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Nata

LumCAT: 1687-M
Luminaire: 92.70.126.00
Report No: NATA0100
Test No: GC2018090716
LampCAT: LUMINUS CHM-9-XD20
Lamp flux(lm): 1969.0
Number of Lamps: 1
Length(mm): 46
Phm Type: C

Voltage(V): 35.1000
Current(A): 0.4000
Power (W): 14.0400
PF: 0.0000
Ballast type: DC
Width(mm): 46
Height(mm): 0

Photometric Results

Lumens(lm): 1813.72
Efficiency(%): 92.11%
Lumens(lm)/Power(W): 131.10
Central intensity(cd): 4798.406
Maximum intensity(cd): 4798.406
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=25.7
 [C90/270]Total=25.7
Field angle(10%Imax): [C0/180]Total=79.6
 [C90/270]Total=79.6
Maximum s/h(1/2): C0_180=0.44 C90_270=0.44
Maximum s/h(1/4): C0_180=0.45 C90_270=0.45
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 93.48%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.366%

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/9/7
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50

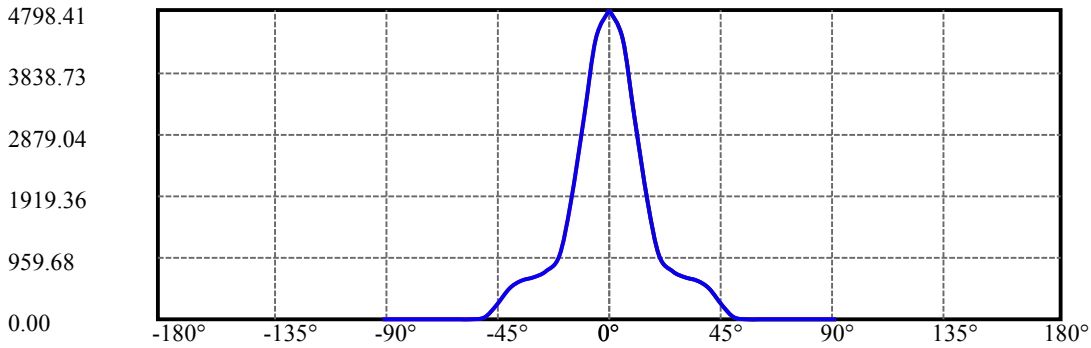
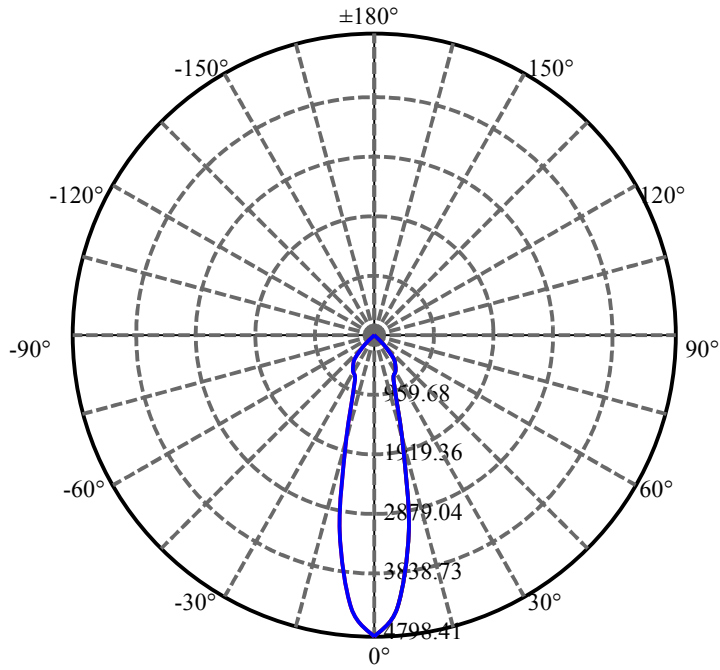
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4798.406	28.695	28.695	1.457%	1.582%
5.0	4348.477	207.741	236.437	10.551%	13.036%
10.0	3171.445	301.868	538.304	15.331%	29.680%
15.0	1822.289	258.525	796.83	13.130%	43.933%
20.0	979.552	183.640	980.47	9.327%	54.058%
25.0	736.109	170.522	1150.992	8.660%	63.460%
30.0	660.558	181.038	1332.03	9.194%	73.442%
35.0	610.552	191.957	1523.987	9.749%	84.025%
40.0	475.017	167.366	1691.352	8.500%	93.253%
45.0	210.319	81.518	1772.87	4.140%	97.748%
50.0	25.165	10.567	1783.437	.537%	98.330%
55.0	10.294	4.622	1788.059	.235%	98.585%
60.0	8.733	4.145	1792.204	.211%	98.814%
65.0	8.072	4.010	1796.214	.204%	99.035%
70.0	7.587	3.908	1800.122	.198%	99.250%
75.0	7.327	3.879	1804.001	.197%	99.464%
80.0	7.214	3.894	1807.895	.198%	99.679%
85.0	7.144	3.901	1811.796	.198%	99.894%
90.0	7.031	1.927	1813.723	.098%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1332.03	67.65%	73.44%
0-40	1691.35	85.90%	93.25%
0-60	1792.20	91.02%	98.81%
0-90	1811.80	92.02%	99.89%
0-120	1811.80	92.02%	99.89%
0-180	1813.72	92.11%	100.00%
60-90	23.74	1.21%	1.31%
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%
0-33.10	1450.98	73.69%	80.00%

ZONAL LUMEN SUMMARY

0-10	538.30
10-20	442.17
20-30	351.56
30-40	359.32
40-50	92.08
50-60	8.77
60-70	7.92
70-80	7.77
80-90	3.90
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: —————

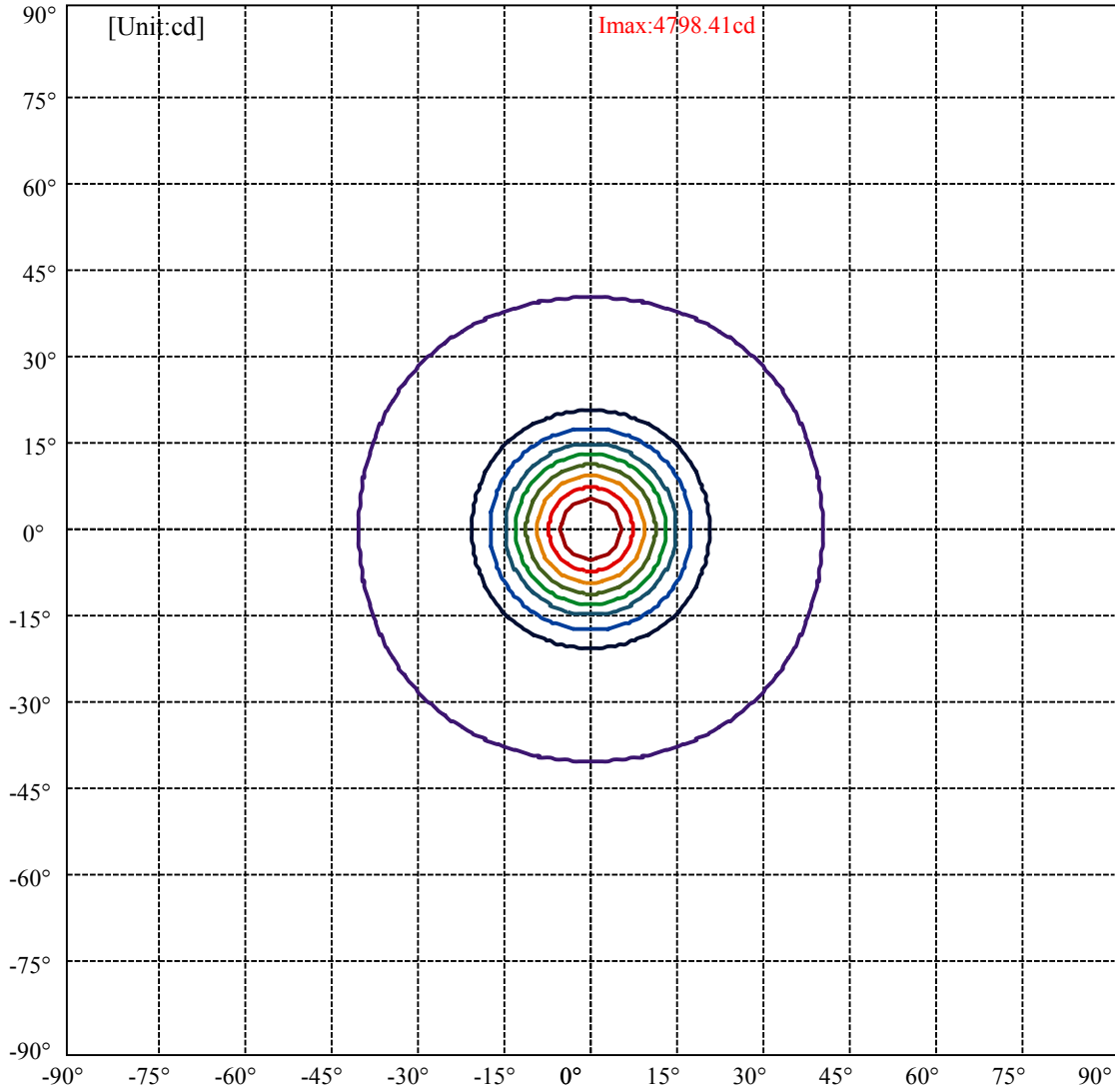
C90/C270: —————

Field angle(10%Imax):C0/180Left:39.8 Right:39.8

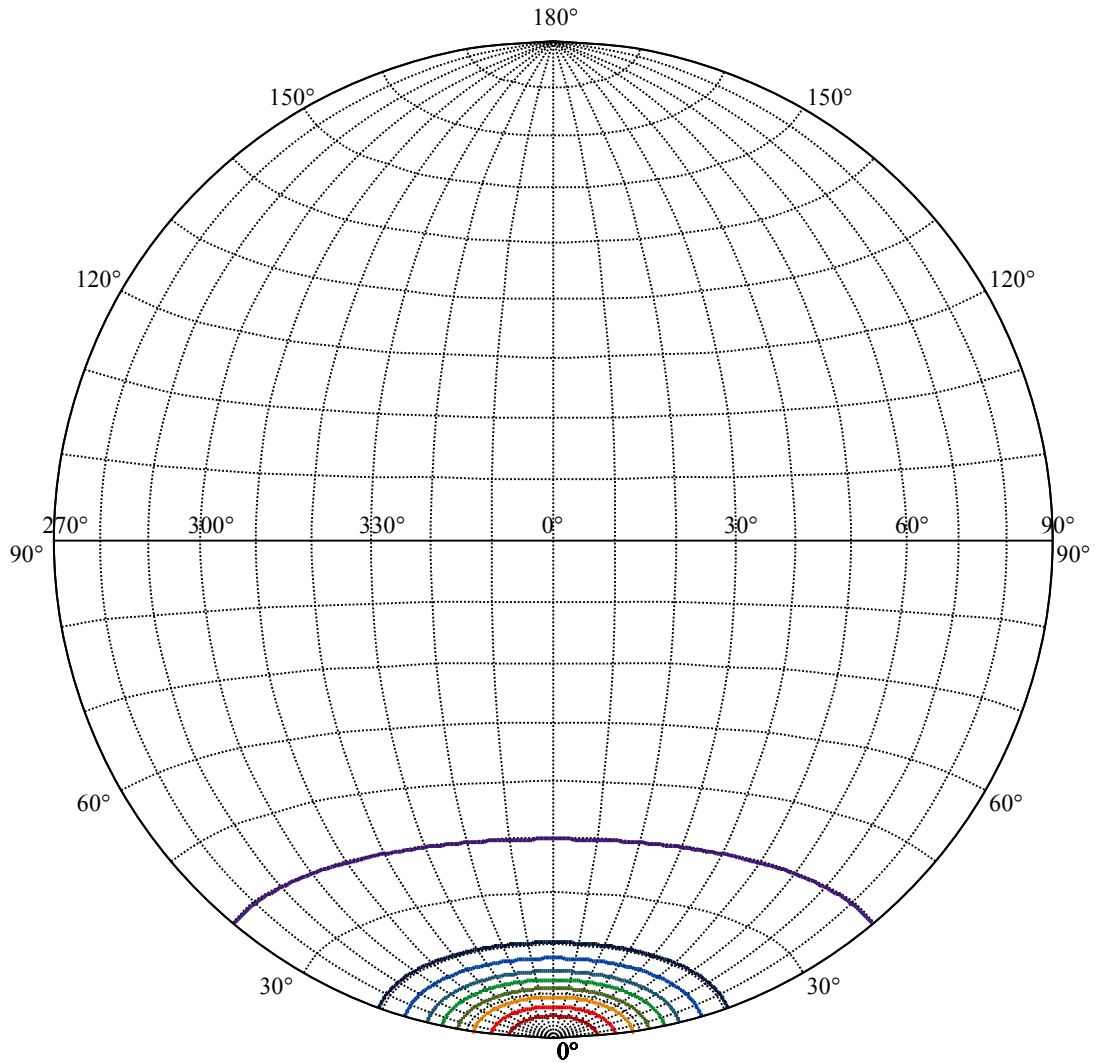
:C90/270Left:39.8 Right:39.8

Beam Angle(50%Imax):C0/180Left:12.9 Right:12.9

:C90/270Left:12.9 Right:12.9



(10%Imax) 479.841	—
(20%Imax) 959.681	—
(30%Imax) 1439.52	—
(40%Imax) 1919.36	—
(50%Imax) 2399.2	—
(60%Imax) 2879.04	—
(70%Imax) 3358.88	—
(80%Imax) 3838.73	—
(90%Imax) 4318.57	—



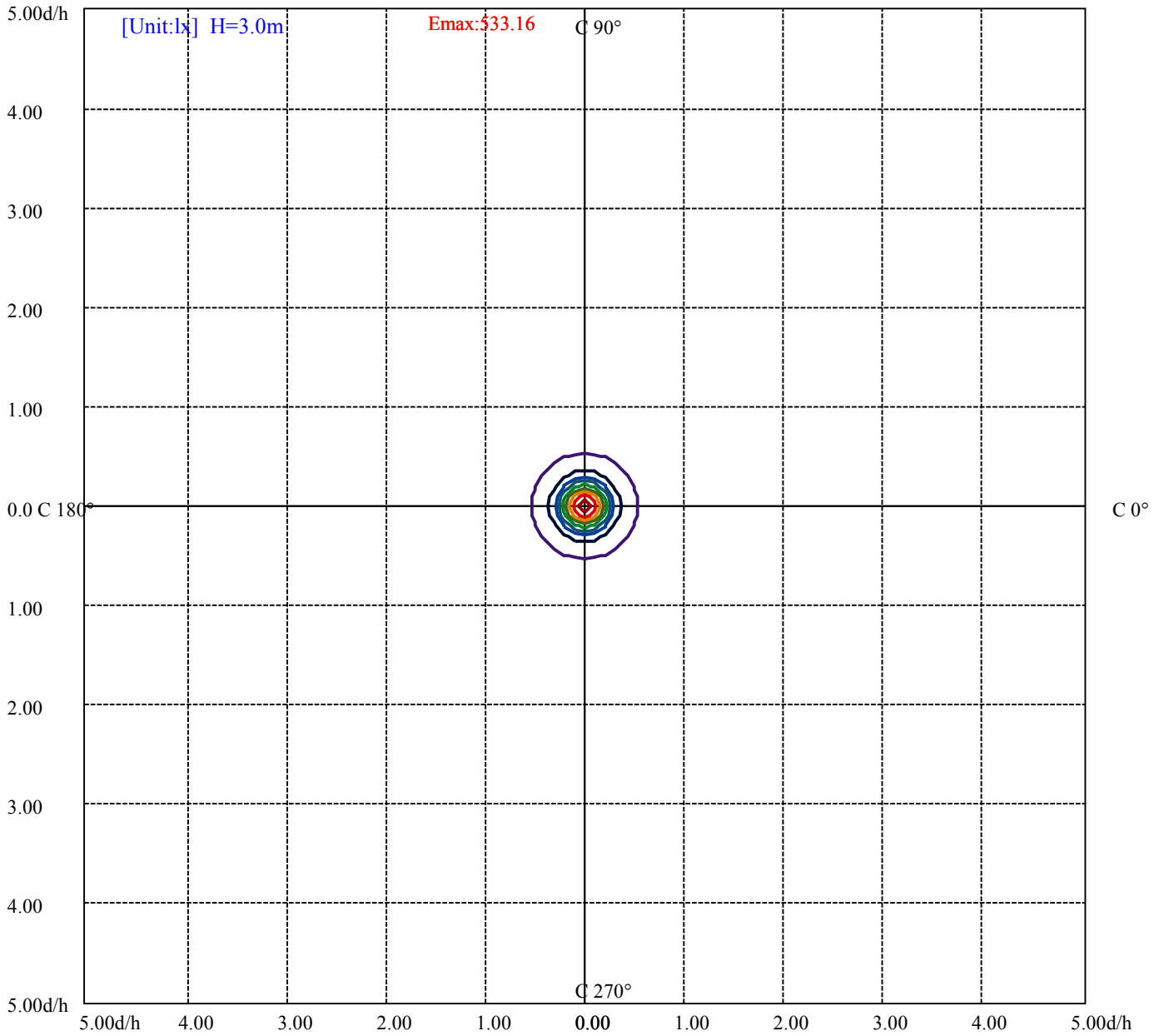
House

[Unit:cd]

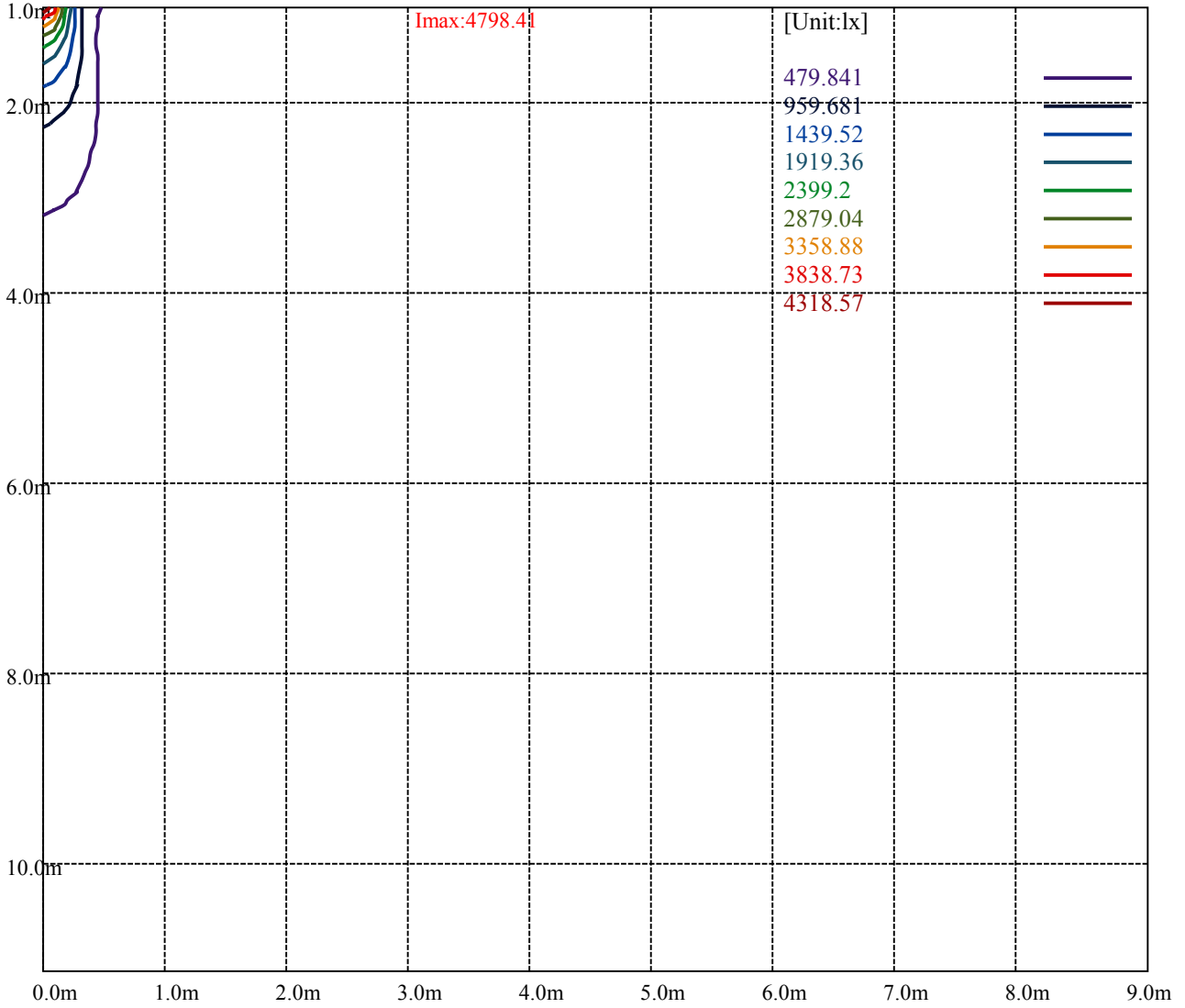
Road

Imax:4798.41

(10%Imax) 479.841	—
(20%Imax) 959.681	—
(30%Imax) 1439.52	—
(40%Imax) 1919.36	—
(50%Imax) 2399.2	—
(60%Imax) 2879.04	—
(70%Imax) 3358.88	—
(80%Imax) 3838.73	—
(90%Imax) 4318.57	—



(10%Emax) 53.31544	—
(20%Emax) 106.631	—
(30%Emax) 159.9467	—
(40%Emax) 213.2622	—
(50%Emax) 266.5778	—
(60%Emax) 319.8933	—
(70%Emax) 373.2078	—
(80%Emax) 426.5233	—
(90%Emax) 479.8389	—



Luminance Table

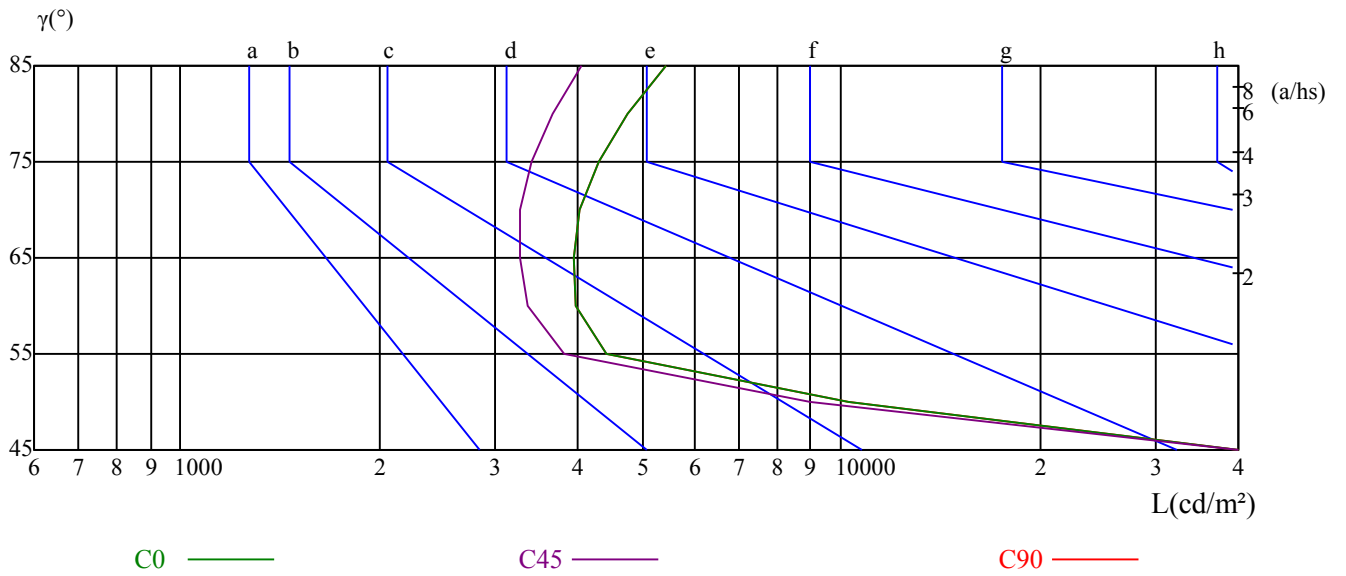
γ	45	50	55	60	65	70	75	80	85
C0	82621	10273	4408	3965	3931	4017	4286	4754	5438
C45	73339	8992	3801	3362	3273	3275	3408	3669	4041
C90	82621	10273	4408	3965	3931	4017	4286	4754	5438

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
7640	7640	7640	11323	11323	11323	32786	32786	32786

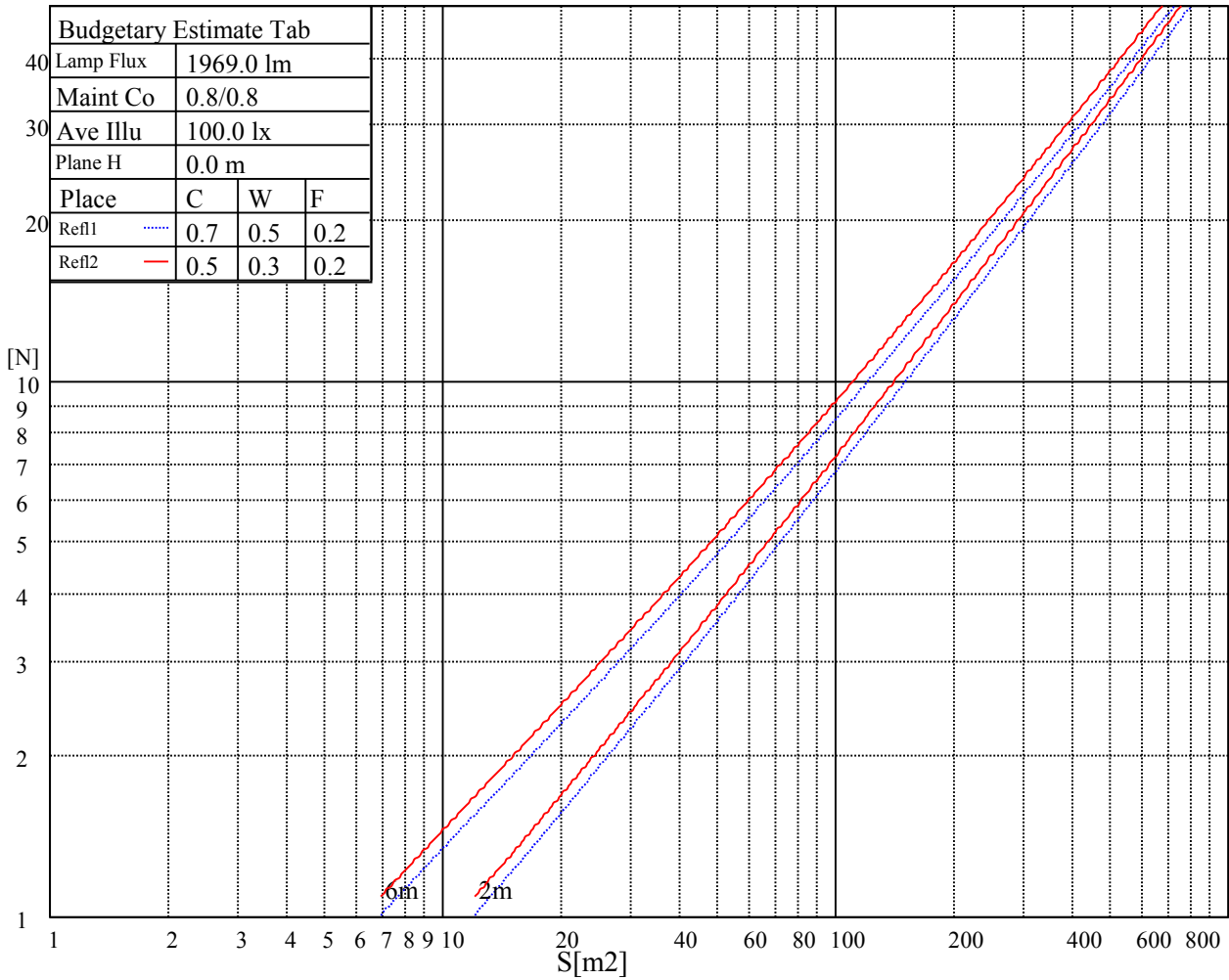
Glare Table

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

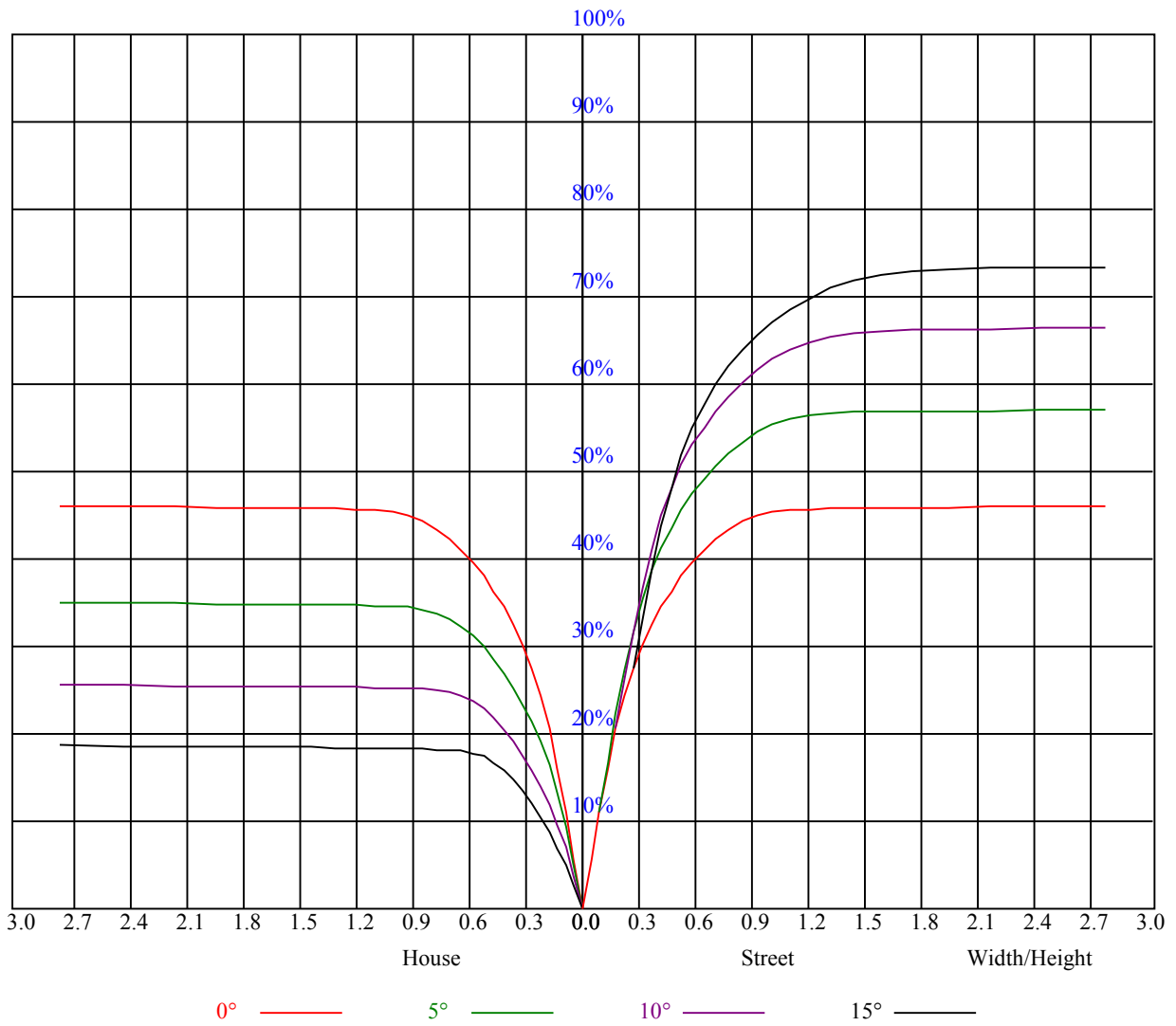
Luminance Limiting Curve



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	4.18	5.20	4.54	5.51	5.83	4.22	5.25	4.59	5.56	5.87
	3H	6.16	7.06	6.54	7.39	7.76	6.15	7.05	6.53	7.38	7.75
	4H	7.26	8.10	7.67	8.45	8.84	7.24	8.07	7.65	8.42	8.81
	6H	8.50	9.26	8.91	9.63	10.03	8.45	9.21	8.87	9.58	9.98
	8H	9.14	9.85	9.57	10.24	10.65	9.07	9.78	9.51	10.18	10.59
	12H	10.15	10.83	10.58	11.21	11.65	10.05	10.73	10.48	11.12	11.55
4H	2H	4.60	5.44	5.01	5.79	6.18	4.64	5.47	5.05	5.82	6.21
	3H	6.89	7.56	7.30	7.97	8.38	6.88	7.56	7.29	7.96	8.37
	4H	8.18	8.79	8.62	9.21	9.66	8.16	8.76	8.60	9.19	9.63
	6H	9.53	10.05	10.00	10.50	10.97	9.49	10.01	9.96	10.46	10.93
	8H	10.29	10.77	10.77	11.22	11.70	10.23	10.71	10.71	11.16	11.64
	12H	11.31	11.73	11.80	12.22	12.70	11.22	11.64	11.71	12.12	12.60
8H	4H	8.59	9.08	9.07	9.53	10.00	8.57	9.06	9.05	9.51	9.98
	6H	10.19	10.57	10.70	11.08	11.56	10.15	10.53	10.66	11.04	11.52
	8H	11.10	11.45	11.64	11.97	12.47	11.04	11.39	11.58	11.91	12.41
	12H	12.27	12.57	12.79	13.06	13.64	12.17	12.47	12.70	12.97	13.55
12H	4H	8.68	9.10	9.17	9.59	10.06	8.66	9.08	9.15	9.57	10.05
	6H	10.65	10.70	10.89	11.17	11.72	10.61	10.66	10.85	11.13	11.68
	8H	11.37	11.67	11.89	12.16	12.74	11.31	11.61	11.83	12.11	12.69
Variation with the observer position at spacings:											
S = 1.0H	3.2/-12.0					3.2/-12.0					
S = 1.5H	5.0/-10.3					5.0/-10.3					
S = 2.0H	6.9/-9.1					6.9/-9.1					
Standard tables:	BK0					BK0					
Uncorrected UGR	3.7					3.7					



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	1.09	1.09	1.09	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.93
1	1.02	1.00	0.97	1.00	0.98	0.96	0.96	0.94	0.93	0.93	0.91	0.90	0.90	0.88	0.87	0.86
2	0.96	0.92	0.89	0.94	0.91	0.88	0.91	0.88	0.86	0.88	0.86	0.84	0.86	0.84	0.82	0.81
3	0.90	0.86	0.82	0.89	0.85	0.81	0.87	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.76
4	0.85	0.80	0.77	0.84	0.80	0.76	0.82	0.78	0.75	0.80	0.77	0.74	0.79	0.76	0.74	0.72
5	0.81	0.76	0.72	0.80	0.75	0.72	0.78	0.74	0.71	0.77	0.73	0.70	0.75	0.72	0.70	0.69
6	0.77	0.72	0.68	0.76	0.71	0.68	0.75	0.71	0.67	0.74	0.70	0.67	0.72	0.69	0.66	0.65
7	0.73	0.68	0.65	0.73	0.68	0.64	0.72	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.63	0.62
8	0.70	0.65	0.62	0.70	0.65	0.61	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.59
9	0.67	0.62	0.59	0.67	0.62	0.59	0.66	0.62	0.58	0.65	0.61	0.58	0.64	0.61	0.58	0.57
10	0.64	0.60	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.56	0.55



Intensity data(cd)

C/\u03b3(\u00b0)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	4786.31	4514.63	3437.44	2095.31	1100.81	758.25	669.94	617.63	529.88
45.0	4808.81	4370.63	3264.19	1832.63	980.44	738.00	663.19	612.56	493.31
90.0	4791.38	4144.50	2888.44	1602.00	895.28	715.28	652.95	603.00	429.36
135.0	4807.13	4384.13	3155.06	1886.06	970.31	733.50	660.94	617.06	470.25
180.0	4786.31	4136.06	2868.19	1528.31	851.68	713.08	651.94	601.76	423.34
225.0	4808.81	4314.38	3105.00	1706.06	929.36	729.62	657.28	605.87	449.66
270.0	4791.38	4550.63	3423.38	2099.81	1100.25	763.31	671.06	618.19	523.13
315.0	4807.13	4372.88	3229.88	1828.13	1008.28	737.83	657.17	608.34	481.22
360.0	4786.31	4514.63	3437.44	2095.31	1100.81	758.25	669.94	617.63	529.88
C/\u03b3(\u00b0)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	286.88	34.26	12.09	9.17	8.33	7.71	7.37	7.20	7.09
45.0	291.38	27.17	10.41	8.89	8.21	7.71	7.43	7.26	7.14
90.0	130.73	21.49	9.68	8.78	8.21	7.71	7.43	7.37	7.31
135.0	207.56	22.95	9.79	8.72	8.16	7.59	7.31	7.20	7.14
180.0	115.99	18.56	9.17	8.33	7.76	7.43	7.26	7.14	7.03
225.0	170.16	23.29	9.51	8.49	7.88	7.43	7.20	7.14	7.09
270.0	299.81	28.35	11.19	8.83	8.10	7.65	7.37	7.26	7.26
315.0	180.06	25.26	10.52	8.66	7.93	7.48	7.26	7.14	7.09
360.0	286.88	34.26	12.09	9.17	8.33	7.71	7.37	7.20	7.09
C/\u03b3(\u00b0)	90.0								
0.0	7.03								
45.0	7.03								
90.0	7.03								
135.0	7.03								
180.0	7.03								
225.0	7.03								
270.0	7.03								
315.0	7.03								
360.0	7.03								