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NATA

LumCAT: 3-1547-A3
Luminaire: 99.02.73.172+92.76.365.00
Report No: NATA0100
Test No: GC2019011513
LampCAT: LUMINUS CLM-14-AC30
Lamp flux(lm): 3533.0
Number of Lamps: 1
Length(mm): 84
Phm Type: C

Voltage(V): 35.1000
Current(A): 0.7000
Power (W): 24.5700
PF: 0.0000
Ballast type: DC
Width(mm): 84
Height(mm): 0

Photometric Results

Lumens(lm): 3219.87
Efficiency(%): 91.14%
Lumens(lm)/Power(W): 132.41
Central intensity(cd): 6113.460
Maximum intensity(cd): 6120.070
Angle of maximum intensity: C=0.0 γ =5.0
Beam Angle(50%Imax): [C0/180]Total=40.9
 [C90/270]Total=40.9
Field angle(10%Imax): [C0/180]Total=70.9
 [C90/270]Total=70.9
Maximum s/h(1/2): C0_180=0.67 C90_270=0.67
Maximum s/h(1/4): C0_180=0.65 C90_270=0.65
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.08%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.732%

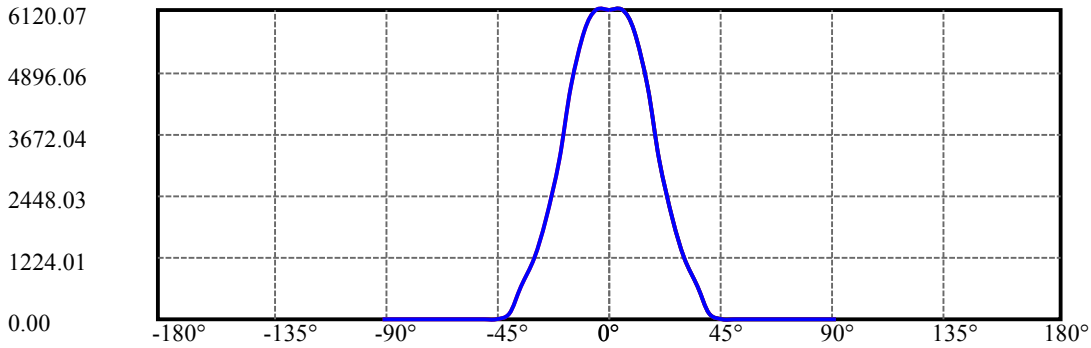
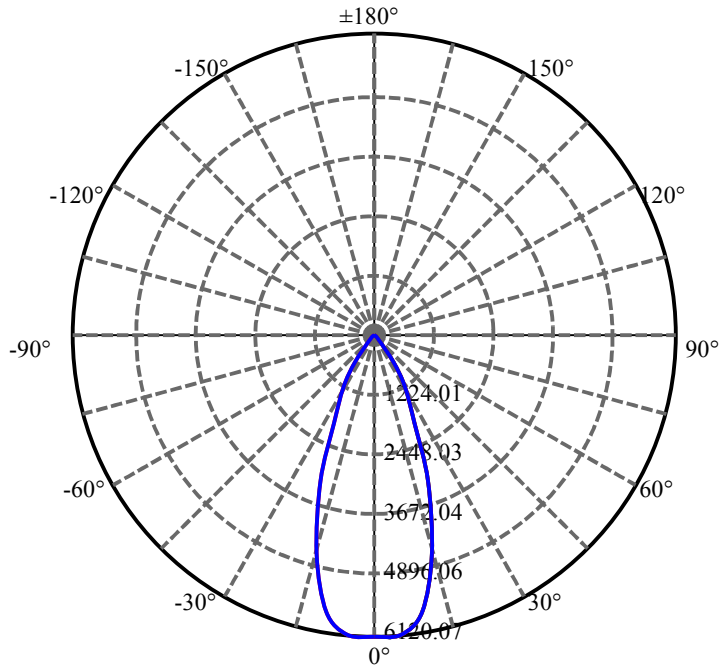
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6113.461	36.560	36.56	1.035%	1.135%
5.0	6120.070	292.376	328.936	8.276%	10.216%
10.0	5698.266	542.378	871.314	15.352%	27.061%
15.0	4587.398	650.807	1522.121	18.421%	47.273%
20.0	3163.430	593.061	2115.182	16.786%	65.692%
25.0	1961.789	454.454	2569.636	12.863%	79.806%
30.0	1220.808	334.585	2904.221	9.470%	90.197%
35.0	662.027	208.141	3112.362	5.891%	96.661%
40.0	110.398	38.897	3151.259	1.101%	97.869%
45.0	18.499	7.170	3158.429	.203%	98.092%
50.0	16.657	6.994	3165.423	.198%	98.309%
55.0	15.645	7.025	3172.448	.199%	98.527%
60.0	14.984	7.113	3179.56	.201%	98.748%
65.0	14.498	7.203	3186.763	.204%	98.972%
70.0	14.140	7.283	3194.046	.206%	99.198%
75.0	13.887	7.352	3201.399	.208%	99.426%
80.0	13.697	7.394	3208.792	.209%	99.656%
85.0	13.542	7.395	3216.187	.209%	99.886%
90.0	13.423	3.679	3219.866	.104%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2904.22	82.20%	90.20%
0-40	3151.26	89.19%	97.87%
0-60	3179.56	90.00%	98.75%
0-90	3216.19	91.03%	99.89%
0-120	3216.19	91.03%	99.89%
0-180	3219.87	91.14%	100.00%
60-90	43.74	1.24%	1.36%
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%
0-25.09	2575.89	72.91%	80.00%

ZONAL LUMEN SUMMARY

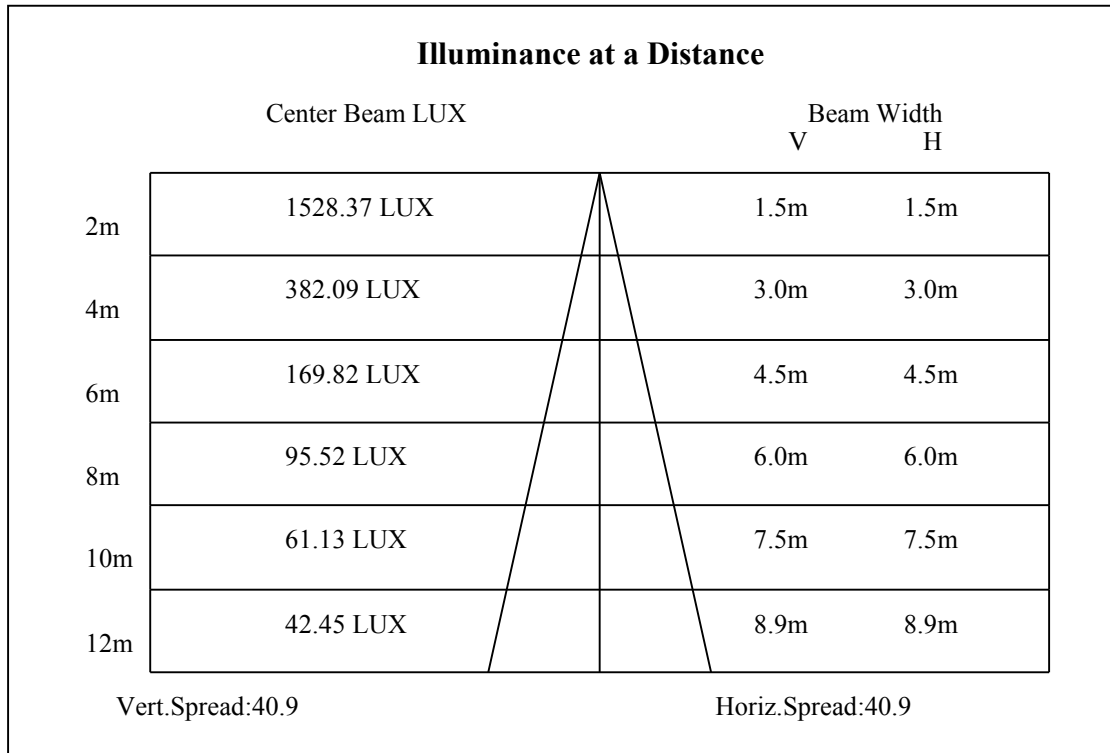
0-10	871.31
10-20	1243.87
20-30	789.04
30-40	247.04
40-50	14.16
50-60	14.14
60-70	14.49
70-80	14.75
80-90	7.39
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

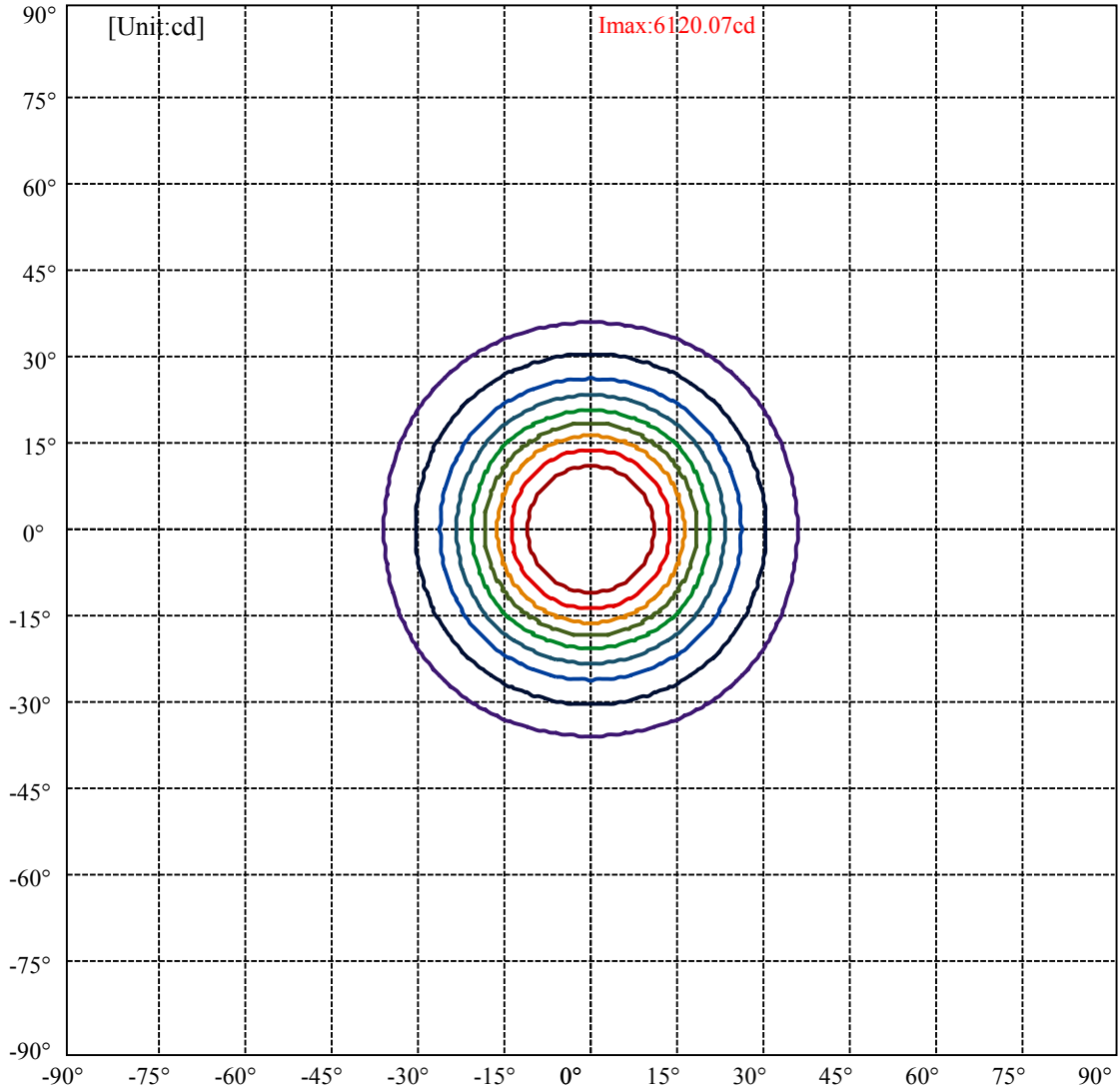


C0(Max): —————
C0/C180: —————
C90/C270: —————

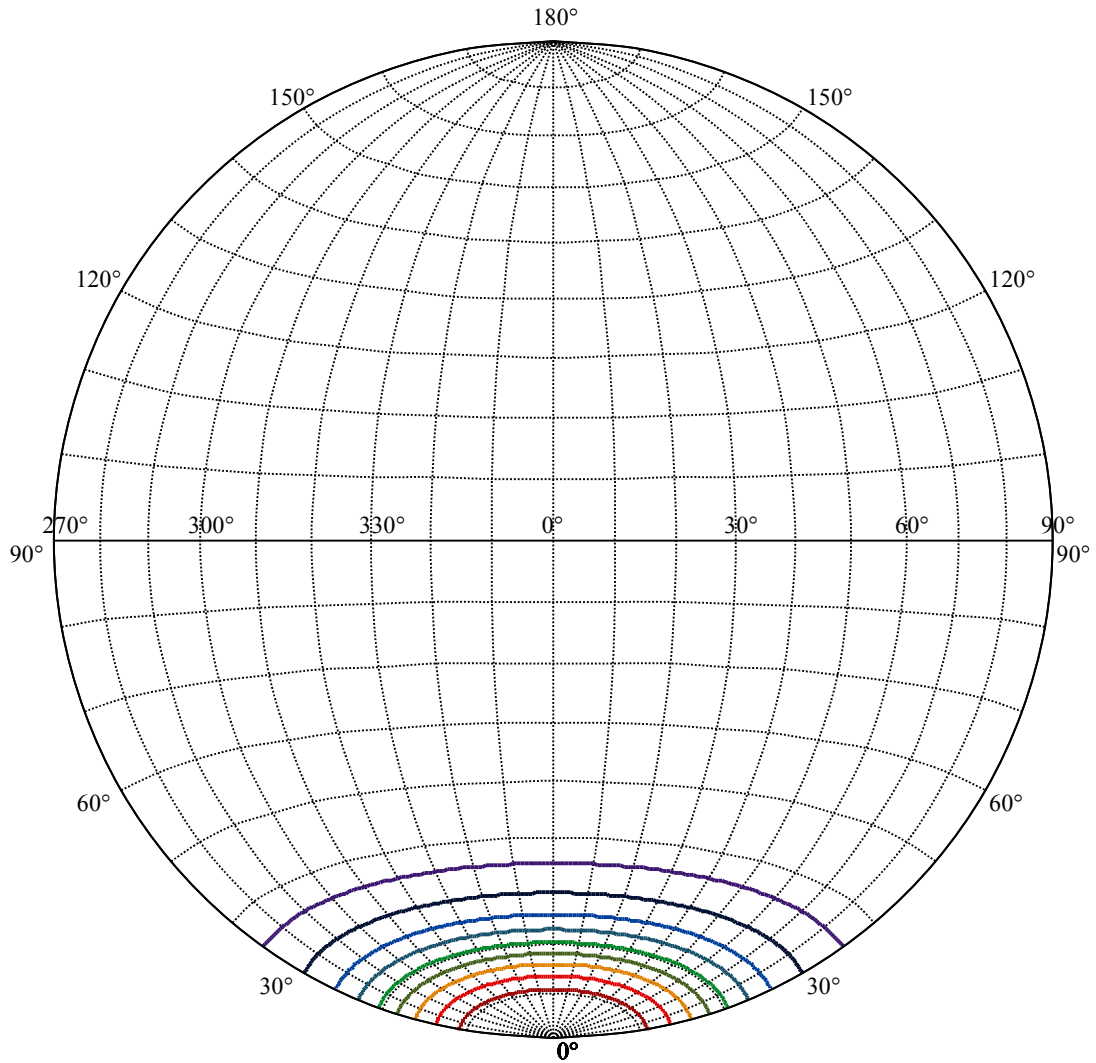
Field angle(10%Imax):C0/180Left:40.5 Right:30.5
:C90/270Left:40.5 Right:30.5

Beam Angle(50%Imax):C0/180Left:25.4 Right:15.4
:C90/270Left:25.4 Right:15.4





(10%Imax) 612.007	—
(20%Imax) 1224.01	—
(30%Imax) 1836.02	—
(40%Imax) 2448.03	—
(50%Imax) 3060.04	—
(60%Imax) 3672.04	—
(70%Imax) 4284.05	—
(80%Imax) 4896.06	—
(90%Imax) 5508.06	—



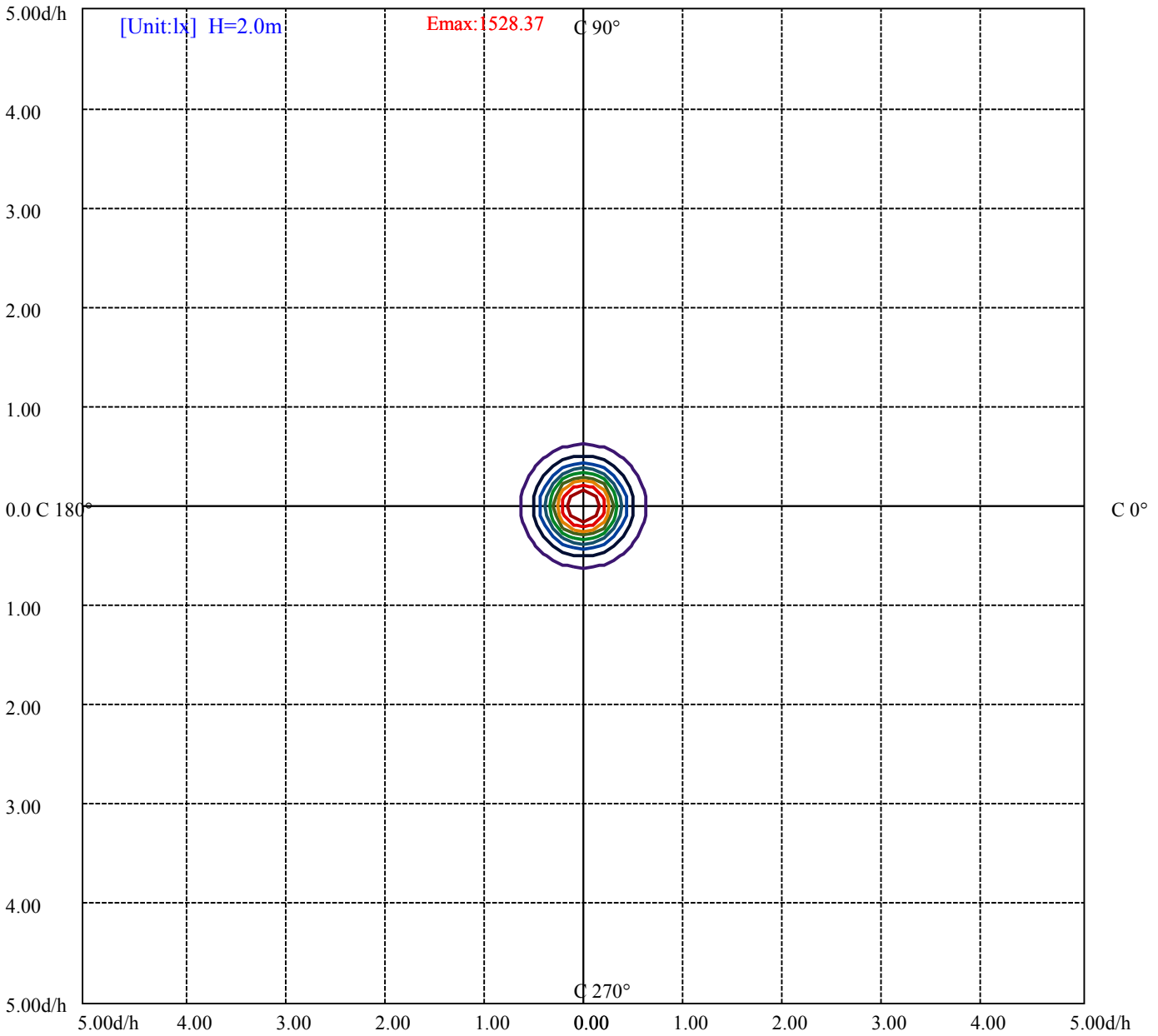
House

[Unit:cd]

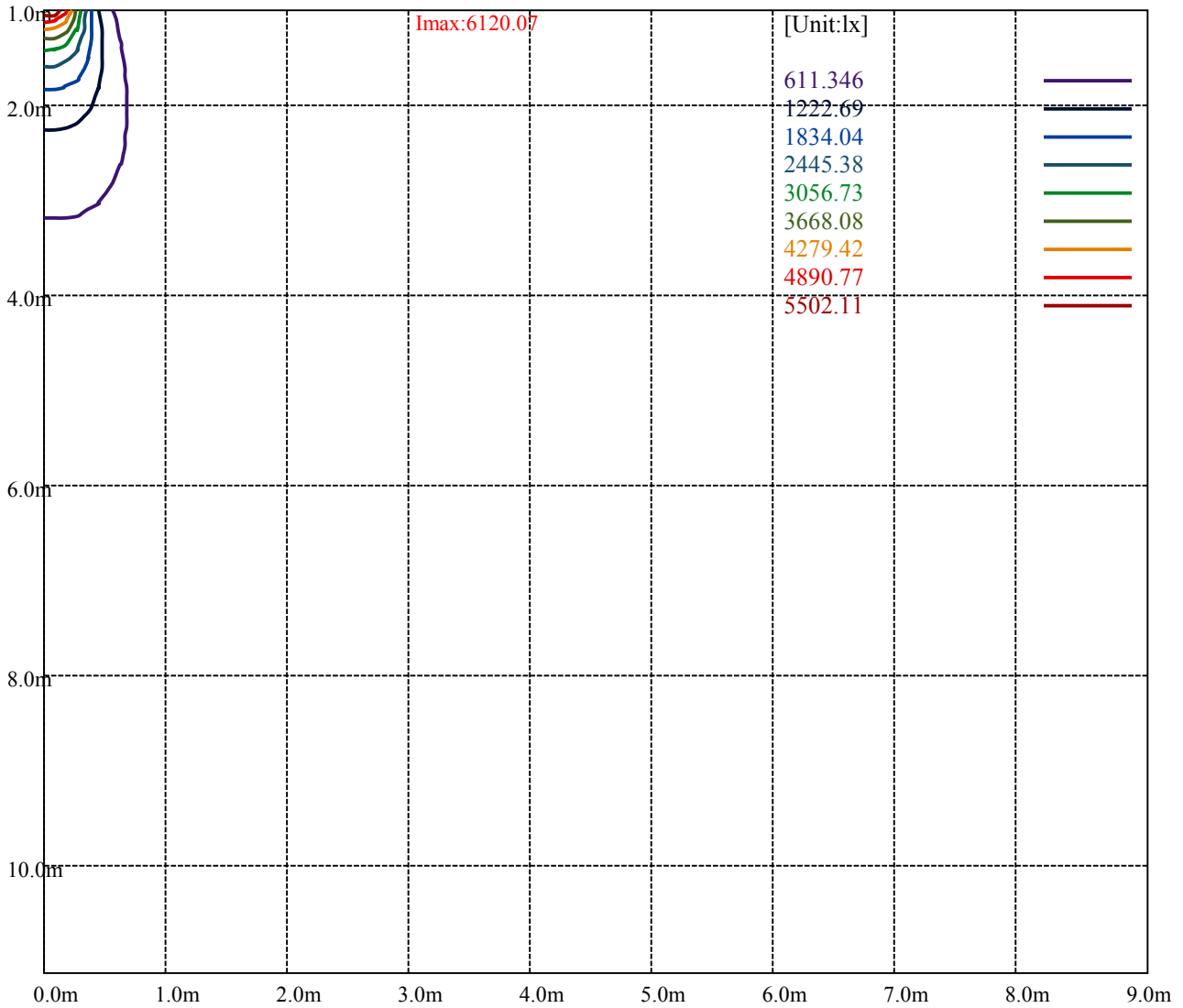
Road

Imax:6120.07

(10%Imax) 612.007	—
(20%Imax) 1224.01	—
(30%Imax) 1836.02	—
(40%Imax) 2448.03	—
(50%Imax) 3060.04	—
(60%Imax) 3672.04	—
(70%Imax) 4284.05	—
(80%Imax) 4896.06	—
(90%Imax) 5508.06	—



- (10%Emax) 152.8365
- (20%Emax) 305.6725
- (30%Emax) 458.51
- (40%Emax) 611.345
- (50%Emax) 764.1825
- (60%Emax) 917.02
- (70%Emax) 1069.855
- (80%Emax) 1222.693
- (90%Emax) 1375.527



Luminance Table

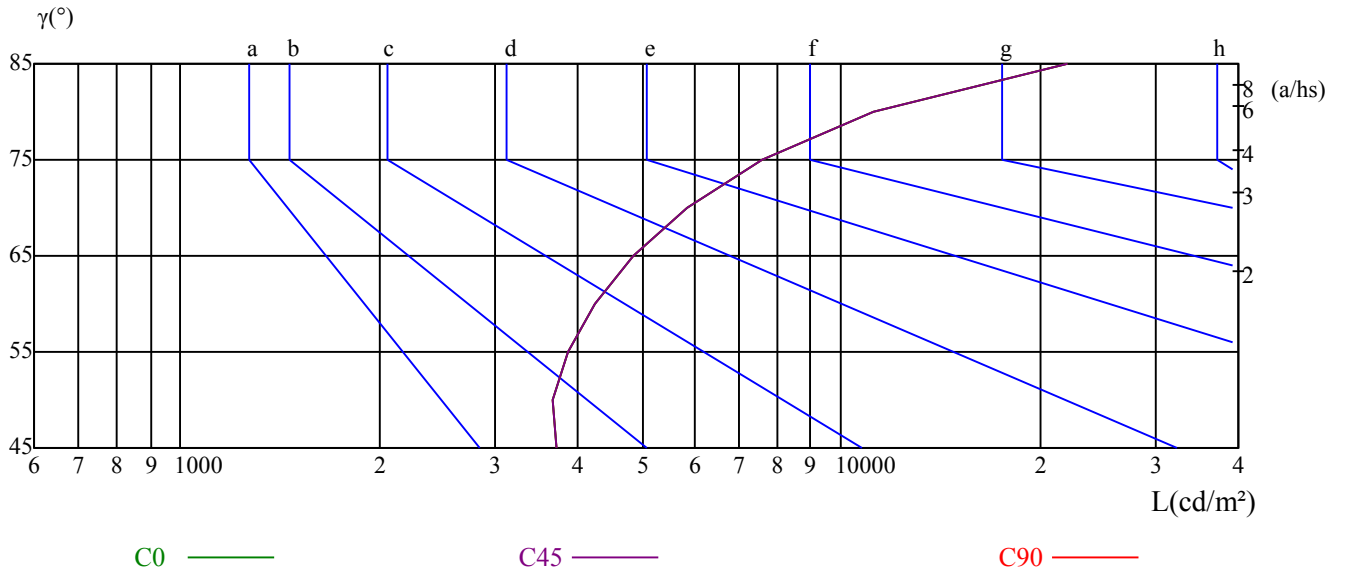
γ	45	50	55	60	65	70	75	80	85
C0	3708	3673	3866	4247	4862	5859	7604	11179	22021
C45	3708	3673	3866	4247	4862	5859	7604	11179	22021
C90	3708	3673	3866	4247	4862	5859	7604	11179	22021

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4862	4862	4862	7604	7604	7604	22021	22021	22021

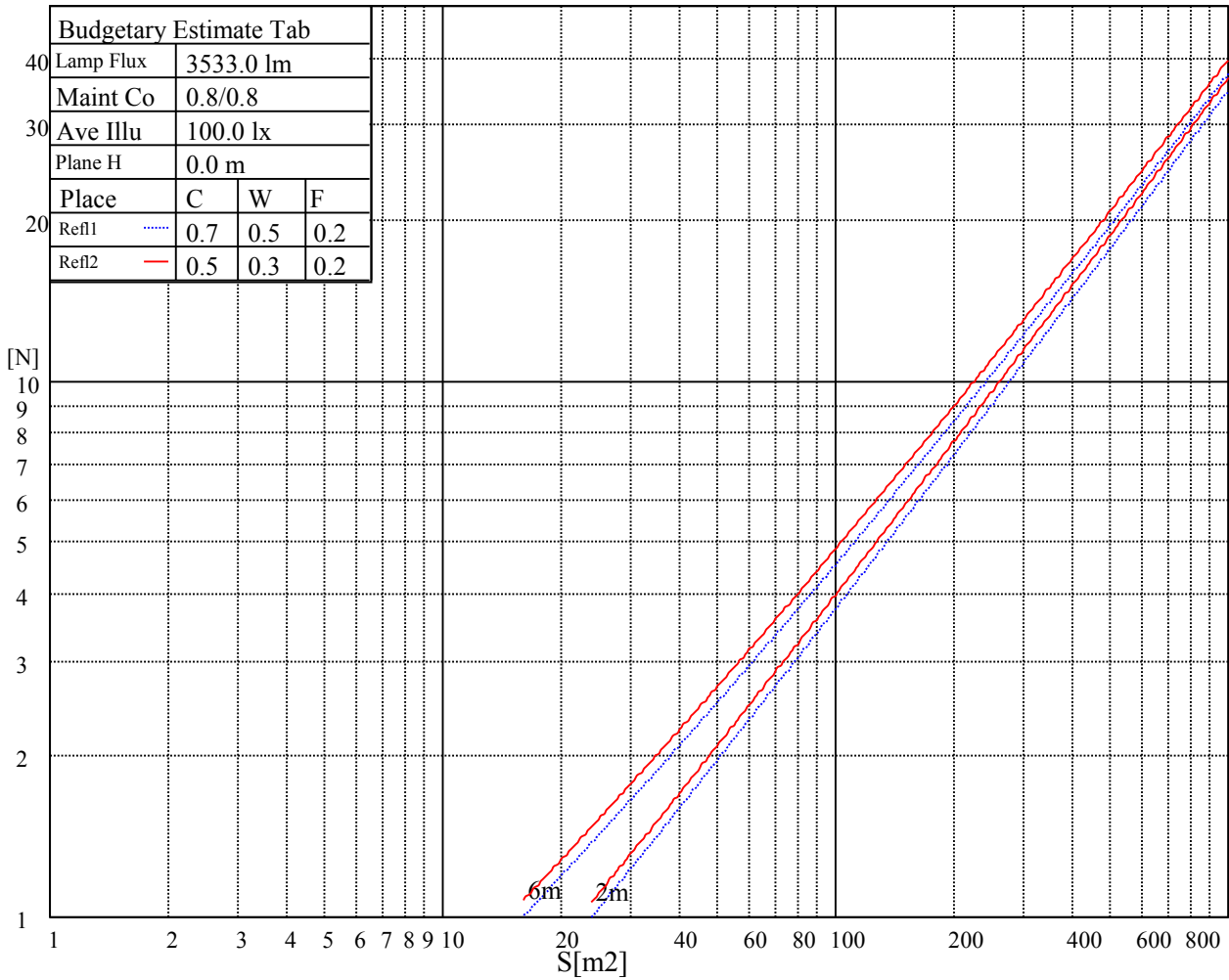
Glare Table

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

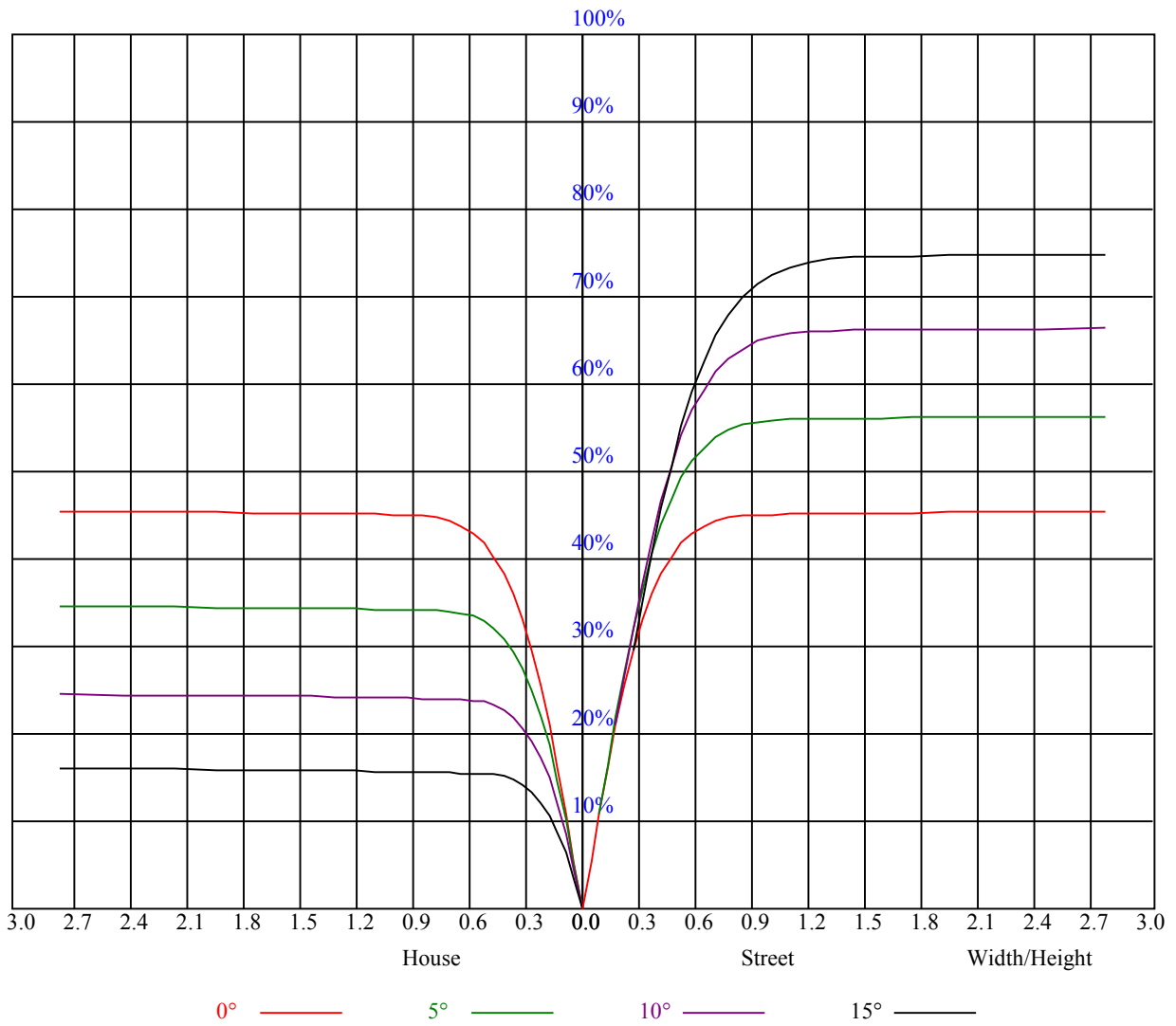
Luminance Limiting Curve



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	1.63	2.55	2.00	2.86	3.17	1.55	2.46	1.91	2.77	3.08
	3H	4.80	5.61	5.19	5.94	6.31	4.76	5.56	5.14	5.89	6.26
	4H	6.53	7.27	6.94	7.63	8.02	6.48	7.23	6.89	7.58	7.97
	6H	8.48	9.16	8.90	9.54	9.93	8.42	9.10	8.84	9.48	9.88
	8H	9.56	10.20	10.00	10.59	11.00	9.50	10.14	9.94	10.53	10.94
	12H	11.31	11.92	11.75	12.30	12.74	11.25	11.86	11.68	12.24	12.67
4H	2H	2.53	3.27	2.93	3.62	4.02	2.46	3.21	2.87	3.56	3.95
	3H	5.94	6.55	6.36	6.96	7.37	5.91	6.52	6.33	6.93	7.34
	4H	7.83	8.38	8.27	8.80	9.25	7.80	8.35	8.24	8.77	9.22
	6H	9.95	10.42	10.42	10.87	11.34	9.90	10.36	10.37	10.81	11.29
	8H	11.13	11.56	11.61	12.02	12.49	11.07	11.50	11.55	11.96	12.43
	12H	12.78	13.15	13.27	13.64	14.12	12.72	13.09	13.21	13.58	14.06
8H	4H	8.55	8.99	9.03	9.44	9.92	8.53	8.96	9.01	9.42	9.89
	6H	10.94	11.29	11.46	11.79	12.28	10.91	11.25	11.42	11.75	12.24
	8H	12.31	12.62	12.85	13.14	13.64	12.27	12.57	12.80	13.09	13.59
	12H	14.10	14.36	14.62	14.86	15.44	14.06	14.31	14.58	14.81	15.40
12H	4H	8.76	9.13	9.25	9.62	10.10	8.74	9.11	9.23	9.60	10.08
	6H	11.46	11.56	11.80	12.04	12.59	11.42	11.53	11.76	12.00	12.55
	8H	12.76	13.02	13.28	13.52	14.10	12.72	12.98	13.24	13.48	14.06
Variation with the observer position at spacings:											
S = 1.0H	5.5/-7.0					5.5/-7.0					
S = 1.5H	7.6/-5.2					7.6/-5.2					
S = 2.0H	8.9/-3.8					8.9/-3.8					
Standard tables:	BK3					BK3					
Uncorrected UGR	1.2					1.2					



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	1.10	1.10	1.10	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.02	0.99	0.97	1.00	0.98	0.96	0.96	0.94	0.93	0.93	0.91	0.90	0.89	0.88	0.87	0.86
2	0.96	0.93	0.90	0.95	0.92	0.89	0.92	0.89	0.87	0.89	0.87	0.85	0.86	0.85	0.83	0.82
3	0.91	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	0.87	0.83	0.79	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.79	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	0.76	0.73	0.71	0.75	0.72	0.70	0.69
7	0.76	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.66
8	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
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	0.61	0.60



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	6102.00	6172.88	5817.94	4638.38	3313.69	1948.50	1265.63	639.56	49.33
45.0	6130.69	6168.38	5718.94	4521.94	3114.00	1877.63	1240.88	618.75	43.82
90.0	6108.19	6095.81	5536.13	4320.00	2856.94	1824.19	1093.44	549.51	43.76
135.0	6113.25	6058.69	5772.94	4816.69	3385.69	2192.06	1376.44	779.63	294.19
180.0	6102.00	6050.81	5650.88	4645.13	3236.63	2009.25	1099.24	650.93	55.41
225.0	6130.13	6113.81	5706.56	4680.56	3251.25	2039.63	1240.88	760.61	73.69
270.0	6108.19	6145.31	5784.75	4743.56	3284.44	1996.88	1337.63	782.44	286.88
315.0	6113.25	6154.88	5598.00	4332.94	2864.81	1806.19	1112.34	514.80	36.11
360.0	6102.00	6172.88	5817.94	4638.38	3313.69	1948.50	1265.63	639.56	49.33
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	18.23	16.43	15.47	14.85	14.40	14.06	13.78	13.61	13.44
45.0	18.23	16.82	15.75	15.13	14.68	14.29	14.01	13.78	13.61
90.0	18.11	16.65	15.69	15.08	14.57	14.23	13.89	13.67	13.56
135.0	19.24	16.76	15.75	15.08	14.51	14.12	13.89	13.73	13.50
180.0	18.06	16.65	15.58	14.85	14.34	14.01	13.78	13.61	13.44
225.0	18.73	16.82	15.75	15.02	14.57	14.23	14.01	13.78	13.67
270.0	19.69	16.88	15.81	15.13	14.57	14.18	13.95	13.78	13.61
315.0	17.72	16.26	15.36	14.74	14.34	14.01	13.78	13.61	13.50
360.0	18.23	16.43	15.47	14.85	14.40	14.06	13.78	13.61	13.44
C/ γ (°)	90.0								
0.0	13.33								
45.0	13.50								
90.0	13.44								
135.0	13.39								
180.0	13.33								
225.0	13.56								
270.0	13.44								
315.0	13.39								
360.0	13.33								