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Nata

LumCAT: 2-1122-A4
Luminaire: 99.02.73.172+92.76.365.00
Report No: NATA0100
Test No: GC2018091211
LampCAT: LUMINUS CXM-11-AC30
Lamp flux(lm): 2496.0
Number of Lamps: 1
Length(mm): 70
Phm Type: C

Voltage(V): 34.7000
Current(A): 0.4900
Power (W): 17.0030
PF: 0.0000
Ballast type: DC
Width(mm): 70
Height(mm): 0

Photometric Results

Lumens(lm): 2278.95
Efficiency(%): 91.30%
Lumens(lm)/Power(W): 134.03
Central intensity(cd): 5480.859
Maximum intensity(cd): 5480.859
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=33.6
 [C90/270]Total=33.6
Field angle(10%Imax): [C0/180]Total=70.7
 [C90/270]Total=70.7
Maximum s/h(1/2): C0_180=0.56 C90_270=0.56
Maximum s/h(1/4): C0_180=0.55 C90_270=0.55
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.53%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.378%

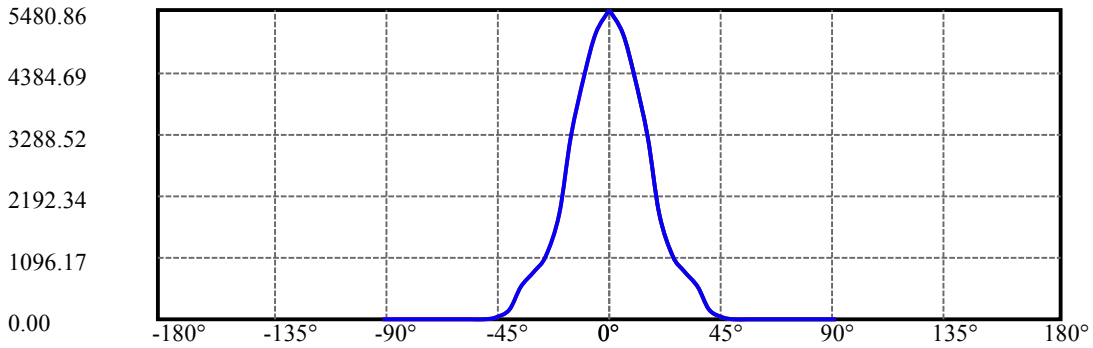
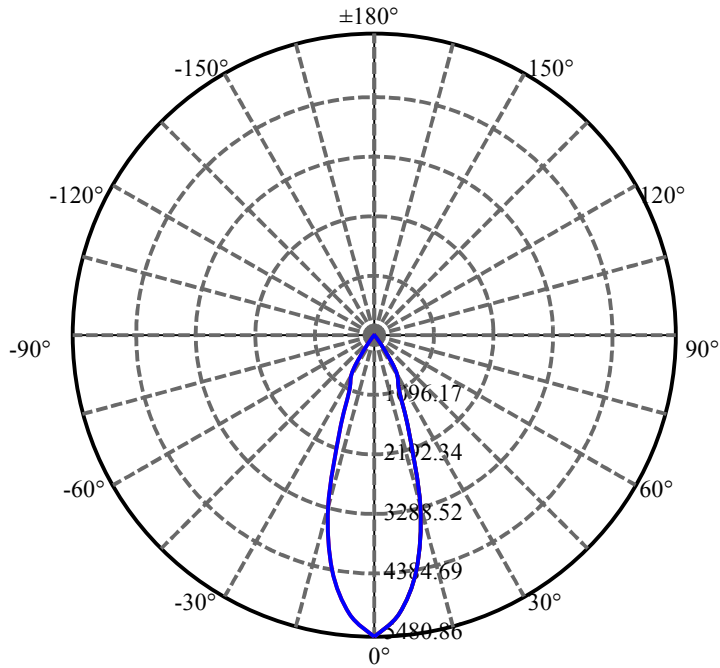
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5480.859	32.777	32.777	1.313%	1.438%
5.0	5077.406	242.565	275.341	9.718%	12.082%
10.0	4330.758	412.215	687.556	16.515%	30.170%
15.0	3227.977	457.948	1145.504	18.347%	50.264%
20.0	1866.867	349.989	1495.493	14.022%	65.622%
25.0	1113.666	257.984	1753.477	10.336%	76.942%
30.0	836.951	229.382	1982.859	9.190%	87.007%
35.0	575.353	180.890	2163.749	7.247%	94.945%
40.0	172.062	60.624	2224.373	2.429%	97.605%
45.0	22.922	8.884	2233.257	.356%	97.995%
50.0	12.488	5.243	2238.5	.210%	98.225%
55.0	11.658	5.234	2243.735	.210%	98.455%
60.0	11.109	5.274	2249.008	.211%	98.686%
65.0	10.744	5.337	2254.346	.214%	98.920%
70.0	10.498	5.407	2259.753	.217%	99.157%
75.0	10.308	5.458	2265.21	.219%	99.397%
80.0	10.167	5.488	2270.699	.220%	99.638%
85.0	10.125	5.529	2276.228	.222%	99.880%
90.0	9.949	2.727	2278.954	.109%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1982.86	79.44%	87.01%
0-40	2224.37	89.12%	97.60%
0-60	2249.01	90.10%	98.69%
0-90	2276.23	91.20%	99.88%
0-120	2276.23	91.20%	99.88%
0-180	2278.95	91.30%	100.00%
60-90	32.49	1.30%	1.43%
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%
0-26.52	1823.16	73.04%	80.00%

ZONAL LUMEN SUMMARY

0-10	687.56
10-20	807.94
20-30	487.37
30-40	241.51
40-50	14.13
50-60	10.51
60-70	10.74
70-80	10.95
80-90	5.53
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: —————

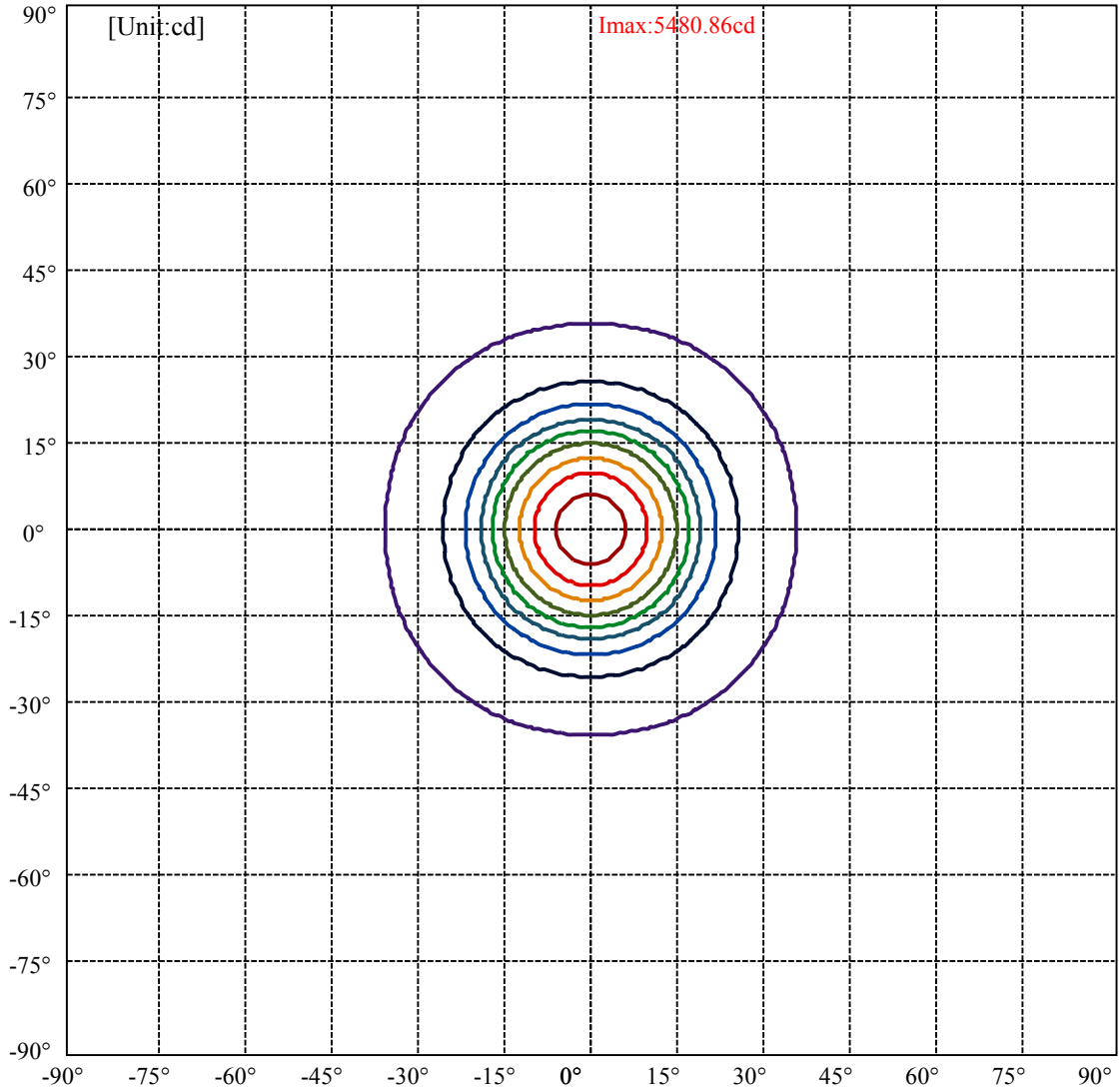
C90/C270: —————

Field angle(10%Imax):C0/180Left:35.3 Right:35.3

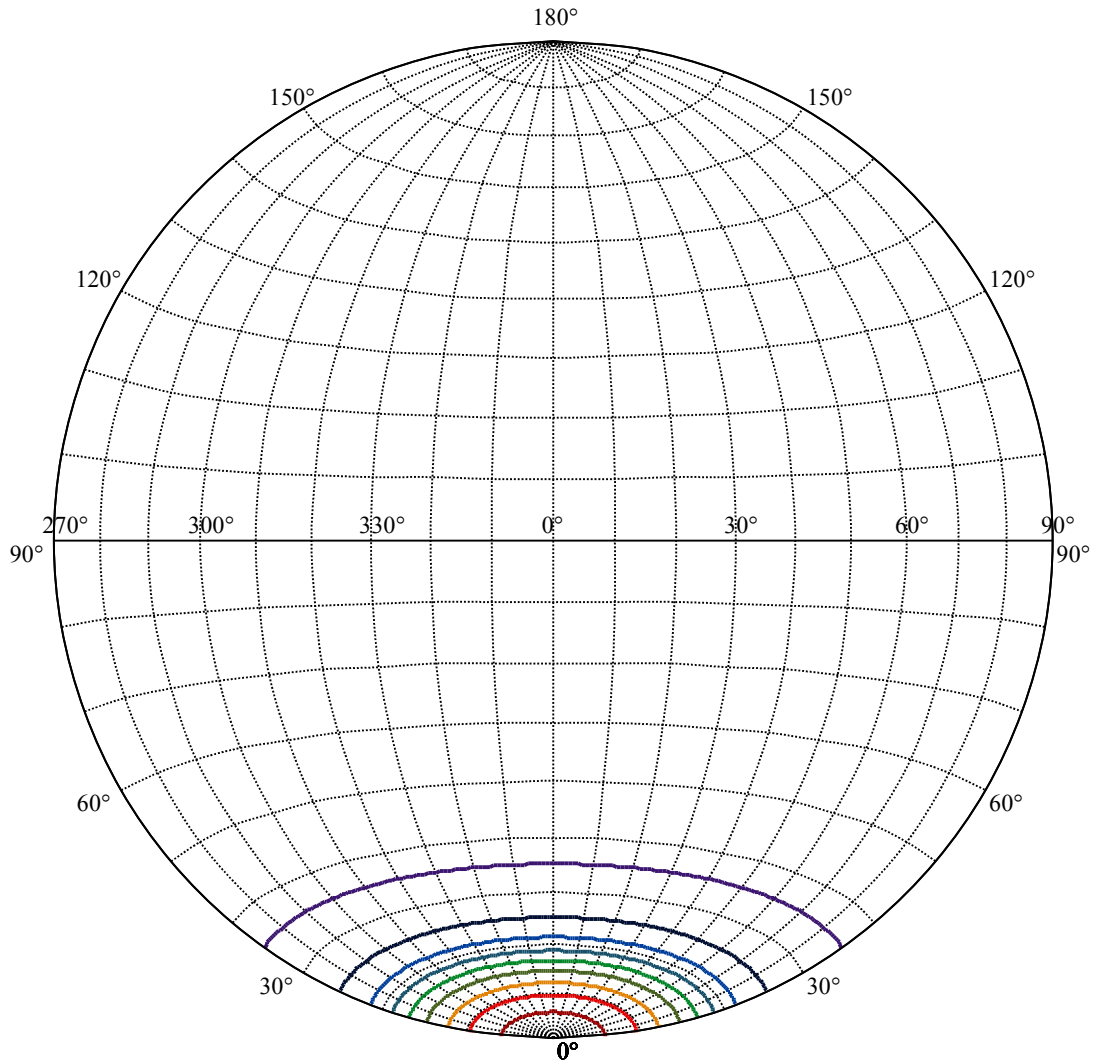
:C90/270Left:35.3 Right:35.3

Beam Angle(50%Imax):C0/180Left:16.8 Right:16.8

:C90/270Left:16.8 Right:16.8



(10%Imax) 548.086	—
(20%Imax) 1096.17	—
(30%Imax) 1644.26	—
(40%Imax) 2192.34	—
(50%Imax) 2740.43	—
(60%Imax) 3288.52	—
(70%Imax) 3836.6	—
(80%Imax) 4384.69	—
(90%Imax) 4932.77	—



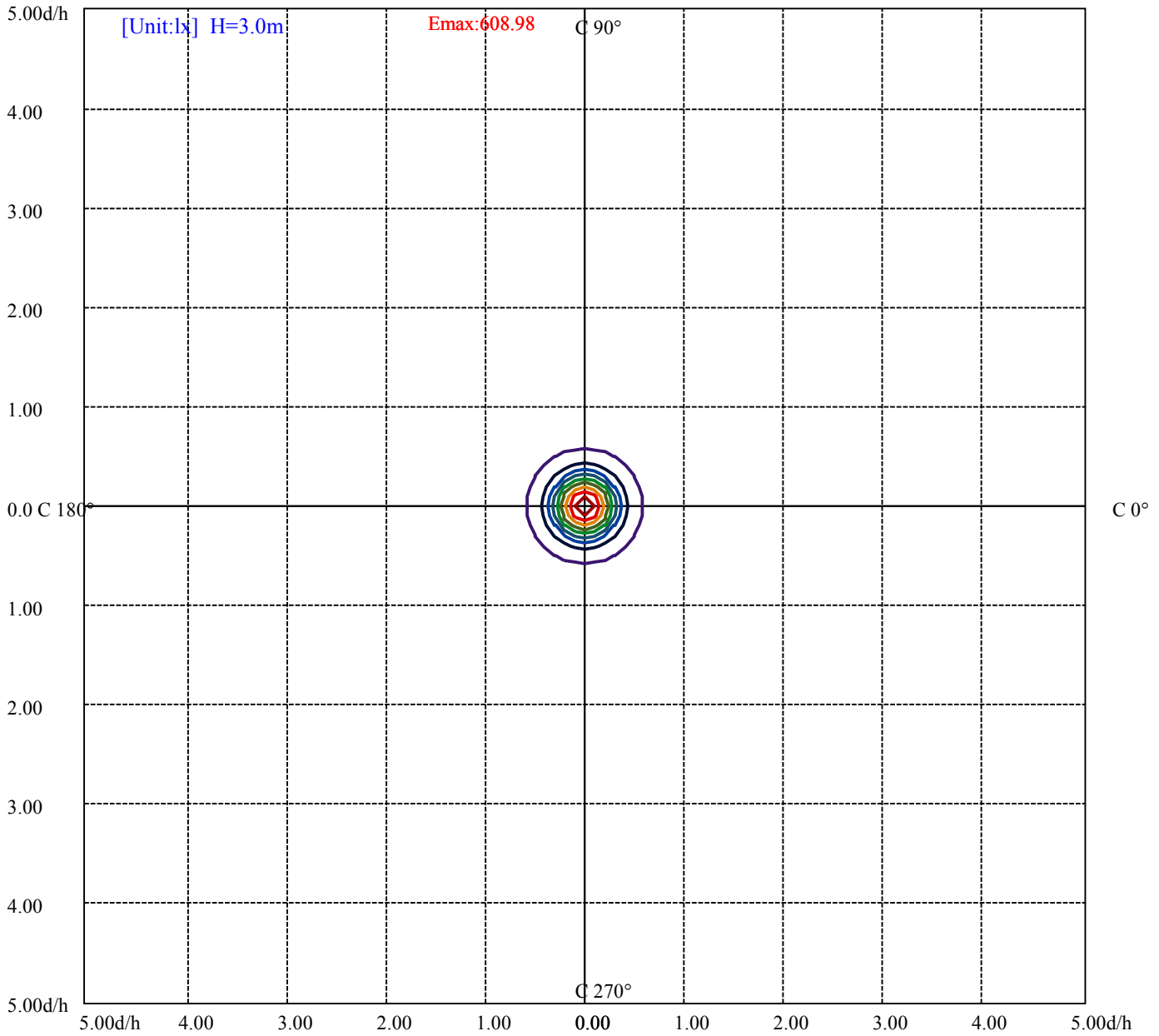
House

[Unit:cd]

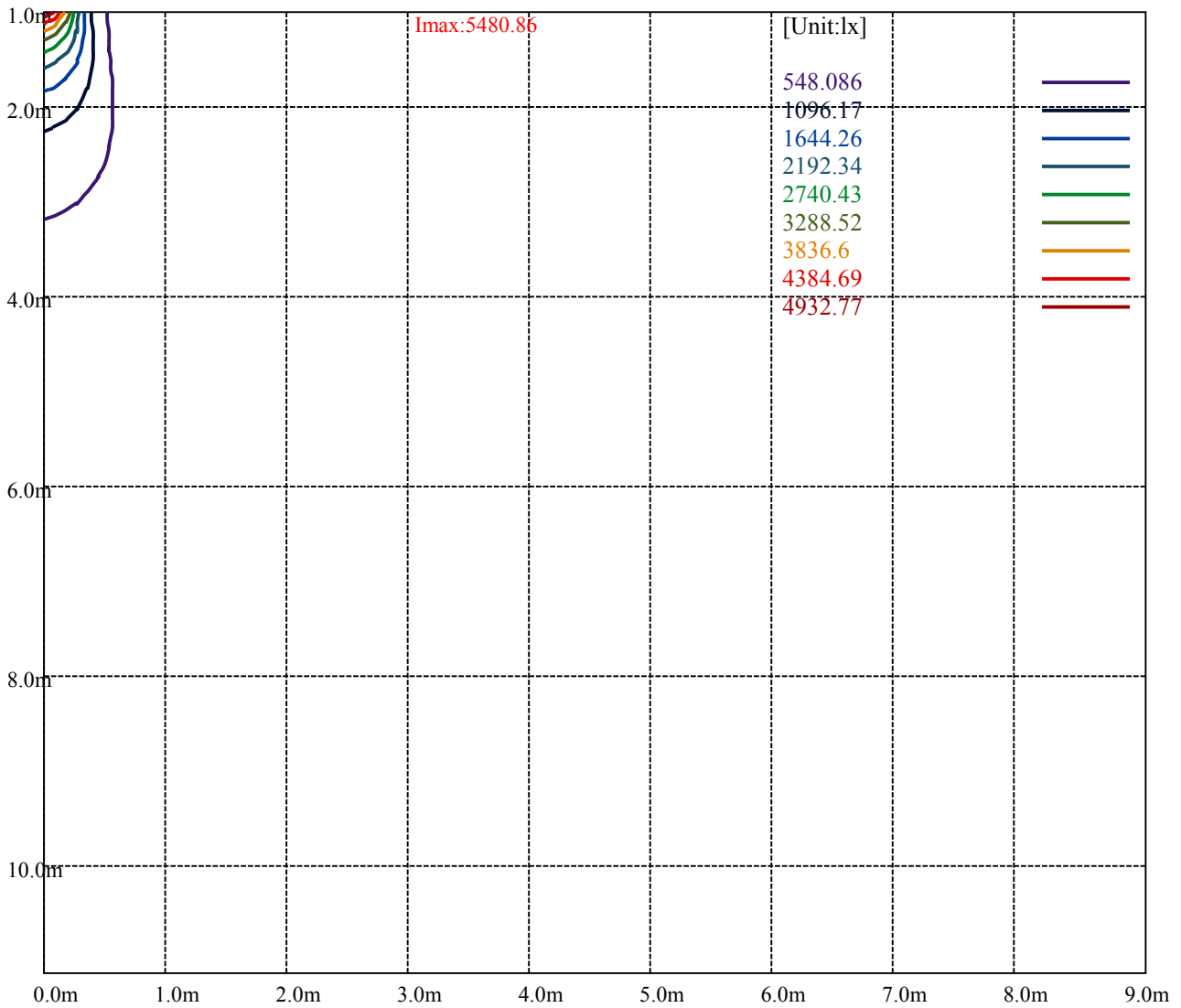
Road

I_{max}:5480.86

(10%I _{max}) 548.086	—
(20%I _{max}) 1096.17	—
(30%I _{max}) 1644.26	—
(40%I _{max}) 2192.34	—
(50%I _{max}) 2740.43	—
(60%I _{max}) 3288.52	—
(70%I _{max}) 3836.6	—
(80%I _{max}) 4384.69	—
(90%I _{max}) 4932.77	—



(10%Emax) 60.89833	—
(20%Emax) 121.7967	—
(30%Emax) 182.6944	—
(40%Emax) 243.5933	—
(50%Emax) 304.4911	—
(60%Emax) 365.39	—
(70%Emax) 426.2878	—
(80%Emax) 487.1867	—
(90%Emax) 548.0844	—



Luminance Table

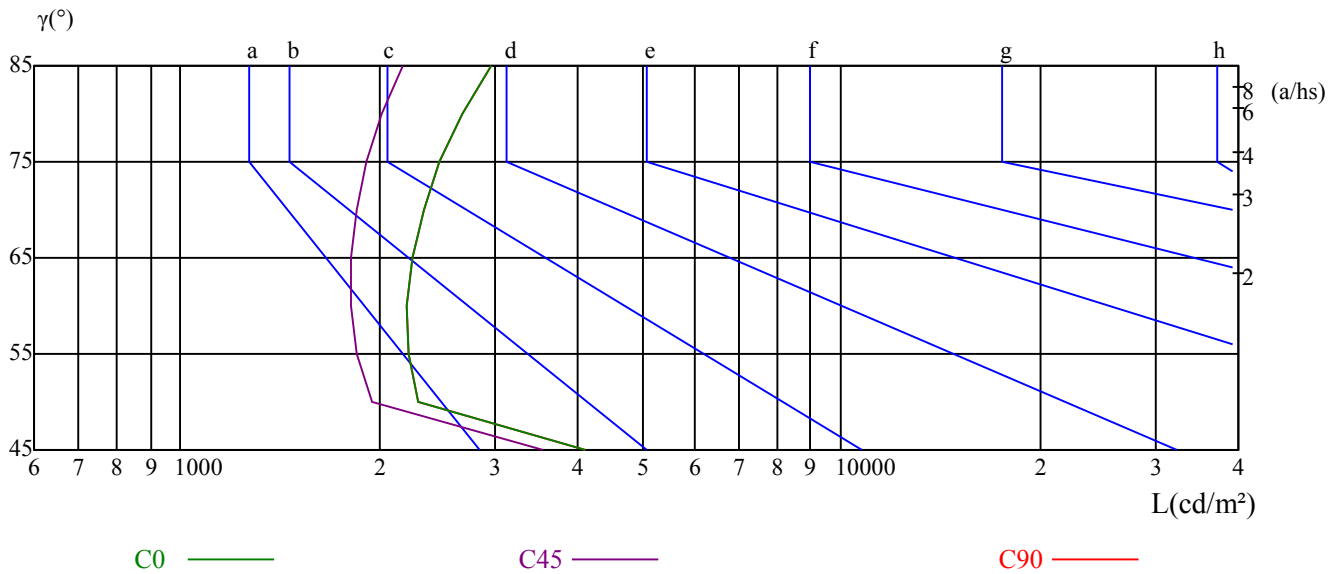
γ	45	50	55	60	65	70	75	80	85
C0	4098	2289	2210	2197	2239	2331	2469	2665	2956
C45	3540	1948	1851	1810	1812	1849	1916	2016	2169
C90	4098	2289	2210	2197	2239	2331	2469	2665	2956

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5188	5188	5188	8128	8128	8128	23708	23708	23708

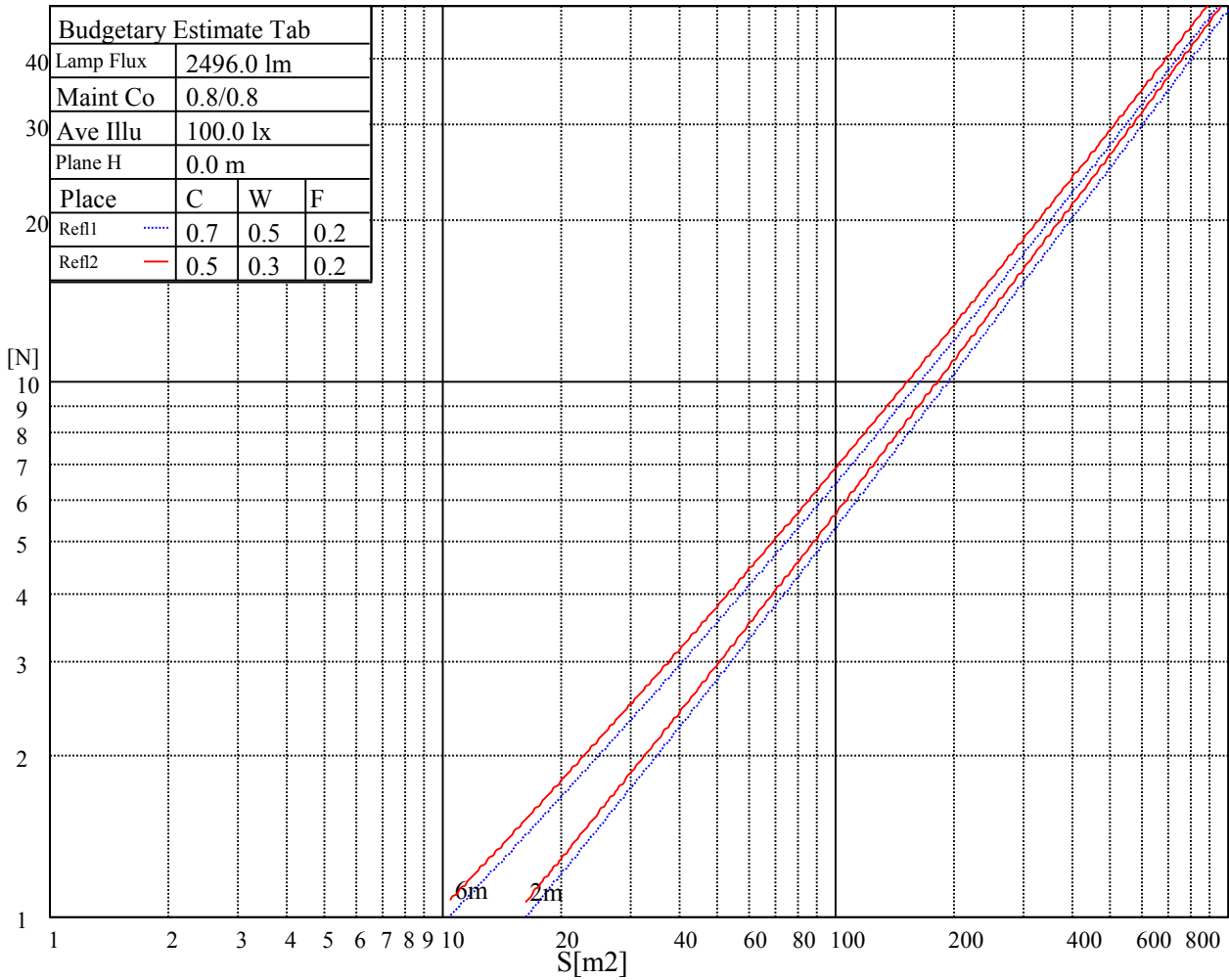
Glare Table

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

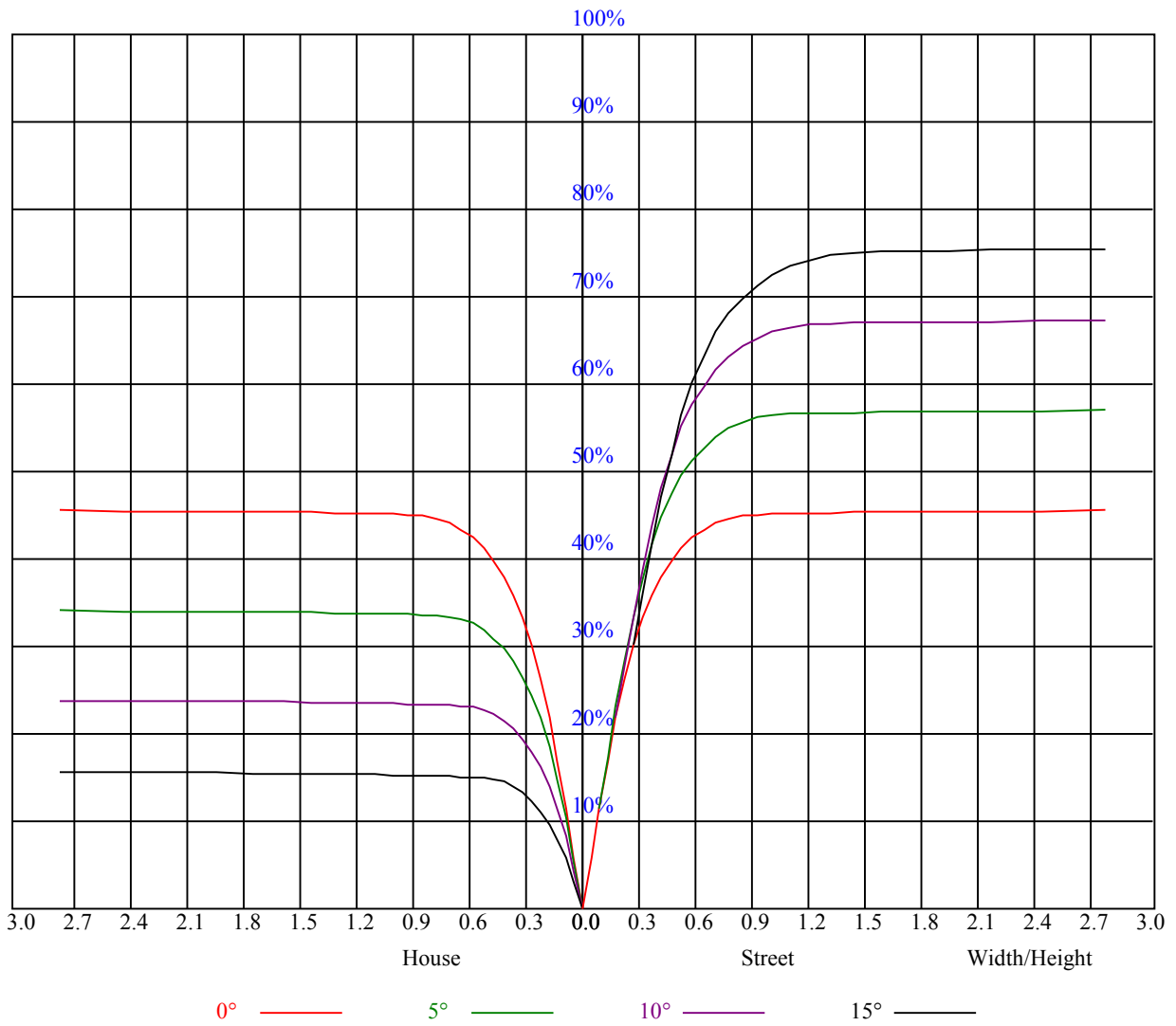
Luminance Limiting Curve



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	1.18	2.10	1.55	2.41	2.73	1.21	2.13	1.57	2.44	2.75
	3H	3.44	4.25	3.82	4.58	4.95	3.46	4.27	3.84	4.60	4.97
	4H	4.66	5.41	5.07	5.77	6.16	4.68	5.43	5.09	5.79	6.18
	6H	5.96	6.64	6.38	7.02	7.42	5.98	6.67	6.40	7.04	7.44
	8H	6.61	7.25	7.05	7.64	8.06	6.63	7.27	7.07	7.67	8.08
	12H	7.62	8.23	8.06	8.62	9.05	7.64	8.26	8.08	8.64	9.07
4H	2H	1.67	2.42	2.08	2.78	3.17	1.69	2.44	2.10	2.79	3.18
	3H	4.22	4.83	4.63	5.24	5.65	4.23	4.85	4.65	5.26	5.66
	4H	5.61	6.16	6.05	6.59	7.04	5.63	6.18	6.07	6.61	7.06
	6H	7.01	7.48	7.48	7.93	8.41	7.03	7.50	7.50	7.95	8.43
	8H	7.78	8.21	8.25	8.66	9.14	7.79	8.23	8.27	8.68	9.16
	12H	8.78	9.16	9.28	9.65	10.13	8.80	9.18	9.30	9.67	10.15
8H	4H	6.05	6.49	6.53	6.94	7.41	6.06	6.50	6.54	6.95	7.43
	6H	7.68	8.03	8.20	8.53	9.02	7.70	8.05	8.21	8.55	9.04
	8H	8.60	8.91	9.14	9.43	9.93	8.62	8.93	9.15	9.45	9.95
	12H	9.74	10.00	10.27	10.50	11.09	9.76	10.02	10.29	10.52	11.10
12H	4H	6.14	6.51	6.63	7.00	7.48	6.15	6.53	6.64	7.02	7.50
	6H	8.06	8.16	8.39	8.63	9.18	8.08	8.18	8.41	8.65	9.20
	8H	8.87	9.13	9.39	9.63	10.21	8.89	9.15	9.41	9.65	10.23
Variation with the observer position at spacings:											
S = 1.0H		5.2/-8.4					5.2/-8.4				
S = 1.5H		7.6/-6.7					7.6/-6.7				
S = 2.0H		9.3/-5.5					9.3/-5.5				
Standard tables:		BK1					BK1				
Uncorrected UGR		-1.6					-1.6				



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	1.10	1.10	1.10	1.08	1.08	1.08	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.93
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	0.71	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	0.68	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	0.66	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	0.64	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	5472.56	5051.25	4379.06	3232.13	1837.69	1094.06	824.06	555.75	87.30
45.0	5478.19	5154.75	4447.13	3455.44	2018.25	1170.56	858.38	612.00	289.13
90.0	5482.69	4949.44	4152.38	3007.13	1746.56	1060.65	816.75	521.83	73.46
135.0	5490.00	5097.94	4349.25	3318.75	1986.19	1161.56	874.69	629.44	306.56
180.0	5472.56	5068.69	4329.00	3236.06	1878.19	1119.43	853.43	588.83	145.63
225.0	5478.19	4972.50	4161.38	3057.75	1719.00	1061.78	817.88	524.98	79.43
270.0	5482.69	5223.94	4509.00	3445.88	2043.00	1175.06	848.25	658.13	307.69
315.0	5490.00	5100.75	4318.88	3070.69	1706.06	1066.22	802.18	511.88	87.30
360.0	5472.56	5051.25	4379.06	3232.13	1837.69	1094.06	824.06	555.75	87.30
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	20.93	12.43	11.59	11.08	10.74	10.52	10.35	10.24	10.29
45.0	22.33	12.66	11.81	11.19	10.80	10.52	10.35	10.18	10.24
90.0	17.21	12.38	11.64	11.14	10.80	10.52	10.29	10.18	10.18
135.0	21.32	12.77	11.93	11.31	10.86	10.58	10.35	10.24	10.07
180.0	25.48	12.66	11.81	11.25	10.86	10.52	10.35	10.13	10.07
225.0	25.14	12.32	11.48	10.97	10.63	10.41	10.18	10.07	9.96
270.0	29.25	12.54	11.59	11.03	10.63	10.46	10.29	10.13	10.07
315.0	21.71	12.15	11.42	10.91	10.63	10.46	10.29	10.18	10.13
360.0	20.93	12.43	11.59	11.08	10.74	10.52	10.35	10.24	10.29
C/γ(°)	90.0								
0.0	9.96								
45.0	9.90								
90.0	9.96								
135.0	9.96								
180.0	10.01								
225.0	9.90								
270.0	9.96								
315.0	9.96								
360.0	9.96								