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Nata

LumCAT: 3-1548-A3
Luminaire: TE2133401-1+92.76.365.00
Report No: NATA0100
Test No: NT2017071201
LampCAT: CREE CXA1830
Lamp flux(lm): 1976.0
Number of Lamps: 1
Length(mm): 78
Phm Type: C

Voltage(V): 35.3000
Current(A): 0.5000
Power (W): 17.1500
PF: 0.0000
Ballast type: DC
Width(mm): 78
Height(mm): 0

Photometric Results

Lumens(lm): 1814.59
Efficiency(%): 91.83%
Lumens(lm)/Power(W): 110.52
Central intensity(cd): 13798.810
Maximum intensity(cd): 13798.810
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=14.9
 [C90/270]Total=14.9
Field angle(10%Imax): [C0/180]Total=29.5
 [C90/270]Total=29.5
Maximum s/h(1/2): C0_180=0.26 C90_270=0.26
Maximum s/h(1/4): C0_180=0.25 C90_270=0.25
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 95.92%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 94.622%

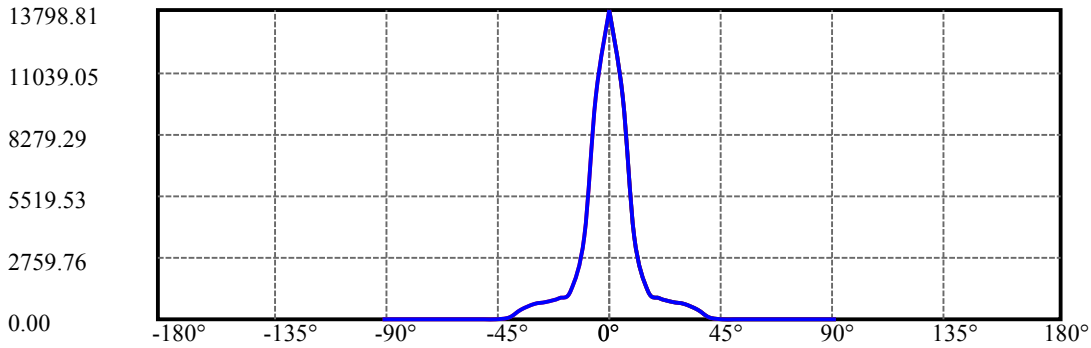
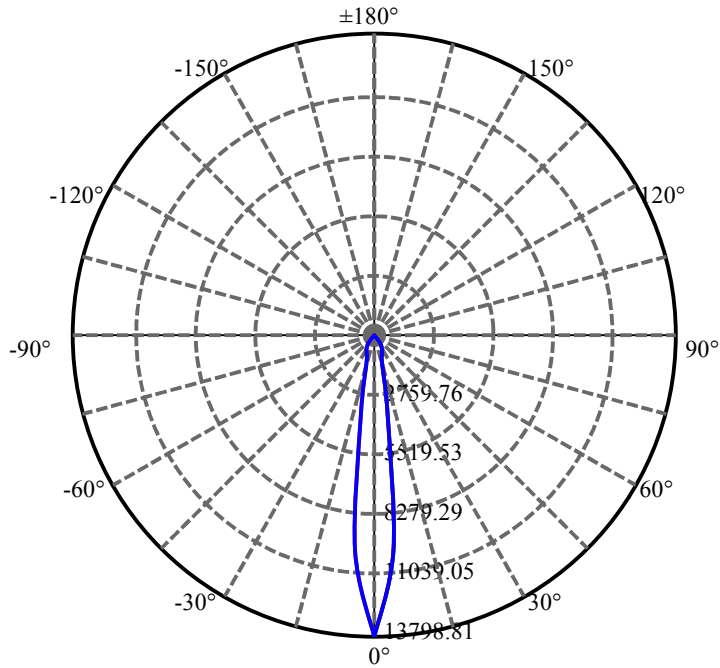
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	13798.814	82.520	82.52	4.176%	4.548%
5.0	9922.054	474.009	556.529	23.988%	30.670%
10.0	3710.988	353.223	909.752	17.876%	50.135%
15.0	1249.949	177.328	1087.081	8.974%	59.908%
20.0	903.295	169.344	1256.425	8.570%	69.240%
25.0	807.261	187.004	1443.429	9.464%	79.546%
30.0	698.866	191.537	1634.967	9.693%	90.101%
35.0	395.085	124.214	1759.181	6.286%	96.947%
40.0	57.196	20.152	1779.333	1.020%	98.057%
45.0	9.516	3.688	1783.021	.187%	98.260%
50.0	8.132	3.415	1786.436	.173%	98.449%
55.0	7.694	3.455	1789.891	.175%	98.639%
60.0	7.478	3.550	1793.44	.180%	98.835%
65.0	7.374	3.663	1797.104	.185%	99.036%
70.0	7.290	3.755	1800.859	.190%	99.243%
75.0	7.269	3.849	1804.708	.195%	99.456%
80.0	7.235	3.905	1808.613	.198%	99.671%
85.0	7.346	4.011	1812.624	.203%	99.892%
90.0	7.165	1.964	1814.588	.099%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1634.97	82.74%	90.10%
0-40	1779.33	90.05%	98.06%
0-60	1793.44	90.76%	98.83%
0-90	1812.62	91.73%	99.89%
0-120	1812.62	91.73%	99.89%
0-180	1814.59	91.83%	100.00%
60-90	22.73	1.15%	1.25%
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%
0-25.22	1451.67	73.47%	80.00%

ZONAL LUMEN SUMMARY

0-10	909.75
10-20	346.67
20-30	378.54
30-40	144.37
40-50	7.10
50-60	7.00
60-70	7.42
70-80	7.75
80-90	4.01
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



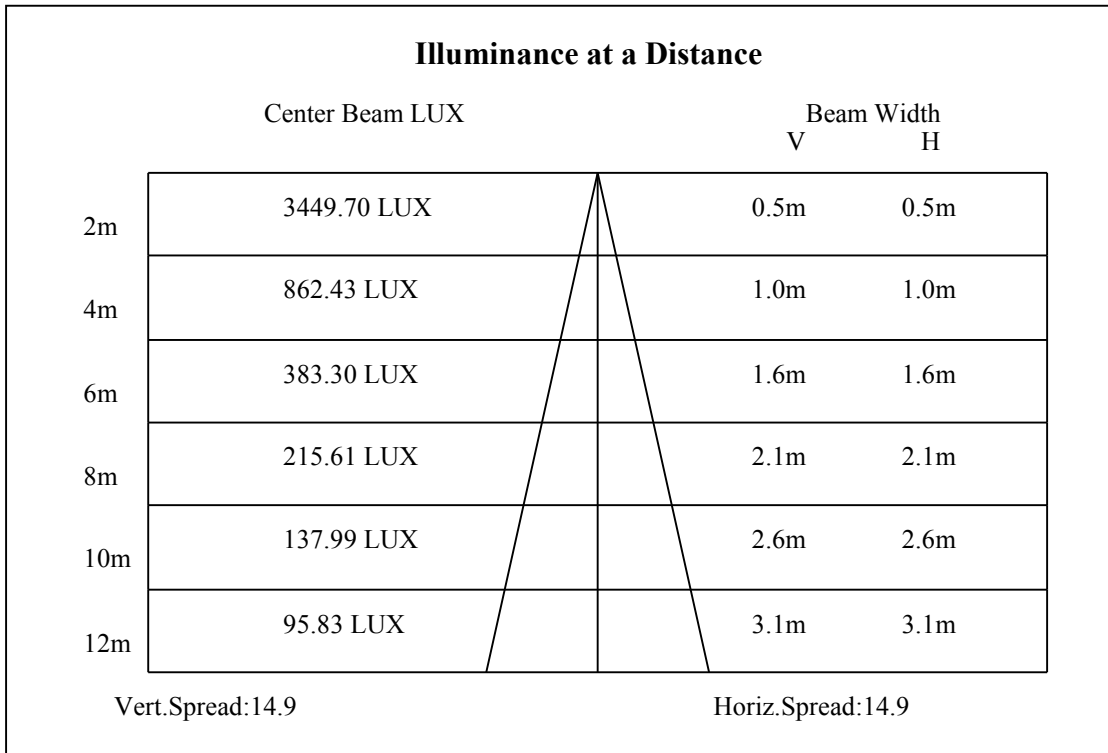
C0(Max): —————

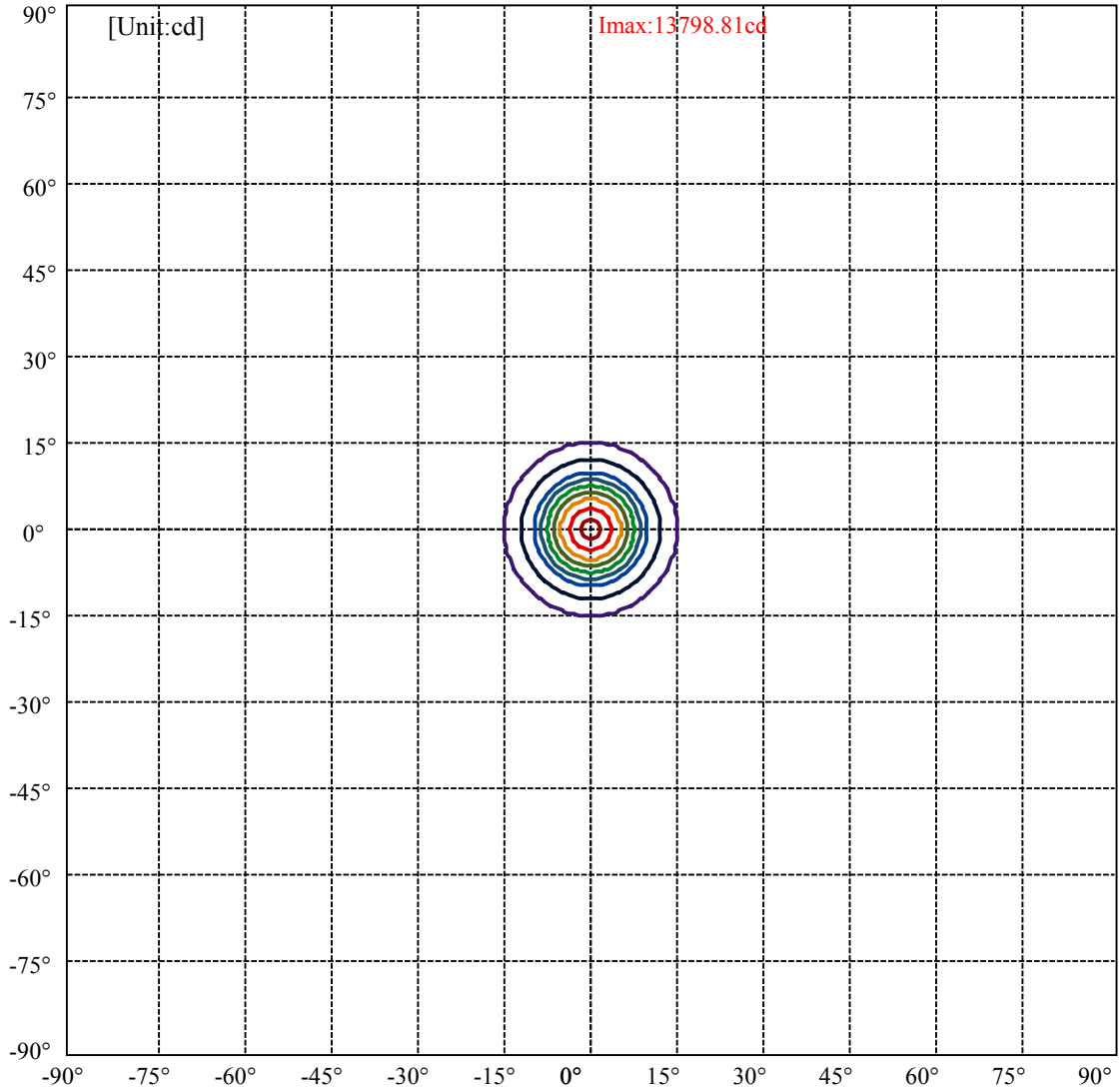
C0/C180: —————

C90/C270: —————

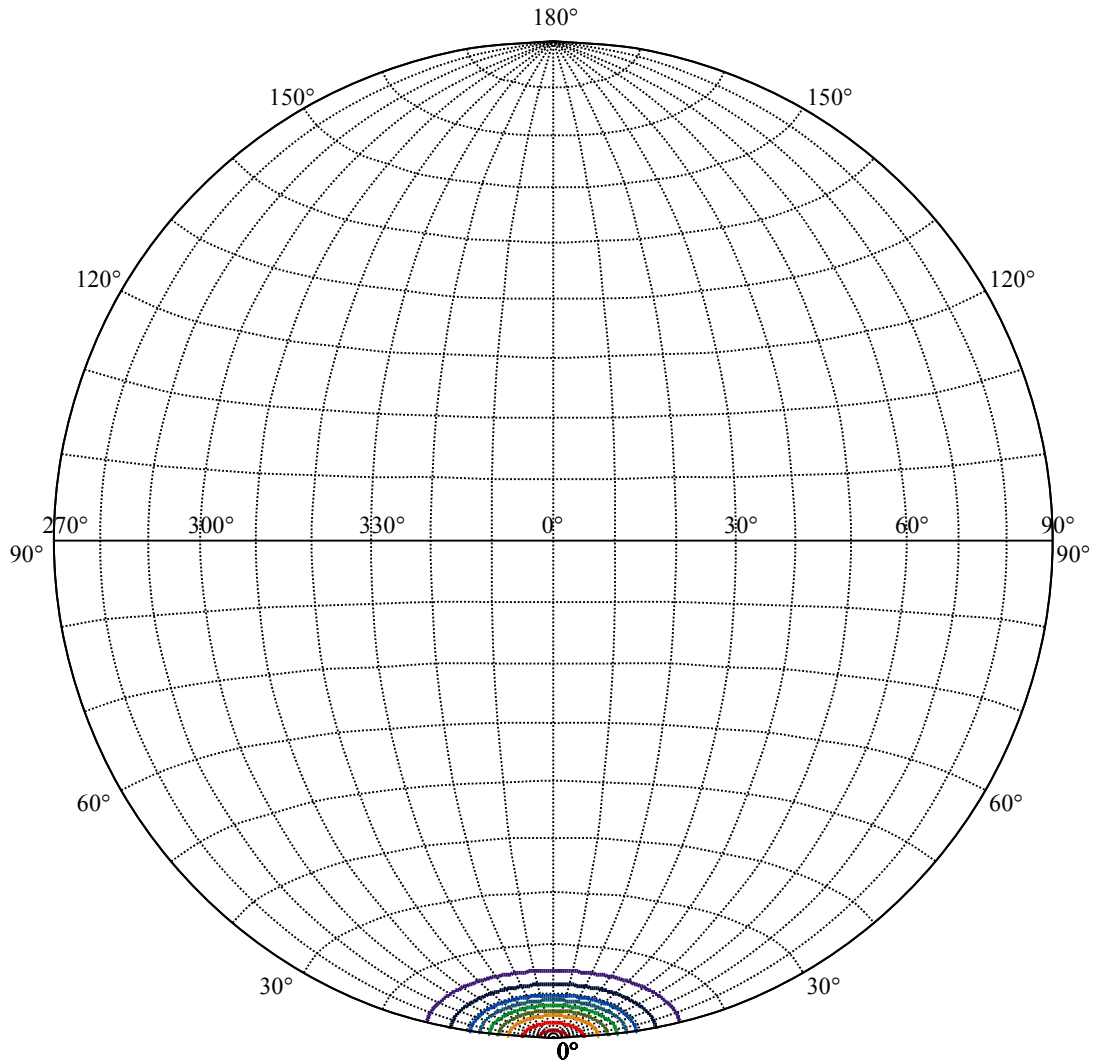
Field angle(10%Imax):C0/180Left:14.7 Right:14.7
:C90/270Left:14.7 Right:14.7

Beam Angle(50%Imax):C0/180Left:7.4 Right:7.4
:C90/270Left:7.4 Right:7.4





(10%I _{max}) 1379.88	—
(20%I _{max}) 2759.76	—
(30%I _{max}) 4139.64	—
(40%I _{max}) 5519.53	—
(50%I _{max}) 6899.41	—
(60%I _{max}) 8279.29	—
(70%I _{max}) 9659.17	—
(80%I _{max}) 11039.1	—
(90%I _{max}) 12418.9	—



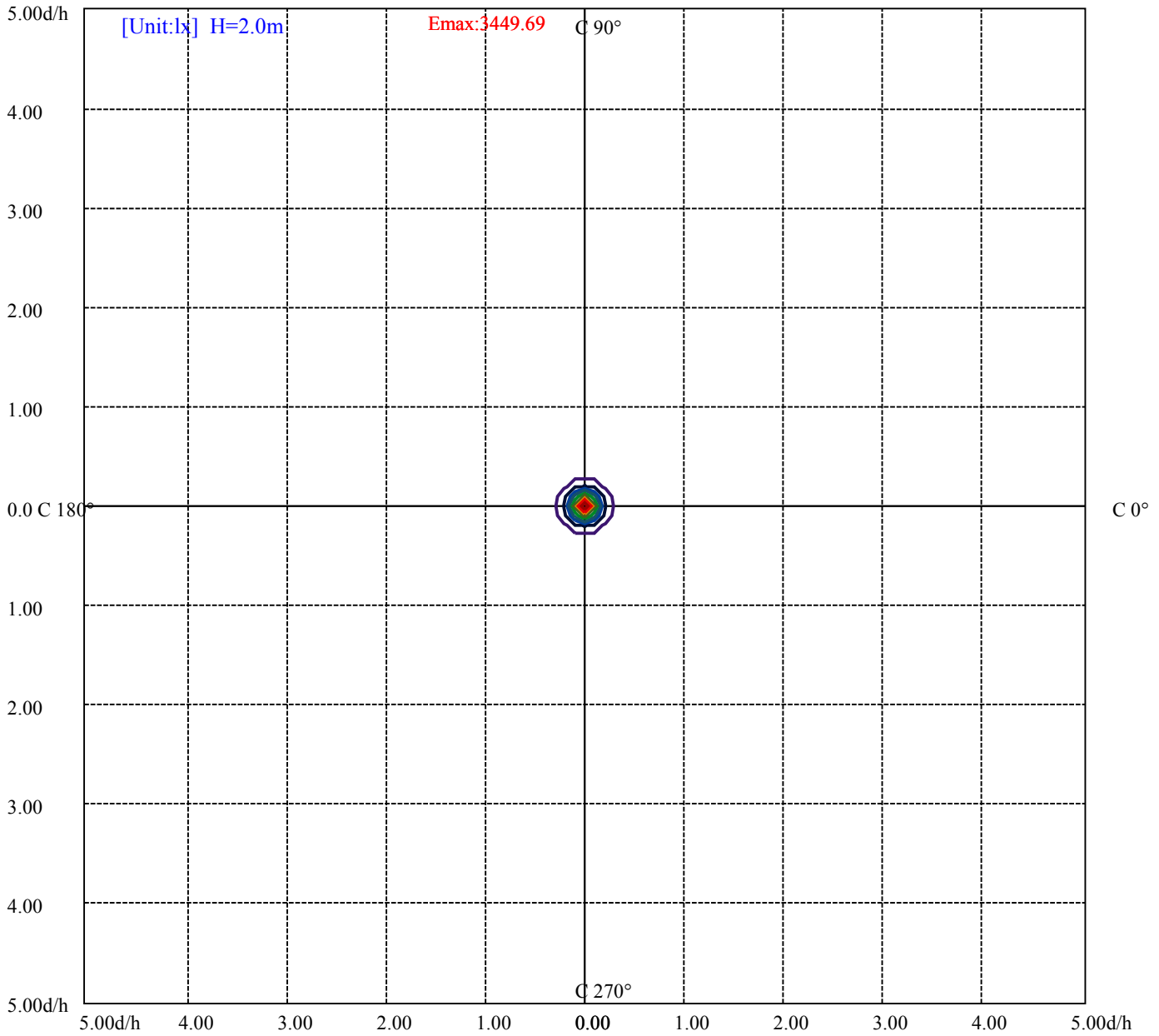
House

[Unit:cd]

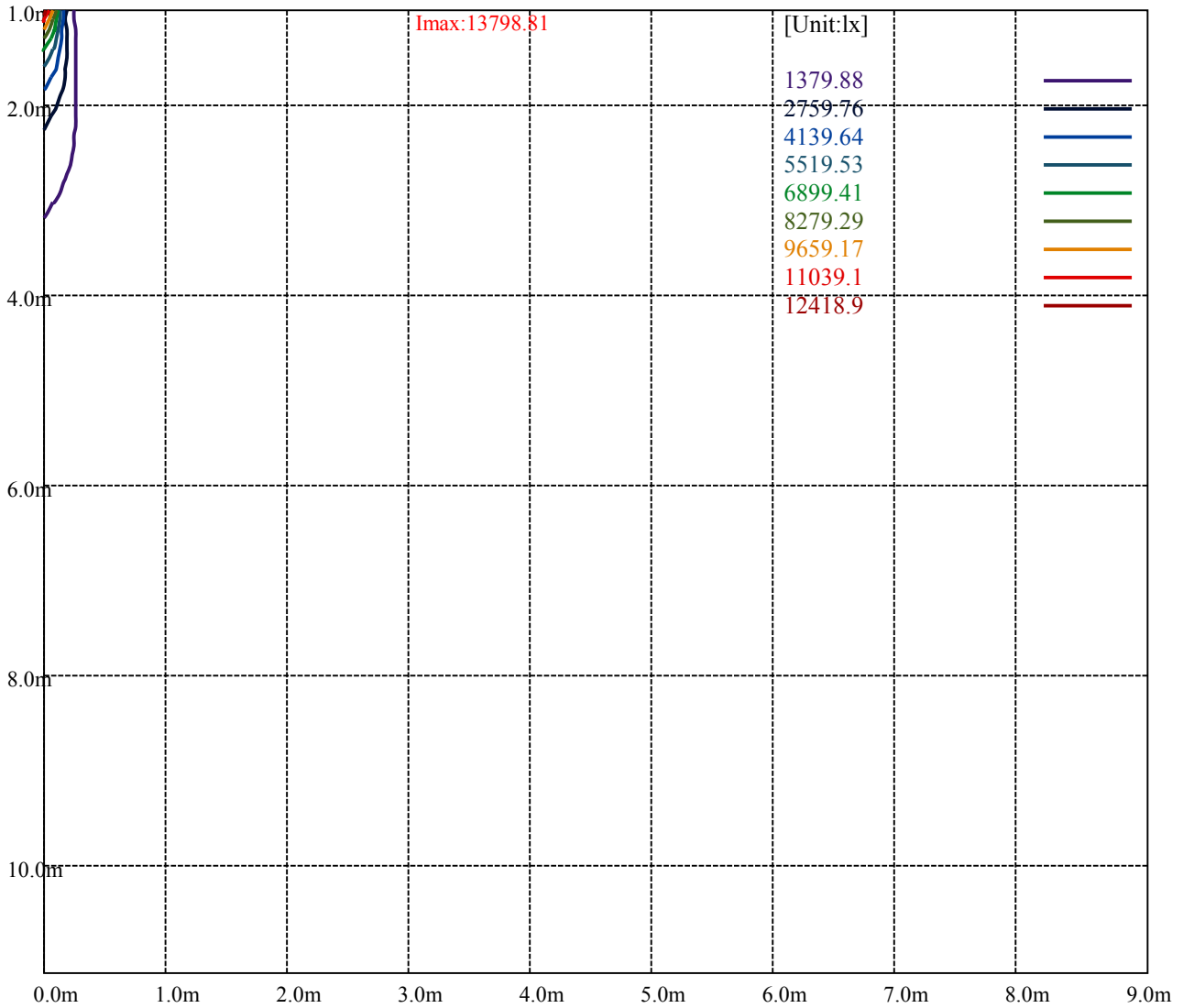
Road

Imax:13798.81

(10%Imax) 1379.88	—
(20%Imax) 2759.76	—
(30%Imax) 4139.64	—
(40%Imax) 5519.53	—
(50%Imax) 6899.41	—
(60%Imax) 8279.29	—
(70%Imax) 9659.17	—
(80%Imax) 11039.1	—
(90%Imax) 12418.9	—



(10%Emax) 344.9675	—
(20%Emax) 689.935	—
(30%Emax) 1034.902	—
(40%Emax) 1379.87	—
(50%Emax) 1724.838	—
(60%Emax) 2069.805	—
(70%Emax) 2414.772	—
(80%Emax) 2759.75	—
(90%Emax) 3104.7	—



Luminance Table

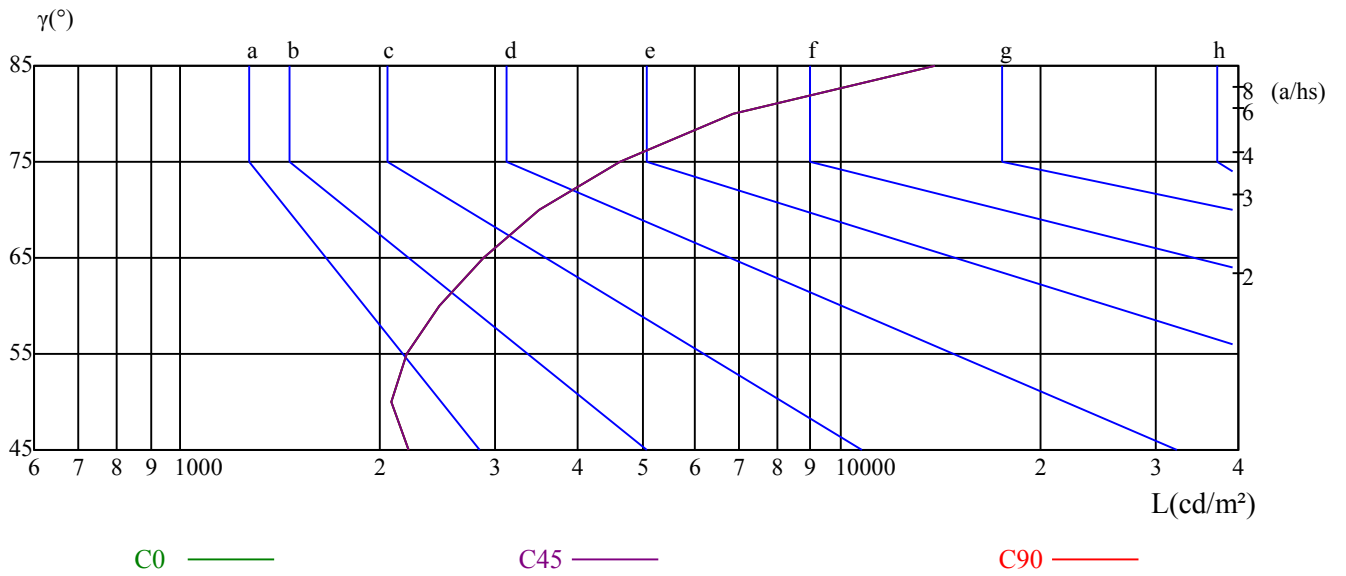
γ	45	50	55	60	65	70	75	80	85
C0	2212	2079	2205	2458	2868	3504	4617	6848	13854
C45	2212	2079	2205	2458	2868	3504	4617	6848	13854
C90	2212	2079	2205	2458	2868	3504	4617	6848	13854

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2868	2868	2868	4617	4617	4617	13854	13854	13854

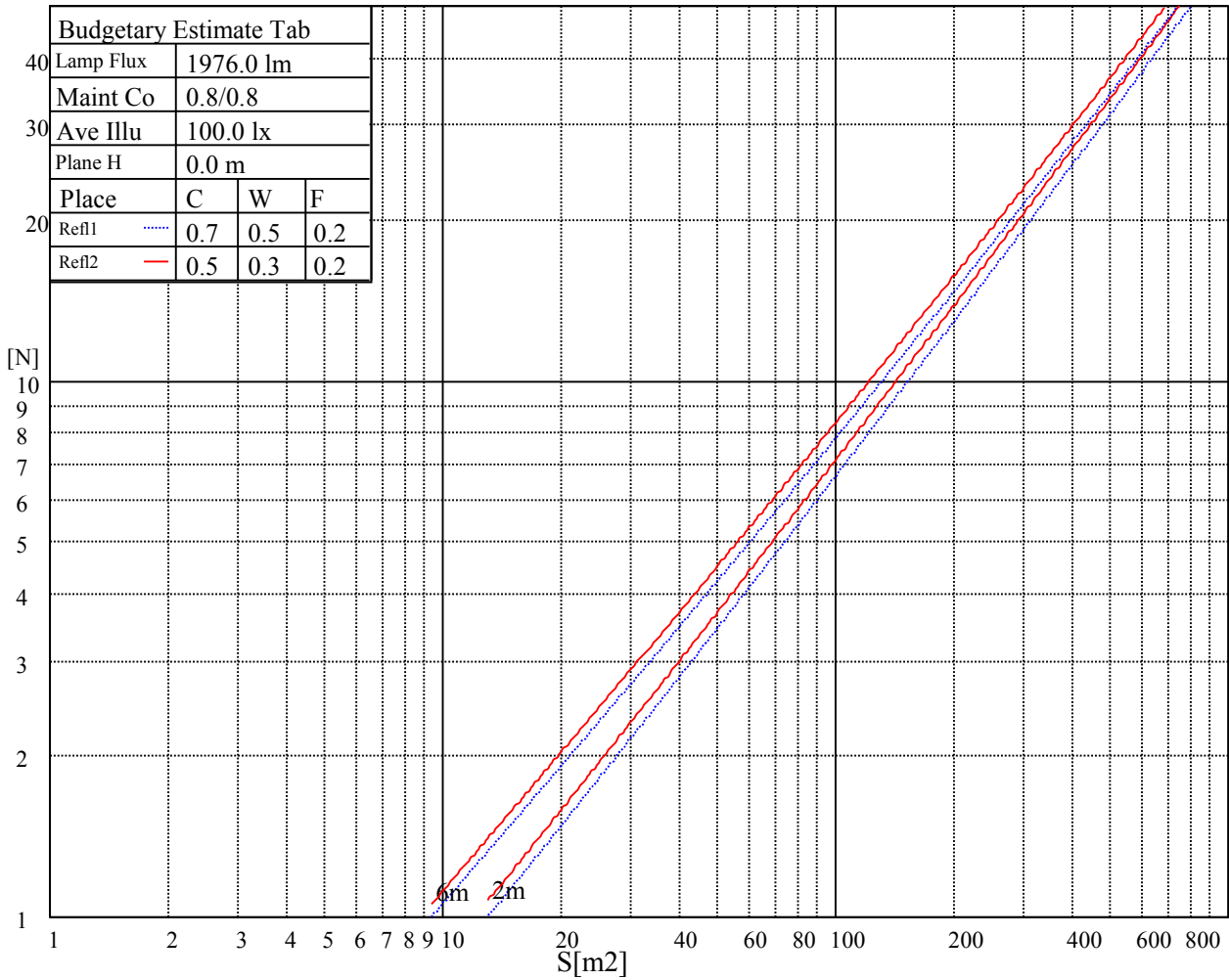
Glare Table

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

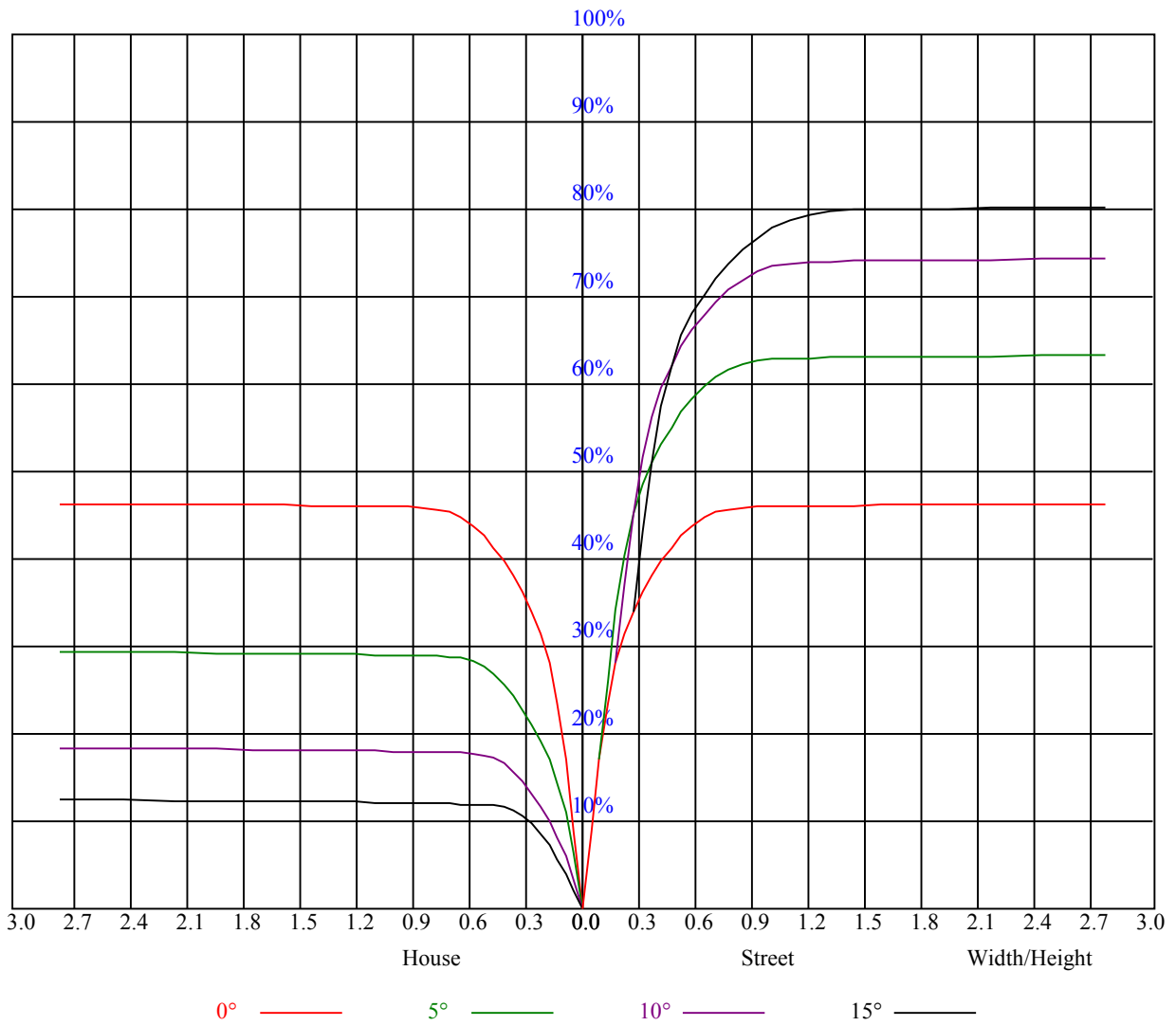
Luminance Limiting Curve



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	2.09	1.55	2.40	2.72	1.21	2.12	1.58	2.43	2.75
	3H	4.54	5.34	4.92	5.67	6.04	4.57	5.37	4.95	5.70	6.07
	4H	6.36	7.10	6.77	7.46	7.85	6.39	7.13	6.80	7.49	7.88
	6H	8.40	9.07	8.82	9.45	9.85	8.43	9.10	8.85	9.48	9.88
	8H	9.53	10.16	9.97	10.56	10.97	9.56	10.20	10.00	10.59	11.00
	12H	11.37	11.98	11.81	12.36	12.79	11.40	12.01	11.84	12.39	12.82
4H	2H	2.15	2.89	2.56	3.24	3.63	2.17	2.91	2.58	3.26	3.65
	3H	5.72	6.33	6.14	6.74	7.14	5.74	6.35	6.16	6.76	7.17
	4H	7.71	8.25	8.15	8.67	9.12	7.73	8.27	8.17	8.70	9.14
	6H	9.90	10.36	10.37	10.81	11.29	9.91	10.38	10.39	10.83	11.30
	8H	11.13	11.56	11.60	12.01	12.48	11.15	11.58	11.63	12.03	12.51
	12H	12.85	13.22	13.35	13.71	14.19	12.88	13.25	13.37	13.74	14.22
8H	4H	8.46	8.89	8.94	9.34	9.82	8.47	8.91	8.95	9.36	9.83
	6H	10.92	11.26	11.43	11.76	12.25	10.93	11.27	11.44	11.78	12.26
	8H	12.34	12.64	12.87	13.16	13.66	12.35	12.65	12.89	13.18	13.68
	12H	14.19	14.45	14.71	14.95	15.53	14.21	14.47	14.74	14.97	15.55
12H	4H	8.68	9.05	9.17	9.54	10.01	8.69	9.06	9.18	9.55	10.03
	6H	11.44	11.55	11.78	12.02	12.57	11.45	11.56	11.80	12.03	12.58
	8H	12.80	13.05	13.32	13.55	14.14	12.81	13.07	13.34	13.57	14.15
Variation with the observer position at spacings:											
S = 1.0H	5.6/-7.7					5.6/-7.7					
S = 1.5H	7.8/-5.7					7.8/-5.7					
S = 2.0H	9.1/-4.2					9.1/-4.2					
Standard tables:	BK3					BK3					
Uncorrected UGR	-0.4					-0.4					



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	1.14	1.14	1.14	1.12	1.12	1.12	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.96
1	1.02	0.99	0.96	1.00	0.97	0.95	0.96	0.94	0.92	0.93	0.91	0.89	0.89	0.88	0.86	0.84
2	0.97	0.93	0.90	0.96	0.92	0.89	0.92	0.89	0.87	0.90	0.87	0.85	0.87	0.85	0.83	0.81
3	0.93	0.88	0.85	0.91	0.87	0.84	0.89	0.85	0.82	0.87	0.84	0.81	0.85	0.82	0.80	0.78
4	0.89	0.84	0.80	0.88	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.80	0.77	0.76
5	0.86	0.81	0.77	0.85	0.80	0.77	0.83	0.79	0.76	0.82	0.78	0.76	0.80	0.77	0.75	0.74
6	0.83	0.78	0.74	0.82	0.77	0.74	0.80	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.71
7	0.80	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.71	0.70
8	0.77	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.68
9	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.66
10	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.71	0.68	0.65	0.64



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	13617.95	11575.53	5153.34	1532.65	953.87	841.45	741.28	509.21	181.59
45.0	13862.81	11208.23	4413.17	1440.82	933.83	820.30	718.46	450.22	64.11
90.0	13901.77	9372.29	3419.23	1099.34	891.37	803.05	694.03	372.31	25.32
135.0	13812.73	10095.20	3750.92	1313.93	911.57	814.18	702.32	417.94	48.92
180.0	13617.95	7982.11	2618.96	1090.44	859.21	778.68	656.52	273.31	16.97
225.0	13862.81	8900.36	2931.73	1106.24	873.51	791.59	679.62	316.21	21.98
270.0	13901.77	10328.94	3967.96	1319.50	906.01	808.06	710.11	427.40	60.49
315.0	13812.73	9913.78	3432.59	1096.67	896.99	800.77	688.58	394.07	38.18
360.0	13617.95	11575.53	5153.34	1532.65	953.87	841.45	741.28	509.21	181.59

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	10.74	8.35	7.85	7.57	7.46	7.35	7.29	7.29	7.40
45.0	10.13	8.24	7.74	7.57	7.40	7.35	7.23	7.23	7.29
90.0	9.24	8.01	7.62	7.46	7.35	7.23	7.23	7.18	7.18
135.0	9.79	8.07	7.68	7.46	7.40	7.23	7.23	7.18	7.18
180.0	8.63	8.07	7.62	7.46	7.35	7.35	7.29	7.23	7.35
225.0	8.96	8.07	7.68	7.46	7.35	7.29	7.29	7.29	7.35
270.0	9.41	8.18	7.74	7.46	7.35	7.29	7.29	7.23	7.51
315.0	9.24	8.07	7.62	7.40	7.35	7.23	7.29	7.23	7.51
360.0	10.74	8.35	7.85	7.57	7.46	7.35	7.29	7.29	7.40

C/γ(°)	90.0
0.0	7.12
45.0	7.23
90.0	7.18
135.0	7.12
180.0	7.12
225.0	7.23
270.0	7.18
315.0	7.12
360.0	7.12