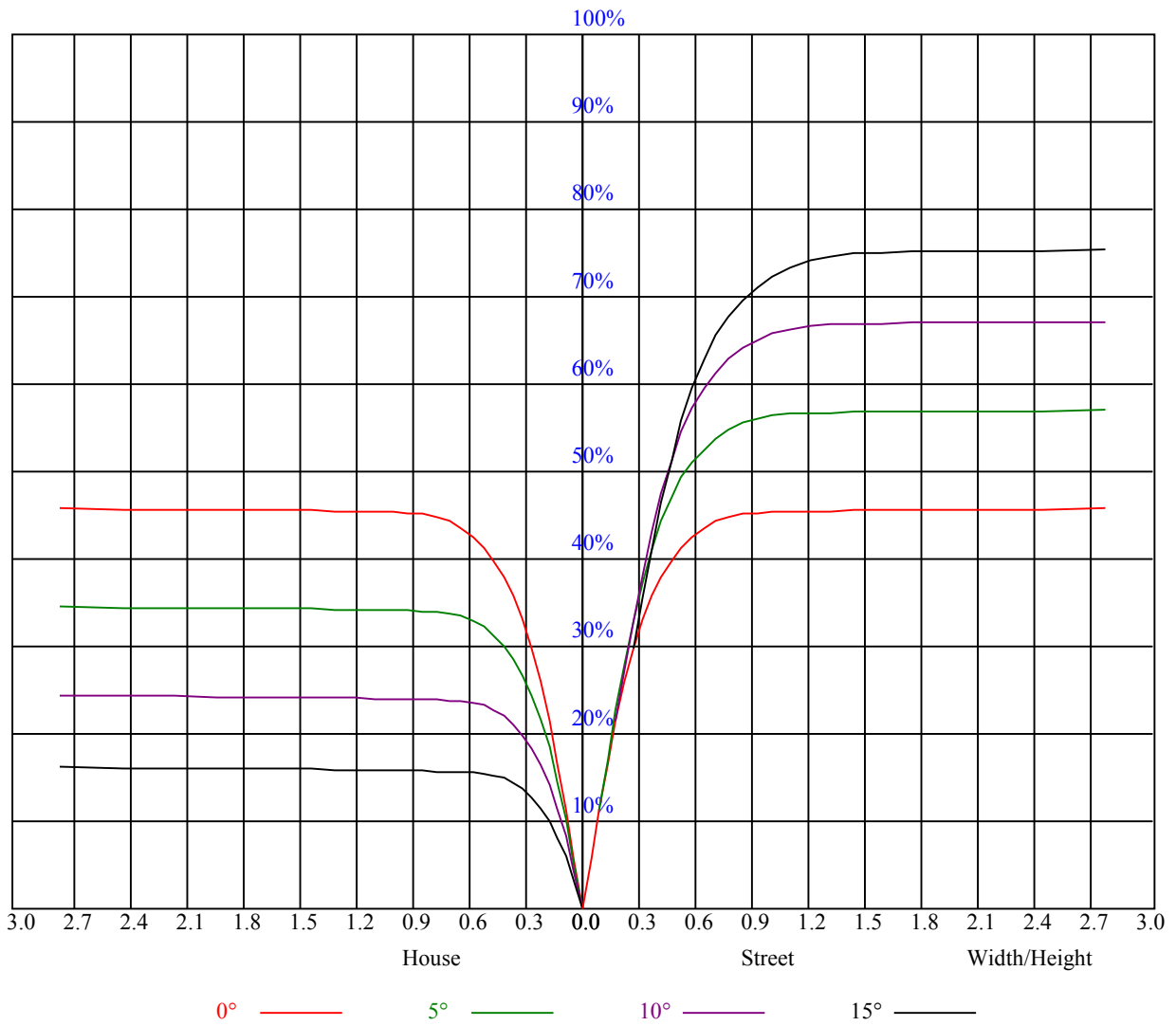
Glare	Quality	Service Values Illuminance(lx)							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.02	1.00	0.98	1.00	0.98	0.96	0.97	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.88	0.86
2	0.97	0.93	0.90	0.95	0.92	0.89	0.92	0.89	0.87	0.89	0.87	0.85	0.87	0.85	0.84	0.82
3	0.92	0.88	0.84	0.90	0.87	0.84	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.78
4	0.87	0.83	0.79	0.86	0.82	0.79	0.84	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.75
5	0.83	0.79	0.75	0.82	0.78	0.75	0.81	0.77	0.74	0.79	0.76	0.74	0.78	0.75	0.73	0.72
6	0.80	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.71	0.77	0.73	0.71	0.75	0.72	0.70	0.69
7	0.77	0.72	0.69	0.76	0.72	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.66
8	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.64
9	0.71	0.66	0.63	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.62
10	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.59



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	5293.67	4967.74	4260.81	3229.61	2044.79	1235.47	893.57	561.58	300.61
45.0	5281.01	4913.78	4225.03	3124.45	1994.14	1193.62	870.44	556.62	281.89
90.0	5263.39	4875.79	4096.20	2941.66	1777.22	1080.92	838.18	477.50	107.19
135.0	5272.75	4990.86	4381.39	3341.37	2098.20	1237.67	908.43	605.62	320.98
180.0	5293.67	4960.58	4234.39	3219.70	2011.21	1087.42	884.37	552.82	155.42
225.0	5281.01	4963.89	4242.10	3143.17	2066.27	1078.28	880.46	566.70	162.97
270.0	5263.39	5021.69	4376.98	3456.99	2272.73	1326.86	945.32	637.00	295.10
315.0	5272.75	4867.54	4171.62	3110.69	1947.34	1074.21	868.96	501.89	105.54
360.0	5293.67	4967.74	4260.81	3229.61	2044.79	1235.47	893.57	561.58	300.61

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	19.88	12.72	11.84	11.34	11.01	10.79	10.57	10.46	10.35
45.0	18.83	12.72	11.89	11.34	10.96	10.68	10.52	10.41	10.24
90.0	20.26	12.44	11.78	11.23	10.90	10.68	10.52	10.35	10.24
135.0	28.74	12.66	11.84	11.34	10.96	10.74	10.57	10.41	10.30
180.0	24.50	12.44	11.67	11.18	10.85	10.68	10.52	10.35	10.30
225.0	23.56	12.44	11.56	11.07	10.79	10.63	10.46	10.35	10.30
270.0	26.59	12.77	11.84	11.34	10.96	10.79	10.57	10.46	10.35
315.0	19.43	12.50	11.73	11.23	10.96	10.68	10.57	10.46	10.46
360.0	19.88	12.72	11.84	11.34	11.01	10.79	10.57	10.46	10.35

C/γ(°)	90.0
0.0	10.24
45.0	10.19
90.0	10.13
135.0	10.24
180.0	10.19
225.0	10.13
270.0	10.19
315.0	10.24
360.0	10.24