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## Nata

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LumCAT: 3-1547-A3  
Luminaire: 99.02.73.172+92.76.365.00  
Report No: NATA0100  
Test No: GC2018091218  
LampCAT: LUMINUS CXM-11-AC30  
Lamp flux(lm): 2496.0  
Number of Lamps: 1  
Length(mm): 84  
Phm Type: C

Voltage(V): 34.7000  
Current(A): 0.4900  
Power (W): 17.0030  
PF: 0.0000  
Ballast type: DC  
Width(mm): 84  
Height(mm): 0

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## Photometric Results

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Lumens(lm): 2240.05  
Efficiency(%): 89.75%  
Lumens(lm)/Power(W): 133.28  
Central intensity(cd): 4721.906  
Maximum intensity(cd): 4721.906  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=38.7  
                                  [C90/270]Total=38.7  
Field angle(10%Imax): [C0/180]Total=69.9  
                                  [C90/270]Total=69.9  
Maximum s/h(1/2): C0\_180=0.63 C90\_270=0.63  
Maximum s/h(1/4): C0\_180=0.62 C90\_270=0.62  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 90.79%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 97.510%

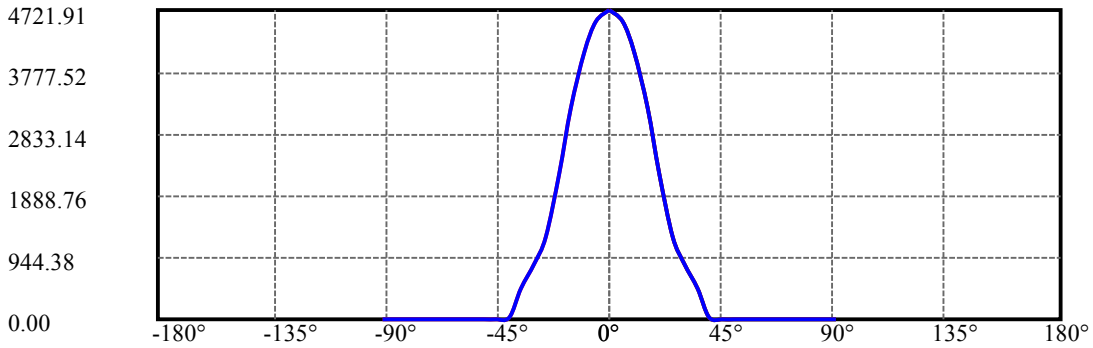
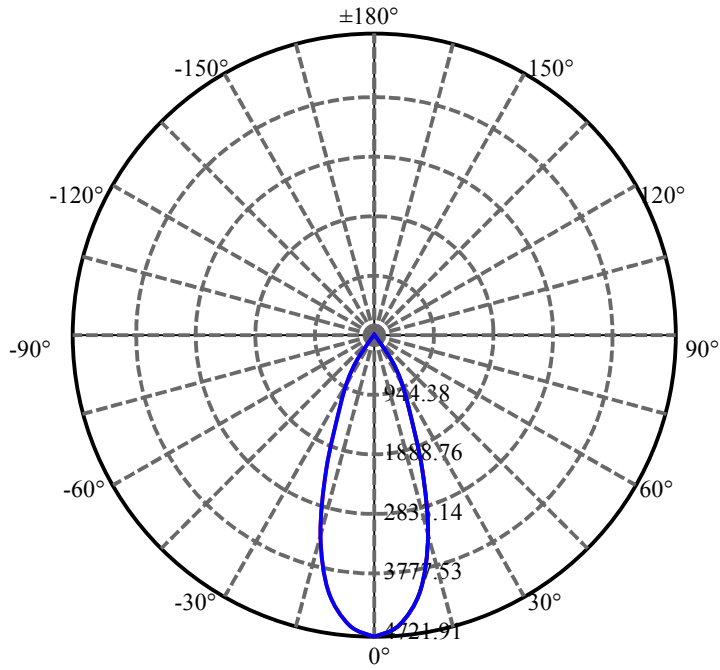
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4721.906	28.238	28.238	1.131%	1.261%
5.0	4555.969	217.654	245.892	8.720%	10.977%
10.0	4073.695	387.747	633.638	15.535%	28.287%
15.0	3227.133	457.828	1091.467	18.342%	48.725%
20.0	2232.703	418.574	1510.04	16.770%	67.411%
25.0	1247.667	289.026	1799.066	11.580%	80.314%
30.0	843.926	231.294	2030.36	9.267%	90.639%
35.0	470.011	147.771	2178.131	5.920%	97.236%
40.0	31.078	10.950	2189.081	.439%	97.725%
45.0	13.198	5.115	2194.196	.205%	97.953%
50.0	12.101	5.081	2199.277	.204%	98.180%
55.0	11.524	5.174	2204.451	.207%	98.411%
60.0	11.123	5.280	2209.732	.212%	98.647%
65.0	10.814	5.372	2215.104	.215%	98.886%
70.0	10.603	5.461	2220.565	.219%	99.130%
75.0	10.434	5.525	2226.09	.221%	99.377%
80.0	10.329	5.576	2231.666	.223%	99.626%
85.0	10.252	5.598	2237.264	.224%	99.876%
90.0	10.167	2.787	2240.05	.112%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2030.36	81.34%	90.64%
0-40	2189.08	87.70%	97.72%
0-60	2209.73	88.53%	98.65%
0-90	2237.26	89.63%	99.88%
0-120	2237.26	89.63%	99.88%
0-180	2240.05	89.75%	100.00%
60-90	32.81	1.31%	1.46%
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%
0-24.88	1792.04	71.80%	80.00%

ZONAL LUMEN SUMMARY

0-10	633.64
10-20	876.40
20-30	520.32
30-40	158.72
40-50	10.20
50-60	10.45
60-70	10.83
70-80	11.10
80-90	5.60
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



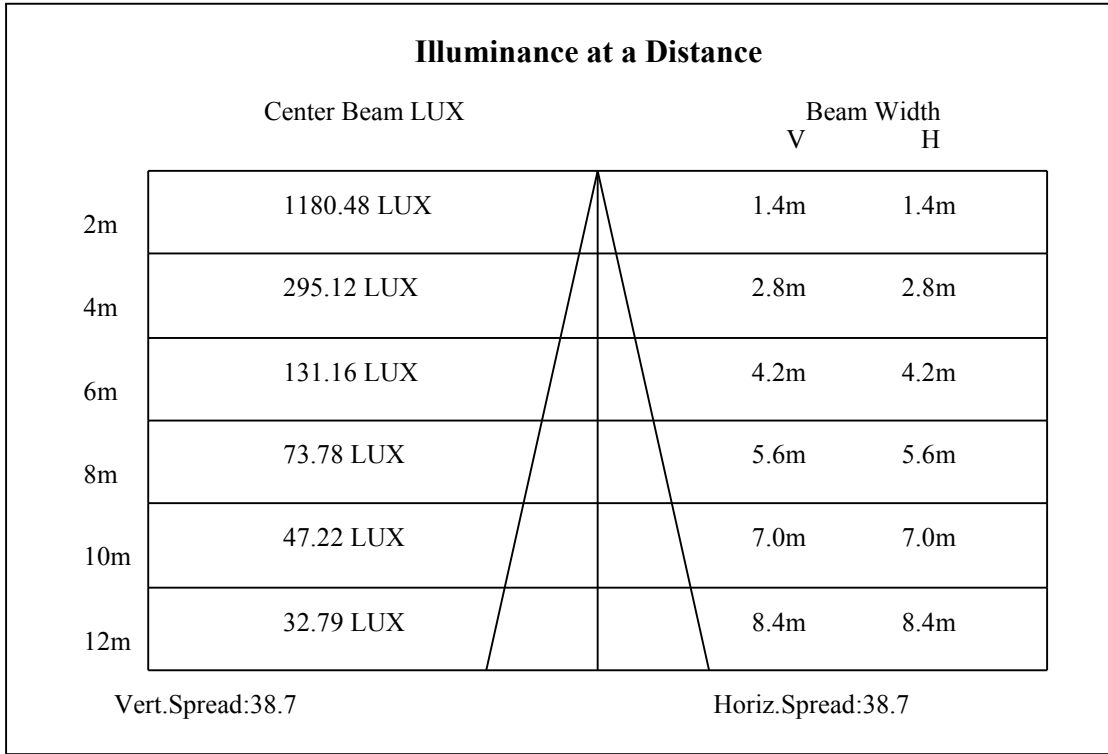
C0(Max): —————

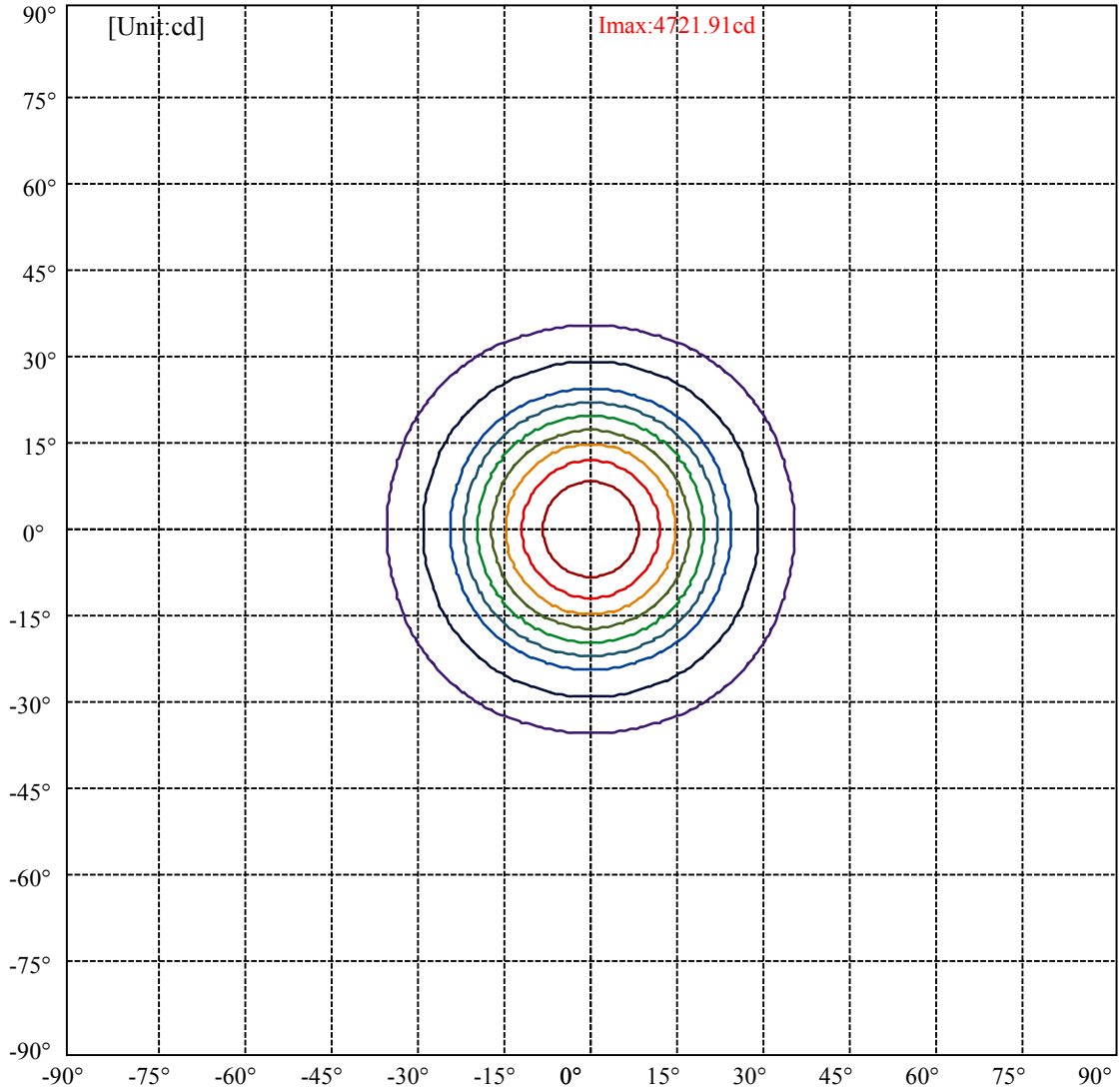
C0/C180: —————

C90/C270: —————

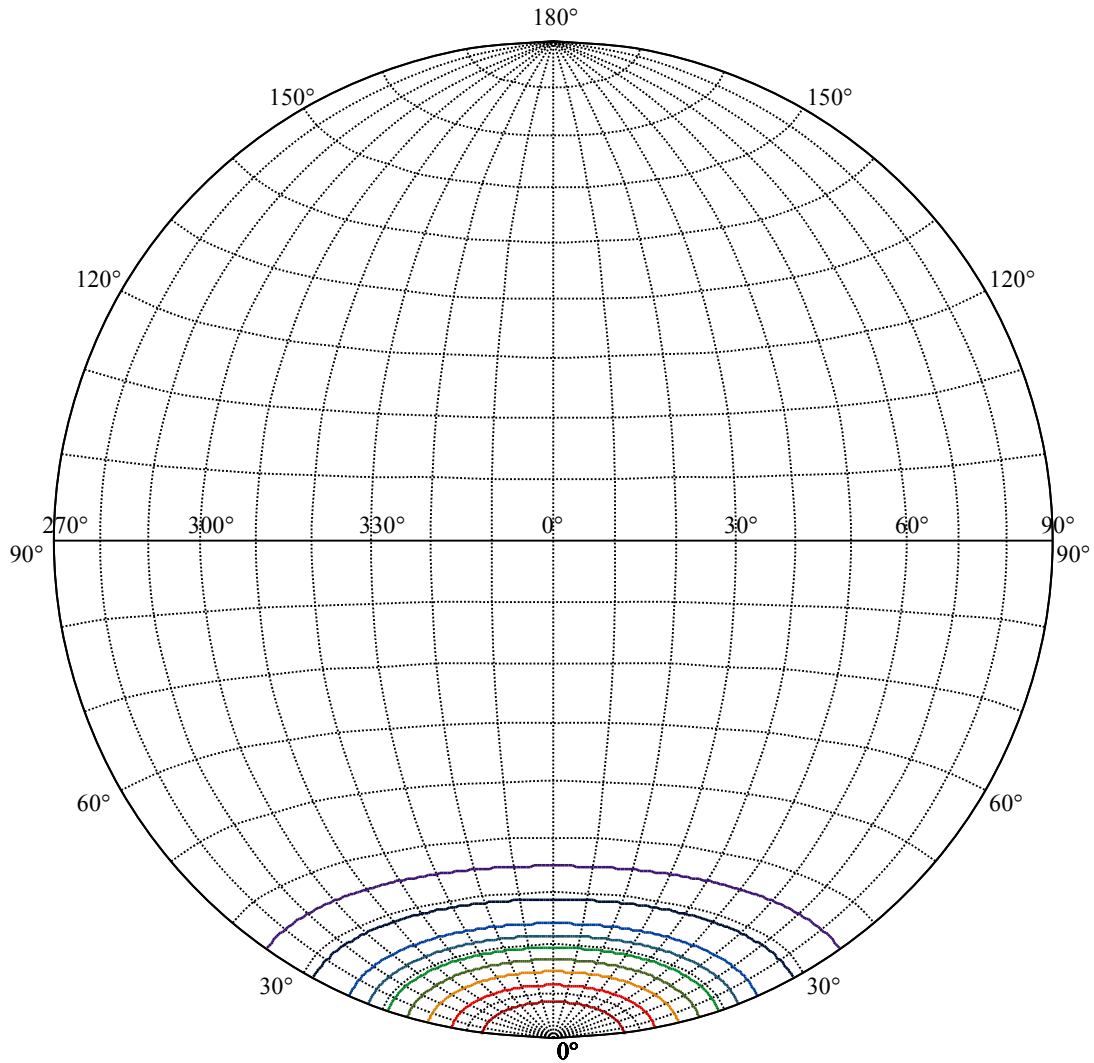
Field angle(10%Imax):C0/180Left:35.0 Right:35.0  
:C90/270Left:35.0 Right:35.0

Beam Angle(50%Imax):C0/180Left:19.4 Right:19.4  
:C90/270Left:19.4 Right:19.4





(10%Imax) 472.191	—
(20%Imax) 944.381	—
(30%Imax) 1416.57	—
(40%Imax) 1888.76	—
(50%Imax) 2360.95	—
(60%Imax) 2833.14	—
(70%Imax) 3305.33	—
(80%Imax) 3777.52	—
(90%Imax) 4249.72	—



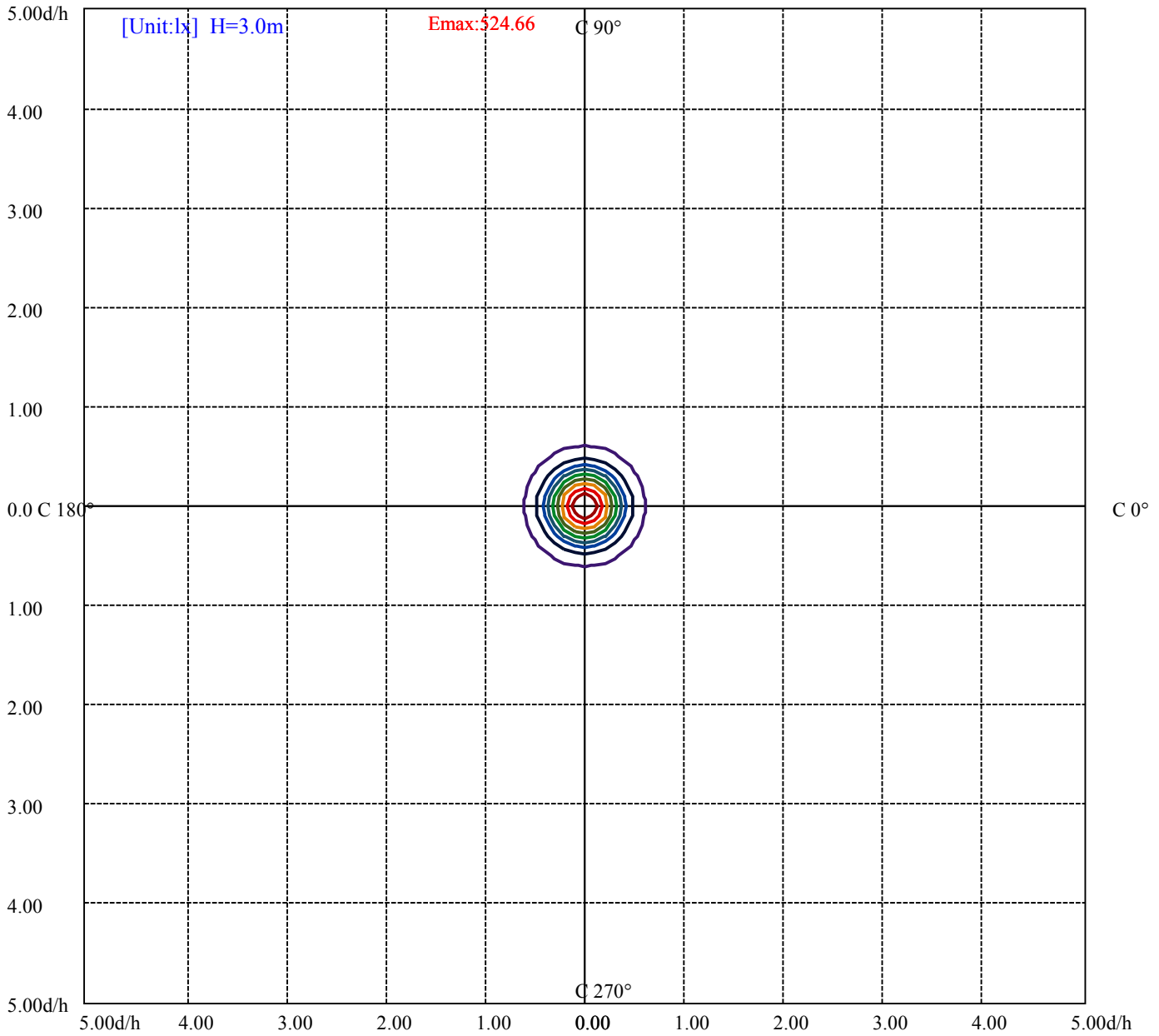
House

[Unit:cd]

Road

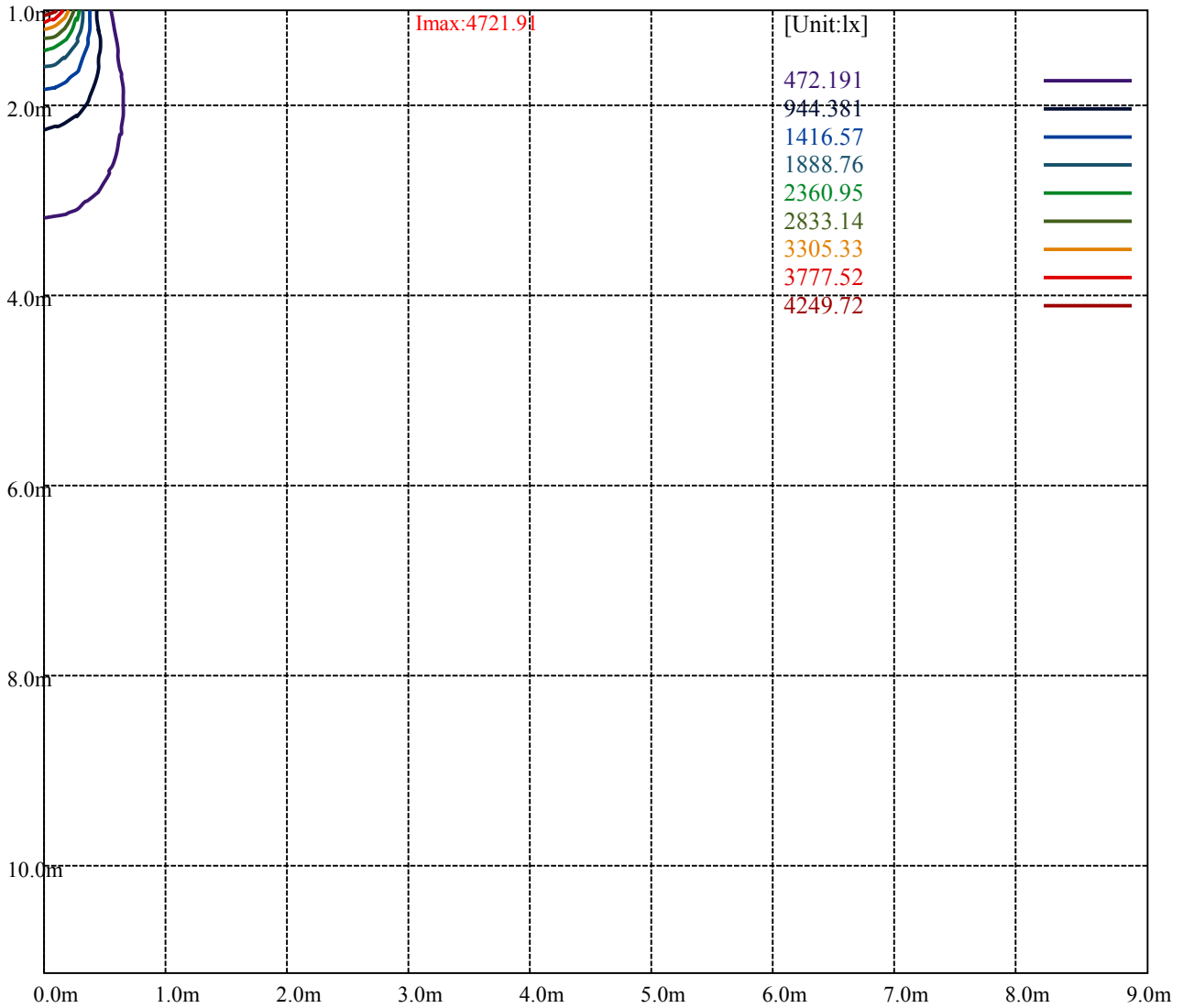
Imax:4721.91

(10%Imax) 472.191	—
(20%Imax) 944.381	—
(30%Imax) 1416.57	—
(40%Imax) 1888.76	—
(50%Imax) 2360.95	—
(60%Imax) 2833.14	—
(70%Imax) 3305.33	—
(80%Imax) 3777.52	—
(90%Imax) 4249.72	—



- (10%Emax) 52.46556
- (20%Emax) 104.9311
- (30%Emax) 157.3967
- (40%Emax) 209.8622
- (50%Emax) 262.3278
- (60%Emax) 314.7933
- (70%Emax) 367.2589
- (80%Emax) 419.7245
- (90%Emax) 472.19





Luminance Table

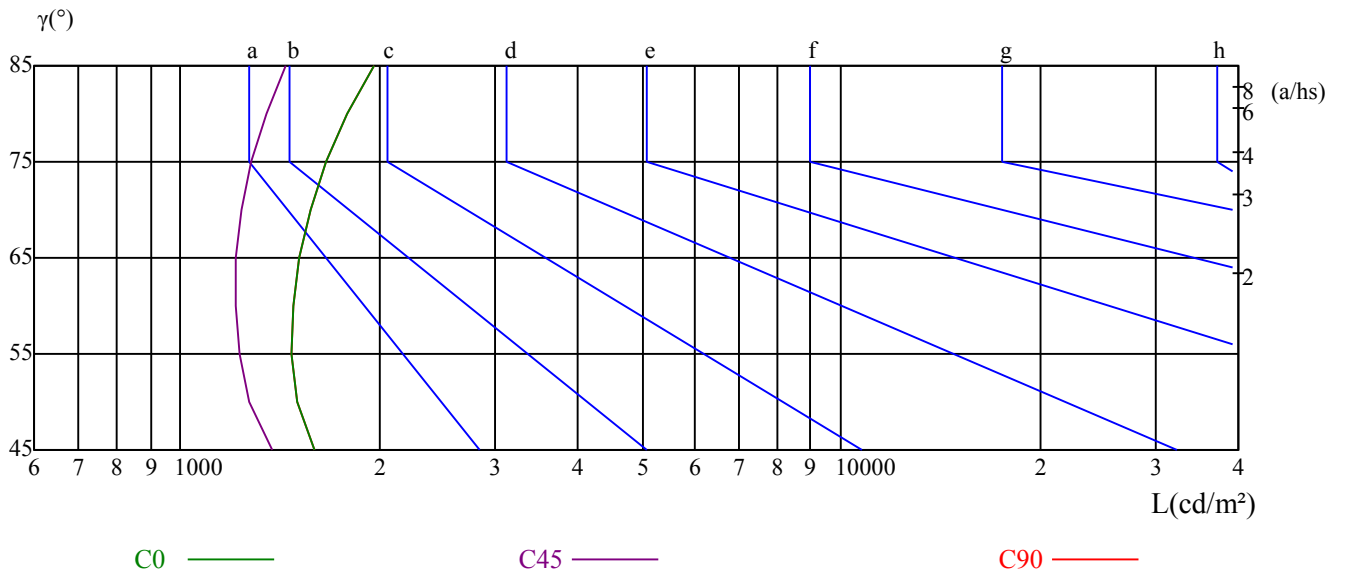
$\gamma$	45	50	55	60	65	70	75	80	85
C0	1599	1499	1471	1477	1508	1570	1659	1789	1965
C45	1373	1268	1226	1211	1215	1240	1282	1348	1439
C90	1599	1499	1471	1477	1508	1570	1659	1789	1965

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3626	3626	3626	5714	5714	5714	16670	16670	16670

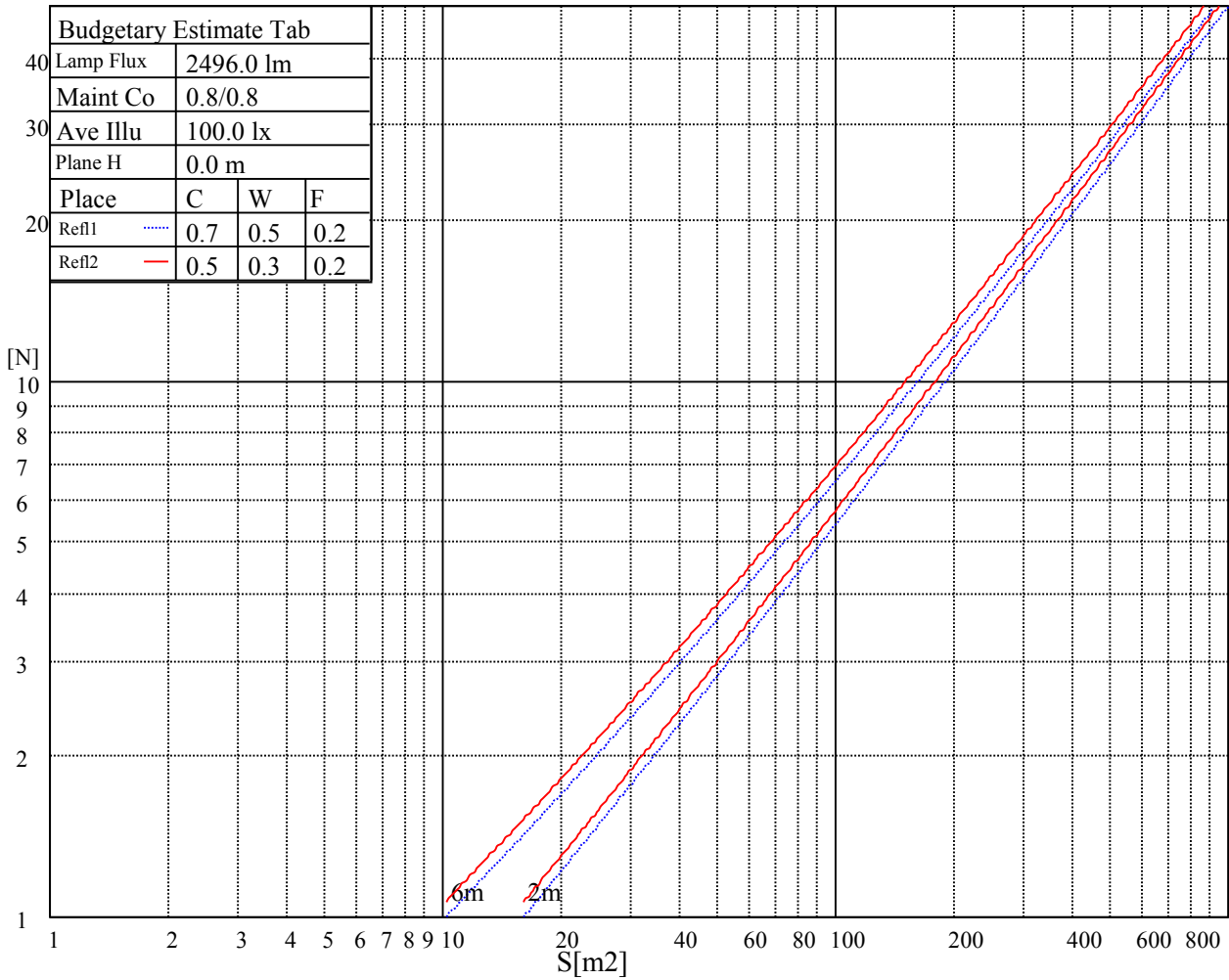
Glare Table

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

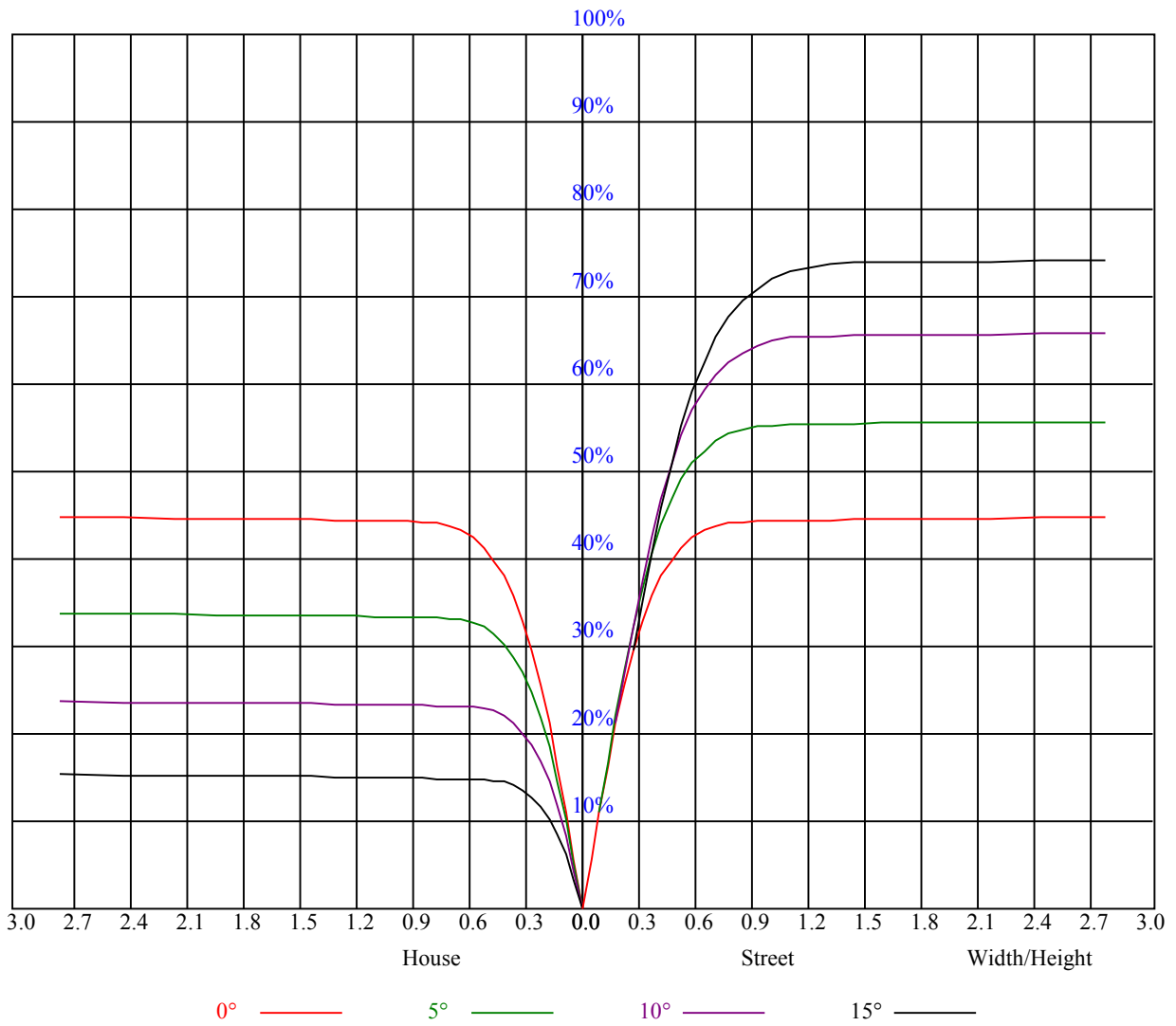
Luminance Limiting Curve



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	0.85	0.30	1.16	1.48	-0.07	0.85	0.30	1.16	1.48
	3H	2.20	3.00	2.58	3.34	3.71	2.21	3.01	2.59	3.35	3.72
	4H	3.43	4.18	3.84	4.54	4.93	3.45	4.20	3.86	4.55	4.94
	6H	4.74	5.42	5.16	5.80	6.19	4.76	5.44	5.18	5.82	6.21
	8H	5.39	6.03	5.82	6.42	6.83	5.41	6.05	5.85	6.44	6.85
	12H	6.39	7.00	6.82	7.38	7.82	6.42	7.03	6.85	7.41	7.85
4H	2H	0.42	1.17	0.83	1.52	1.91	0.42	1.17	0.83	1.52	1.91
	3H	2.97	3.58	3.39	4.00	4.40	2.98	3.60	3.40	4.01	4.41
	4H	4.38	4.93	4.82	5.36	5.81	4.40	4.95	4.84	5.37	5.82
	6H	5.78	6.25	6.26	6.70	7.18	5.81	6.27	6.28	6.73	7.20
	8H	6.55	6.98	7.03	7.44	7.91	6.57	7.01	7.05	7.46	7.93
8H	12H	7.55	7.92	8.04	8.41	8.89	7.58	7.95	8.07	8.44	8.92
	4H	4.82	5.25	5.29	5.70	6.18	4.83	5.27	5.31	5.72	6.19
	6H	6.46	6.80	6.97	7.30	7.79	6.47	6.82	6.98	7.32	7.81
	8H	7.37	7.68	7.91	8.20	8.70	7.39	7.70	7.93	8.22	8.72
12H	12H	8.51	8.77	9.03	9.27	9.85	8.53	8.79	9.05	9.29	9.87
	4H	4.91	5.28	5.40	5.77	6.25	4.92	5.29	5.41	5.78	6.26
	6H	6.83	6.93	7.16	7.40	7.95	6.85	6.95	7.18	7.42	7.97
	8H	7.64	7.90	8.16	8.40	8.98	7.66	7.92	8.18	8.42	9.00
Variation with the observer position at spacings:											
S = 1.0H	5.7/-7.5					5.7/-7.5					
S = 1.5H	8.1/-5.9					8.1/-5.9					
S = 2.0H	9.7/-4.6					9.7/-4.6					
Standard tables:	BK2					BK2					
Uncorrected UGR	-3.6					-3.6					



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	1.08	1.08	1.08	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.00	0.98	0.96	0.98	0.96	0.94	0.95	0.93	0.91	0.91	0.90	0.89	0.88	0.87	0.86	0.84
2	0.95	0.91	0.89	0.93	0.90	0.88	0.90	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.82	0.81
3	0.90	0.86	0.83	0.89	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.82	0.80	0.79	0.77
4	0.86	0.82	0.78	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.74
5	0.82	0.78	0.74	0.81	0.77	0.74	0.80	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
6	0.79	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.74	0.72	0.69	0.68
7	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
8	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.63
9	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.68	0.65	0.62	0.61
10	0.68	0.64	0.61	0.67	0.63	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.66	0.62	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	4719.94	4660.88	4199.63	3278.25	2277.56	1329.19	838.13	471.38	30.38
45.0	4694.63	4604.06	4178.81	3357.56	2364.75	1415.25	870.19	563.63	38.36
90.0	4713.75	4447.13	3922.31	3062.25	2058.19	1111.22	809.21	365.74	24.58
135.0	4759.31	4449.94	4016.81	3209.06	2248.88	1376.44	866.81	496.69	37.69
180.0	4719.94	4454.44	3963.94	3180.94	2227.50	1092.99	843.58	471.09	26.33
225.0	4694.63	4485.38	3943.13	3013.88	2105.44	1104.98	800.83	389.31	24.75
270.0	4713.75	4659.19	4207.50	3421.69	2395.13	1436.63	893.81	573.19	37.97
315.0	4759.31	4686.75	4157.44	3293.44	2184.19	1114.65	828.84	429.08	28.58
360.0	4719.94	4660.88	4199.63	3278.25	2277.56	1329.19	838.13	471.38	30.38
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	13.33	12.09	11.53	11.14	10.80	10.63	10.46	10.35	10.35
45.0	13.22	12.09	11.53	11.08	10.74	10.52	10.35	10.24	10.18
90.0	12.88	12.04	11.48	11.08	10.80	10.58	10.41	10.29	10.24
135.0	13.28	12.15	11.59	11.19	10.86	10.63	10.52	10.41	10.29
180.0	12.99	12.09	11.53	11.19	10.86	10.69	10.46	10.41	10.29
225.0	12.94	11.93	11.42	10.97	10.69	10.52	10.35	10.24	10.18
270.0	13.73	12.32	11.64	11.19	10.91	10.63	10.46	10.35	10.24
315.0	13.22	12.09	11.48	11.14	10.86	10.63	10.46	10.35	10.24
360.0	13.33	12.09	11.53	11.14	10.80	10.63	10.46	10.35	10.35
C/γ(°)	90.0								
0.0	10.24								
45.0	10.07								
90.0	10.18								
135.0	10.24								
180.0	10.24								
225.0	10.07								
270.0	10.13								
315.0	10.18								
360.0	10.24								