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NATA

LumCAT: 3-2044-M	
Luminaire: 92.70.135.00	
Report No: NATA0100	Voltage(V): 35.7000
Test No: GC2018102515	Current(A): 0.6000
LampCAT: LUMILEDS LUXEON 1205	Power (W): 21.4200
Lamp flux(lm): 2979.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 84	Width(mm): 84
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2693.18
Efficiency(%): 90.41%
Lumens(lm)/Power(W): 128.29
Central intensity(cd): 9580.641
Maximum intensity(cd): 9580.641
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=26.0
 [C90/270]Total=26.0
Field angle(10%Imax): [C0/180]Total=56.9
 [C90/270]Total=56.9
Maximum s/h(1/2): C0_180=0.44 C90_270=0.44
Maximum s/h(1/4): C0_180=0.44 C90_270=0.44
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.24%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.825%

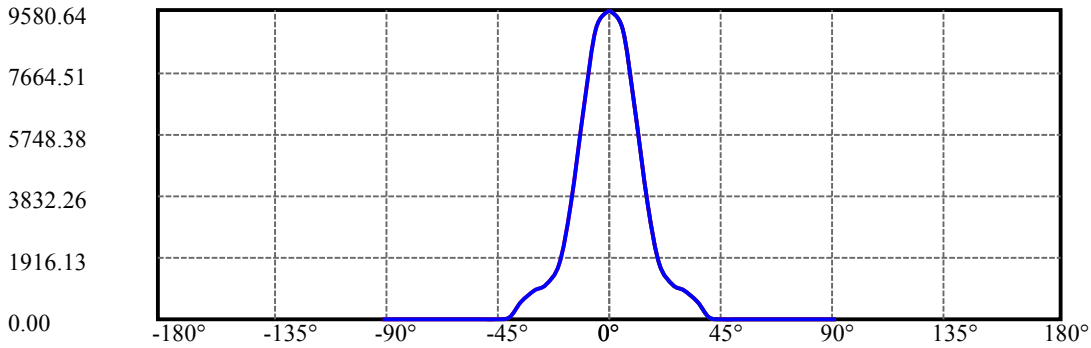
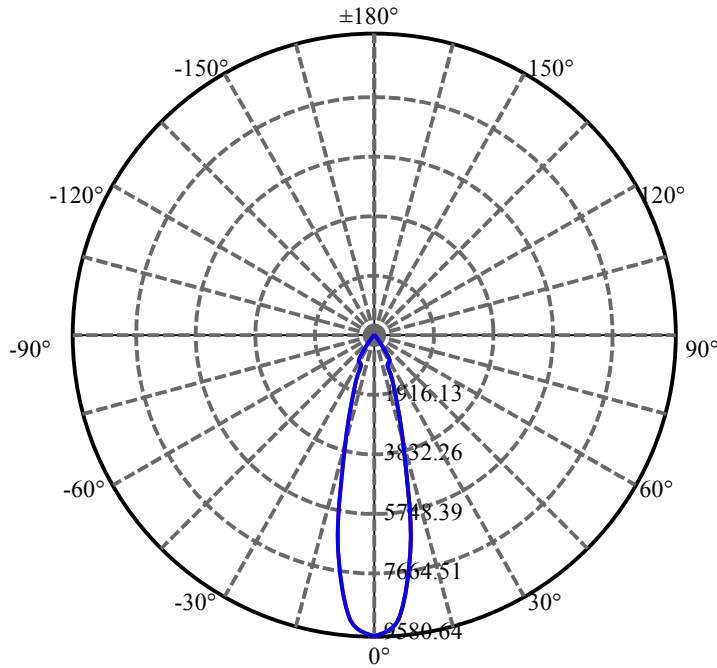
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9580.641	57.294	57.294	1.923%	2.127%
5.0	8986.992	429.338	486.633	14.412%	18.069%
10.0	6637.500	631.778	1118.41	21.208%	41.528%
15.0	3557.883	504.751	1623.161	16.944%	60.269%
20.0	1709.508	320.488	1943.65	10.758%	72.169%
25.0	1044.591	241.982	2185.632	8.123%	81.154%
30.0	919.139	251.907	2437.539	8.456%	90.508%
35.0	541.329	170.193	2607.732	5.713%	96.827%
40.0	86.217	30.377	2638.11	1.020%	97.955%
45.0	14.745	5.715	2643.825	.192%	98.168%
50.0	13.240	5.559	2649.384	.187%	98.374%
55.0	12.452	5.591	2654.975	.188%	98.582%
60.0	11.995	5.694	2660.669	.191%	98.793%
65.0	11.644	5.784	2666.454	.194%	99.008%
70.0	11.377	5.860	2672.314	.197%	99.225%
75.0	11.173	5.915	2678.229	.199%	99.445%
80.0	11.060	5.970	2684.199	.200%	99.667%
85.0	10.962	5.986	2690.185	.201%	99.889%
90.0	10.913	2.991	2693.176	.100%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2437.54	81.82%	90.51%
0-40	2638.11	88.56%	97.96%
0-60	2660.67	89.31%	98.79%
0-90	2690.19	90.30%	99.89%
0-120	2690.19	90.30%	99.89%
0-180	2693.18	90.41%	100.00%
60-90	35.21	1.18%	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%
0-24.36	2154.54	72.32%	80.00%

ZONAL LUMEN SUMMARY

0-10	1118.41
10-20	825.24
20-30	493.89
30-40	200.57
40-50	11.27
50-60	11.29
60-70	11.64
70-80	11.89
80-90	5.99
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: —————

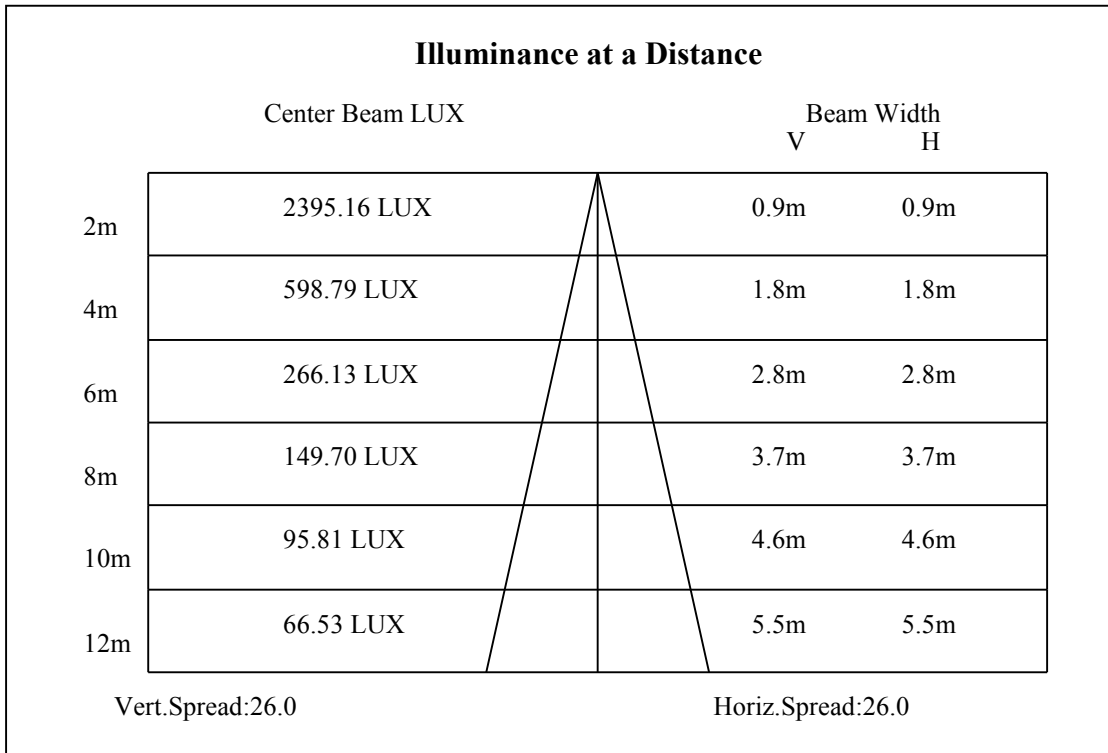
C90/C270: —————

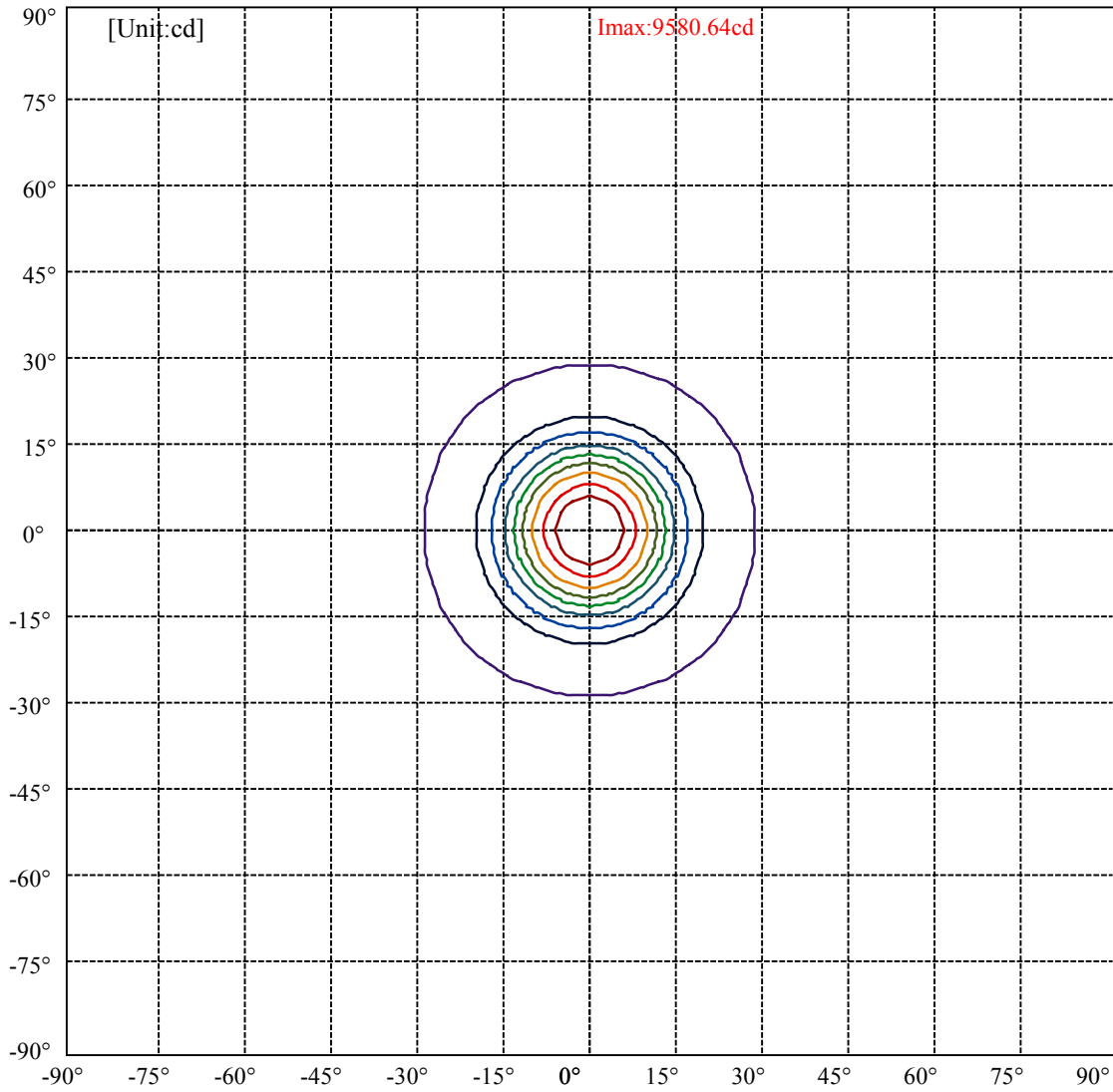
Field angle(10%Imax):C0/180Left:28.4 Right:28.4

:C90/270Left:28.4 Right:28.4

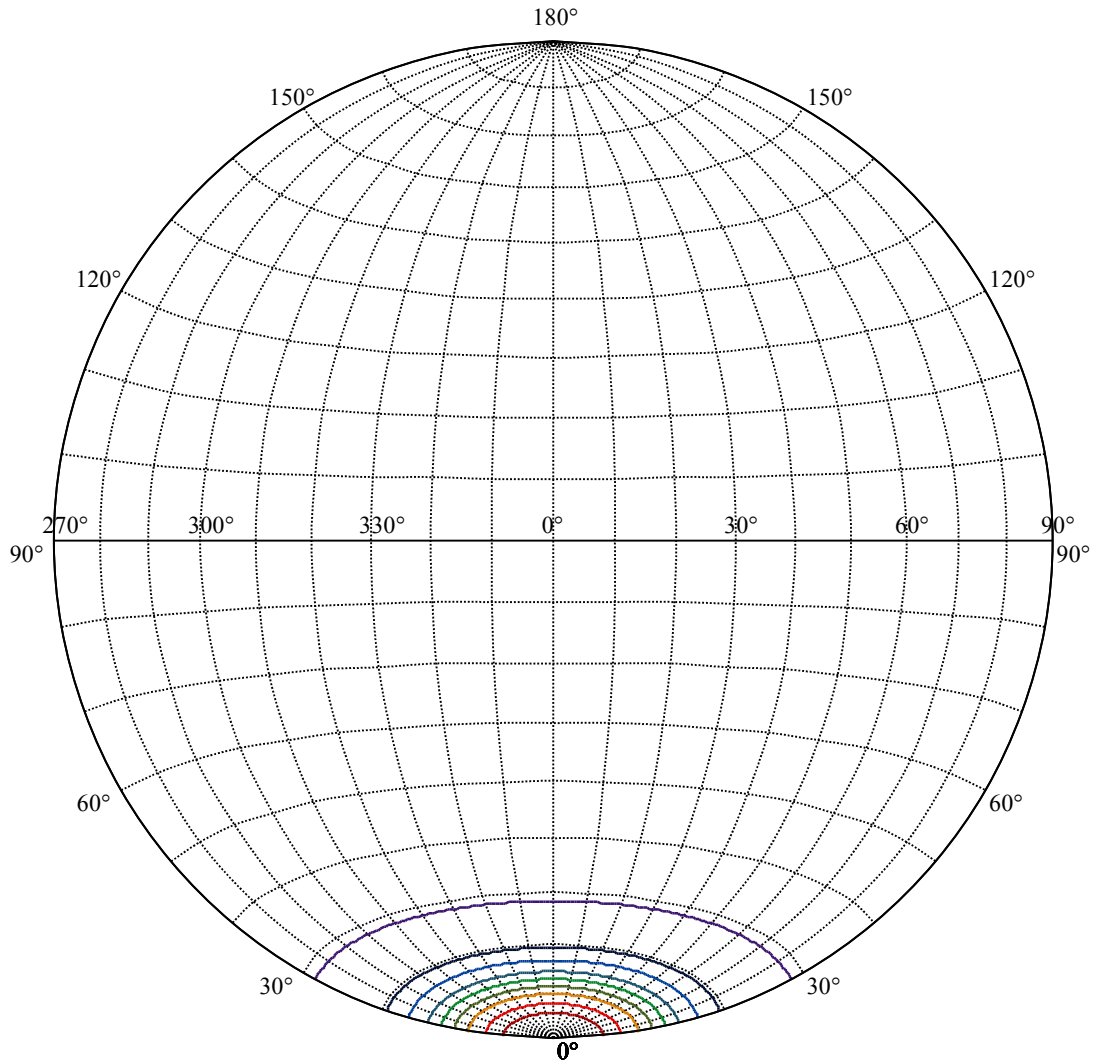
Beam Angle(50%Imax):C0/180Left:13.0 Right:13.0

:C90/270Left:13.0 Right:13.0





(10%Imax) 958.064	—
(20%Imax) 1916.13	—
(30%Imax) 2874.19	—
(40%Imax) 3832.26	—
(50%Imax) 4790.32	—
(60%Imax) 5748.38	—
(70%Imax) 6706.45	—
(80%Imax) 7664.51	—
(90%Imax) 8622.58	—



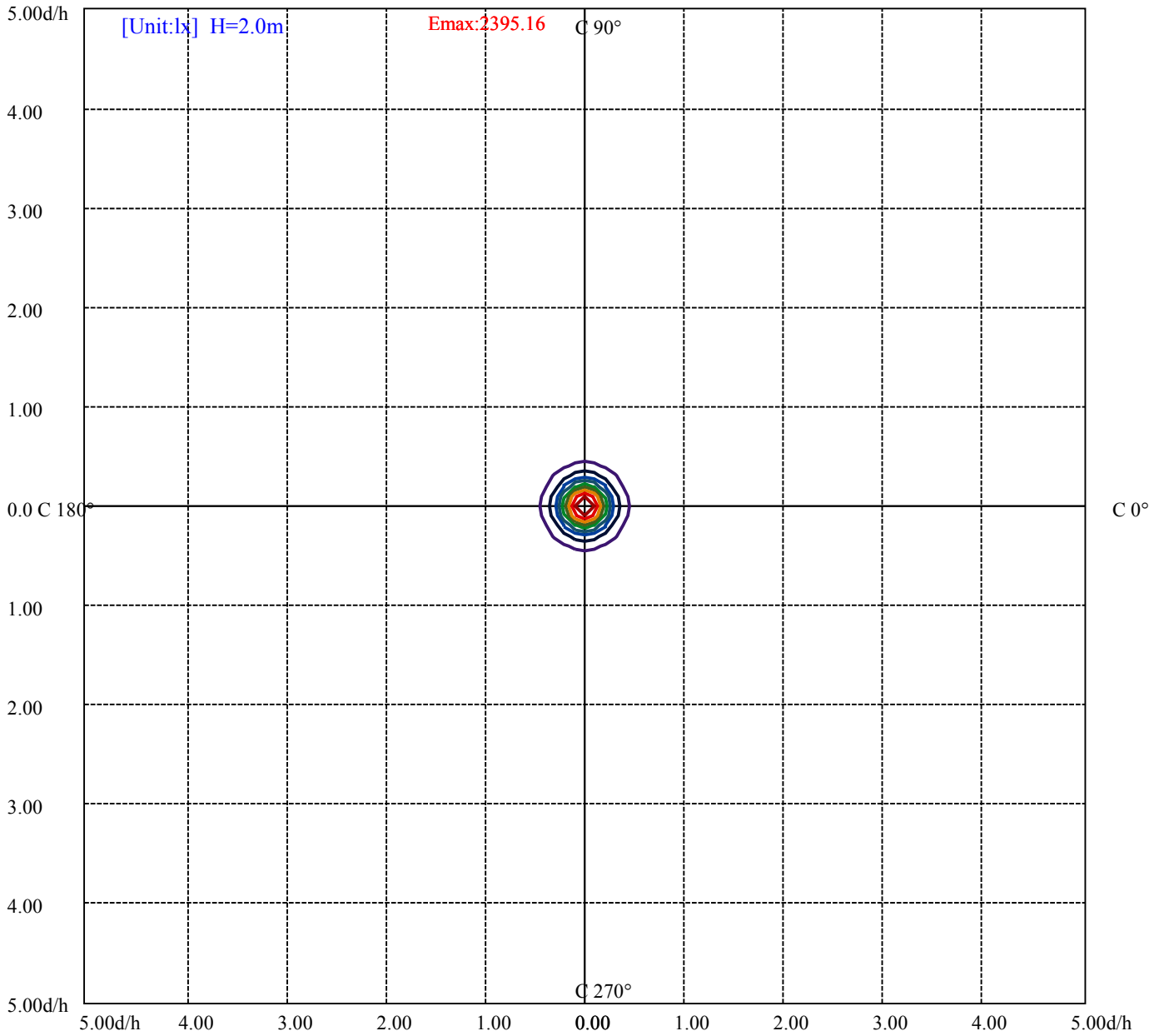
House

[Unit:cd]

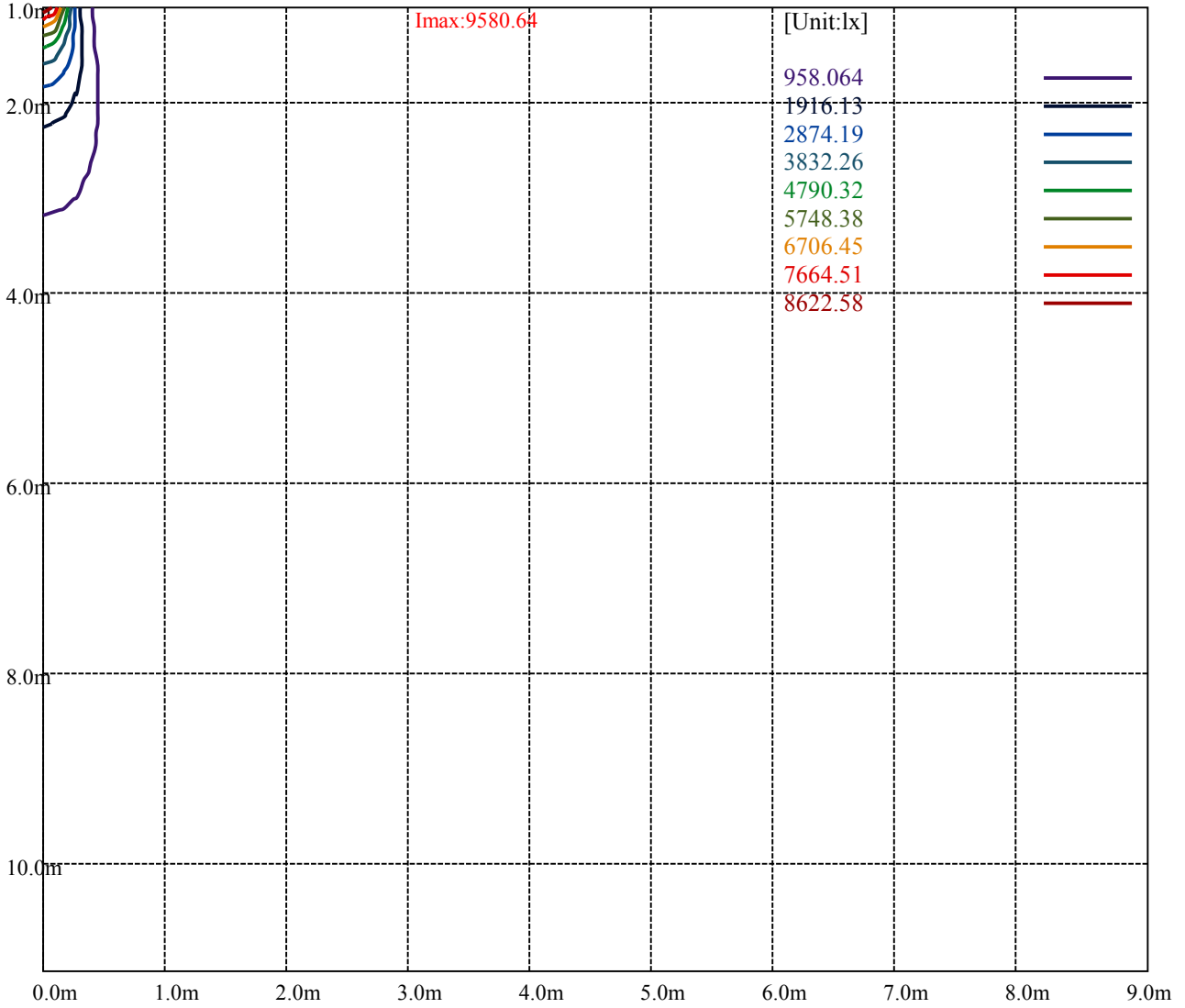
Road

Imax:9580.64

(10%Imax) 958.064	—
(20%Imax) 1916.13	—
(30%Imax) 2874.19	—
(40%Imax) 3832.26	—
(50%Imax) 4790.32	—
(60%Imax) 5748.38	—
(70%Imax) 6706.45	—
(80%Imax) 7664.51	—
(90%Imax) 8622.58	—



- (10%E_{max}) 239.5155
- (20%E_{max}) 479.03
- (30%E_{max}) 718.5475
- (40%E_{max}) 958.0625
- (50%E_{max}) 1197.578
- (60%E_{max}) 1437.093
- (70%E_{max}) 1676.61
- (80%E_{max}) 1916.125
- (90%E_{max}) 2155.64



Luminance Table

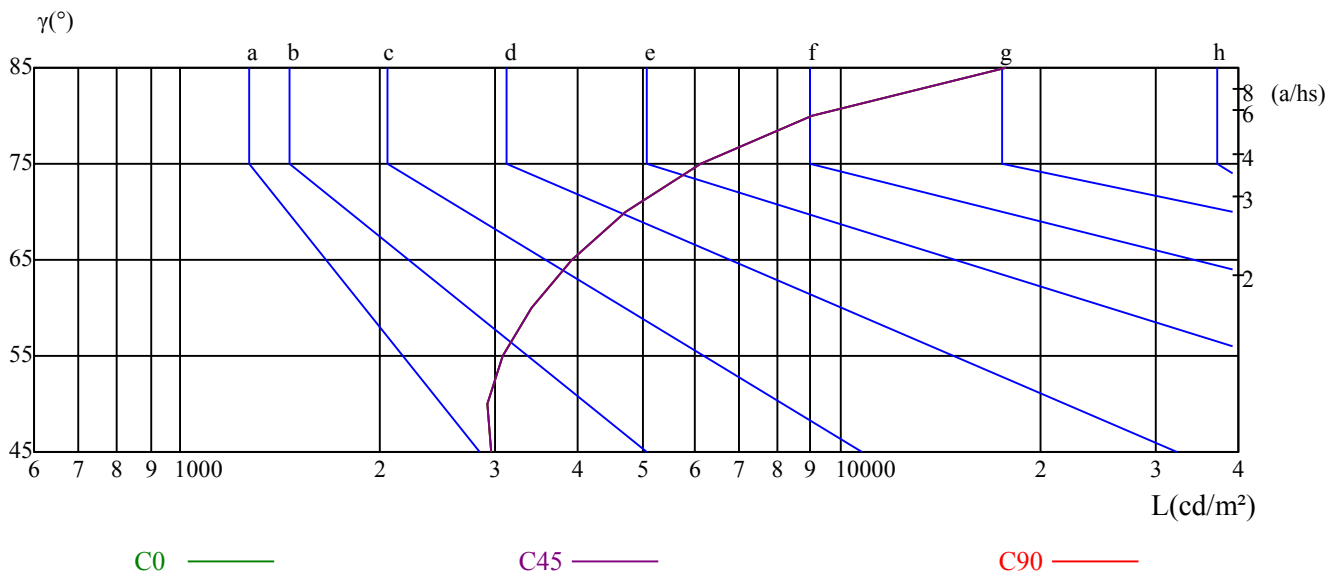
γ	45	50	55	60	65	70	75	80	85
C0	2955	2919	3077	3400	3905	4714	6118	9027	17825
C45	2955	2919	3077	3400	3905	4714	6118	9027	17825
C90	2955	2919	3077	3400	3905	4714	6118	9027	17825

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3905	3905	3905	6118	6118	6118	17825	17825	17825

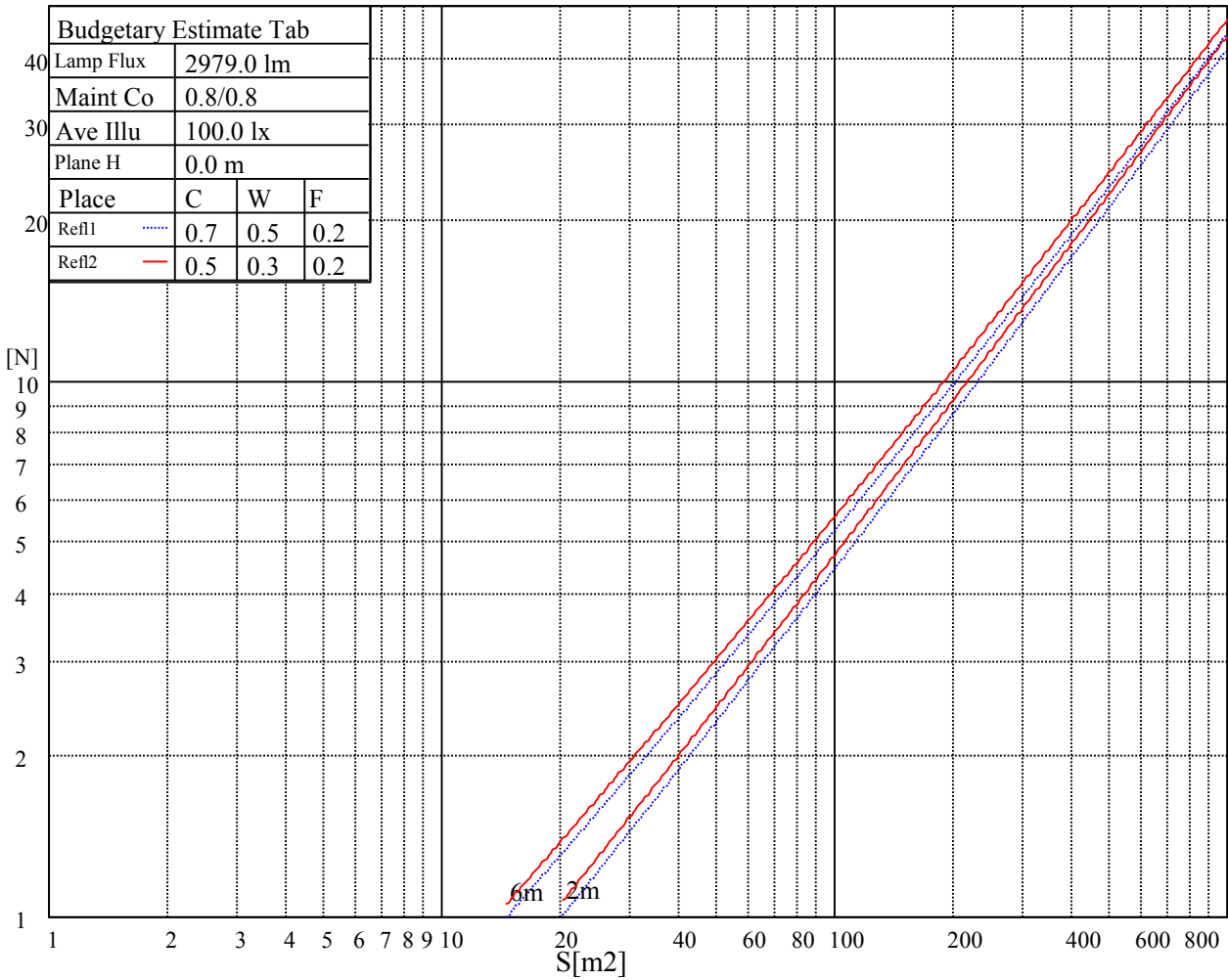
Glare Table

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

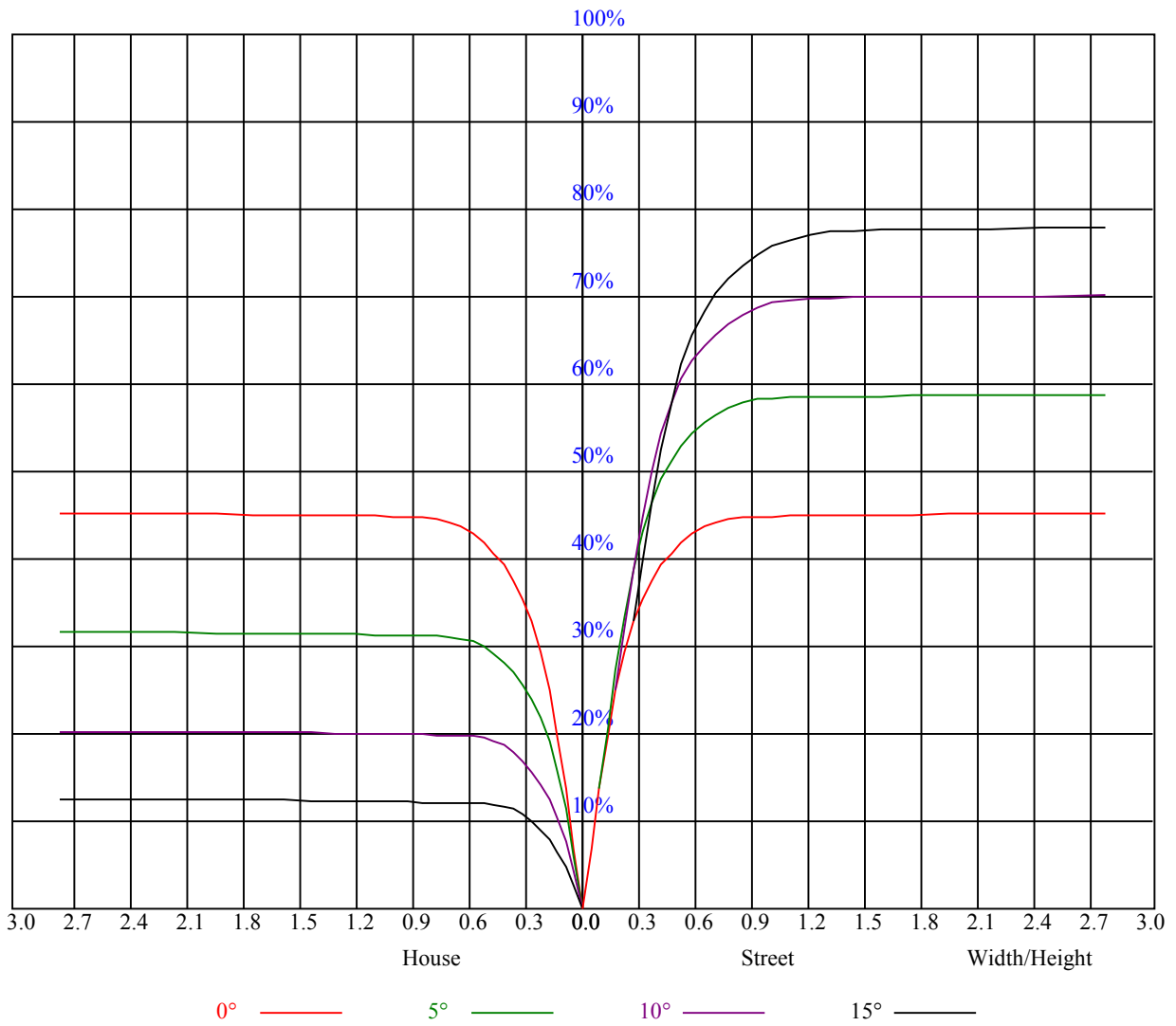
Luminance Limiting Curve



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	1.27	2.18	1.64	2.49	2.81	1.27	2.18	1.64	2.49	2.81
	3H	4.49	5.30	4.88	5.63	6.00	4.47	5.27	4.85	5.60	5.97
	4H	6.24	6.98	6.65	7.34	7.73	6.21	6.95	6.62	7.30	7.70
	6H	8.20	8.88	8.62	9.26	9.65	8.18	8.86	8.60	9.23	9.63
	8H	9.29	9.92	9.72	10.32	10.73	9.27	9.90	9.71	10.30	10.71
	12H	11.05	11.65	11.48	12.04	12.47	11.04	11.65	11.47	12.03	12.46
4H	2H	2.18	2.92	2.59	3.28	3.67	2.18	2.92	2.59	3.28	3.67
	3H	5.63	6.24	6.05	6.65	7.06	5.61	6.22	6.03	6.63	7.04
	4H	7.54	8.09	7.98	8.51	8.96	7.52	8.06	7.96	8.49	8.94
	6H	9.67	10.13	10.14	10.58	11.06	9.65	10.12	10.13	10.57	11.05
	8H	10.85	11.29	11.33	11.74	12.22	10.84	11.28	11.32	11.73	12.20
8H	12H	12.51	12.89	13.01	13.38	13.86	12.51	12.88	13.00	13.37	13.85
	4H	8.27	8.70	8.74	9.15	9.63	8.25	8.68	8.72	9.13	9.61
	6H	10.66	11.00	11.17	11.51	12.00	10.65	11.00	11.17	11.50	11.99
	8H	12.04	12.34	12.58	12.87	13.36	12.03	12.33	12.57	12.86	13.36
12H	12H	13.84	14.10	14.37	14.60	15.18	13.83	14.09	14.36	14.59	15.17
	4H	8.47	8.85	8.97	9.34	9.81	8.45	8.83	8.95	9.32	9.79
	6H	11.18	11.28	11.52	11.76	12.31	11.17	11.28	11.51	11.75	12.30
	8H	12.49	12.75	13.01	13.25	13.83	12.48	12.74	13.01	13.24	13.82
Variation with the observer position at spacings:											
S = 1.0H	5.4/-6.8					5.4/-6.8					
S = 1.5H	7.5/-5.1					7.5/-5.1					
S = 2.0H	8.7/-3.7					8.7/-3.7					
Standard tables:	BK3					BK3					
Uncorrected UGR	0.1					0.1					



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	1.01	0.99	0.96	0.99	0.97	0.95	0.95	0.94	0.92	0.92	0.91	0.89	0.89	0.88	0.87	0.85
2	0.96	0.93	0.90	0.95	0.91	0.89	0.92	0.89	0.87	0.89	0.87	0.85	0.86	0.85	0.83	0.82
3	0.92	0.88	0.85	0.90	0.87	0.84	0.88	0.85	0.83	0.86	0.83	0.81	0.84	0.82	0.80	0.79
4	0.88	0.84	0.80	0.87	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.82	0.79	0.77	0.76
5	0.85	0.80	0.77	0.84	0.80	0.77	0.82	0.79	0.76	0.81	0.78	0.75	0.79	0.77	0.75	0.74
6	0.81	0.77	0.74	0.81	0.77	0.74	0.80	0.76	0.73	0.78	0.75	0.73	0.77	0.75	0.72	0.71
7	0.79	0.74	0.71	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
8	0.76	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.67
9	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.71	0.69	0.66	0.65
10	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.70	0.67	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	9565.88	9379.69	7329.94	4301.44	2109.38	1113.75	947.81	688.50	309.94
45.0	9586.13	9060.19	6826.50	3945.38	1812.38	1055.81	922.50	589.50	53.49
90.0	9572.06	8662.50	6107.06	3081.94	1492.88	1008.62	900.11	410.12	27.62
135.0	9598.50	8938.69	6579.56	3429.00	1659.94	1043.44	915.75	504.56	36.68
180.0	9565.88	8535.94	5806.13	2815.88	1425.38	988.65	889.54	395.49	27.34
225.0	9586.13	8964.00	6388.31	3225.94	1590.75	1025.04	913.11	513.62	32.40
270.0	9572.06	9243.00	7417.69	4059.56	1901.25	1081.69	939.38	663.19	158.34
315.0	9598.50	9111.94	6644.81	3603.94	1684.13	1039.73	924.92	565.65	43.93
360.0	9565.88	9379.69	7329.94	4301.44	2109.38	1113.75	947.81	688.50	309.94

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	16.48	13.44	12.60	12.09	11.70	11.42	11.19	11.08	10.97
45.0	14.34	13.22	12.43	11.98	11.64	11.36	11.19	11.08	10.97
90.0	14.06	13.05	12.26	11.93	11.59	11.31	11.14	11.03	10.91
135.0	14.29	13.16	12.43	11.98	11.59	11.36	11.14	11.03	10.97
180.0	13.95	13.05	12.32	11.93	11.59	11.31	11.14	11.03	10.97
225.0	14.40	13.11	12.43	11.98	11.64	11.42	11.19	11.08	10.97
270.0	15.58	13.56	12.66	12.09	11.76	11.48	11.25	11.14	10.97
315.0	14.85	13.33	12.49	11.98	11.64	11.36	11.14	11.03	10.97
360.0	16.48	13.44	12.60	12.09	11.70	11.42	11.19	11.08	10.97

C/γ(°)	90.0
0.0	10.97
45.0	10.91
90.0	10.91
135.0	10.91
180.0	10.91
225.0	10.91
270.0	10.91
315.0	10.86
360.0	10.97