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NATA

LumCAT: 4-2267-M
Luminaire: 92.70.135.00
Report No: NATA0100
Test No: GC2018102519
LampCAT: LUMILEDS LUXEON 1205
Lamp flux(lm): 2979.0
Number of Lamps: 1
Length(mm): 100
Phm Type: C

Voltage(V): 35.7000
Current(A): 0.6000
Power (W): 21.4200
PF: 0.0000
Ballast type: DC
Width(mm): 100
Height(mm): 0

Photometric Results

Lumens(lm): 2678.65
Efficiency(%): 89.92%
Lumens(lm)/Power(W): 126.68
Central intensity(cd): 6242.766
Maximum intensity(cd): 6242.766
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=33.7
 [C90/270]Total=33.7
Field angle(10%Imax): [C0/180]Total=69.4
 [C90/270]Total=69.4
Maximum s/h(1/2): C0_180=0.55 C90_270=0.55
Maximum s/h(1/4): C0_180=0.59 C90_270=0.59
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.09%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.376%

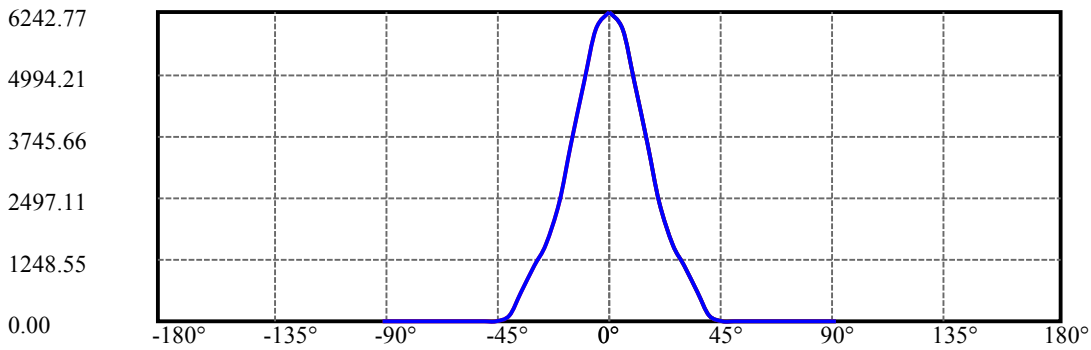
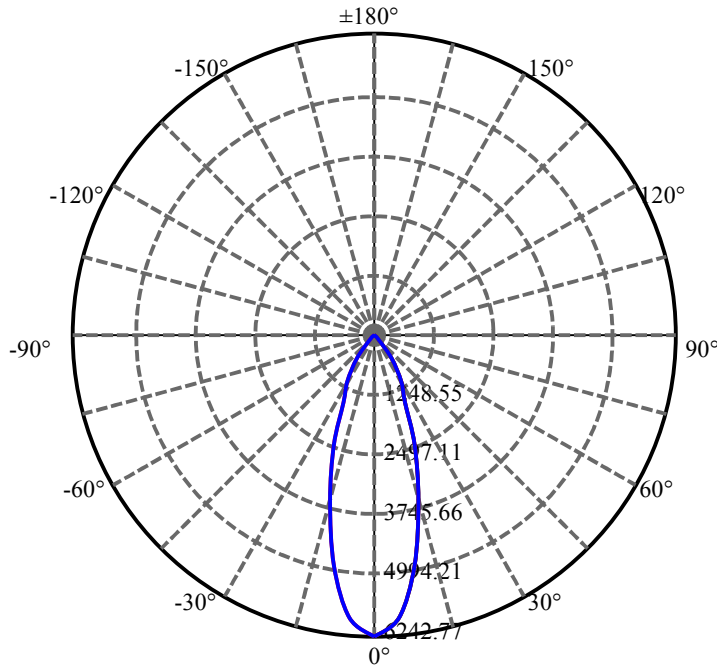
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6242.766	37.333	37.333	1.253%	1.394%
5.0	5879.953	280.905	318.238	9.430%	11.881%
10.0	4852.758	461.900	780.138	15.505%	29.124%
15.0	3556.266	504.522	1284.66	16.936%	47.959%
20.0	2393.930	448.800	1733.46	15.065%	64.714%
25.0	1539.352	356.595	2090.055	11.970%	78.026%
30.0	1111.732	304.691	2394.746	10.228%	89.401%
35.0	594.745	186.987	2581.733	6.277%	96.382%
40.0	106.425	37.497	2619.23	1.259%	97.782%
45.0	15.884	6.156	2625.387	.207%	98.012%
50.0	13.620	5.719	2631.105	.192%	98.225%
55.0	12.382	5.560	2636.665	.187%	98.433%
60.0	11.707	5.557	2642.222	.187%	98.640%
65.0	11.412	5.669	2647.891	.190%	98.852%
70.0	11.468	5.907	2653.798	.198%	99.072%
75.0	16.123	8.536	2662.335	.287%	99.391%
80.0	13.170	7.109	2669.444	.239%	99.656%
85.0	11.292	6.166	2675.61	.207%	99.886%
90.0	11.095	3.041	2678.651	.102%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2394.75	80.39%	89.40%
0-40	2619.23	87.92%	97.78%
0-60	2642.22	88.69%	98.64%
0-90	2675.61	89.82%	99.89%
0-120	2675.61	89.82%	99.89%
0-180	2678.65	89.92%	100.00%
60-90	38.94	1.31%	1.45%
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%
0-25.87	2142.92	71.93%	80.00%

ZONAL LUMEN SUMMARY

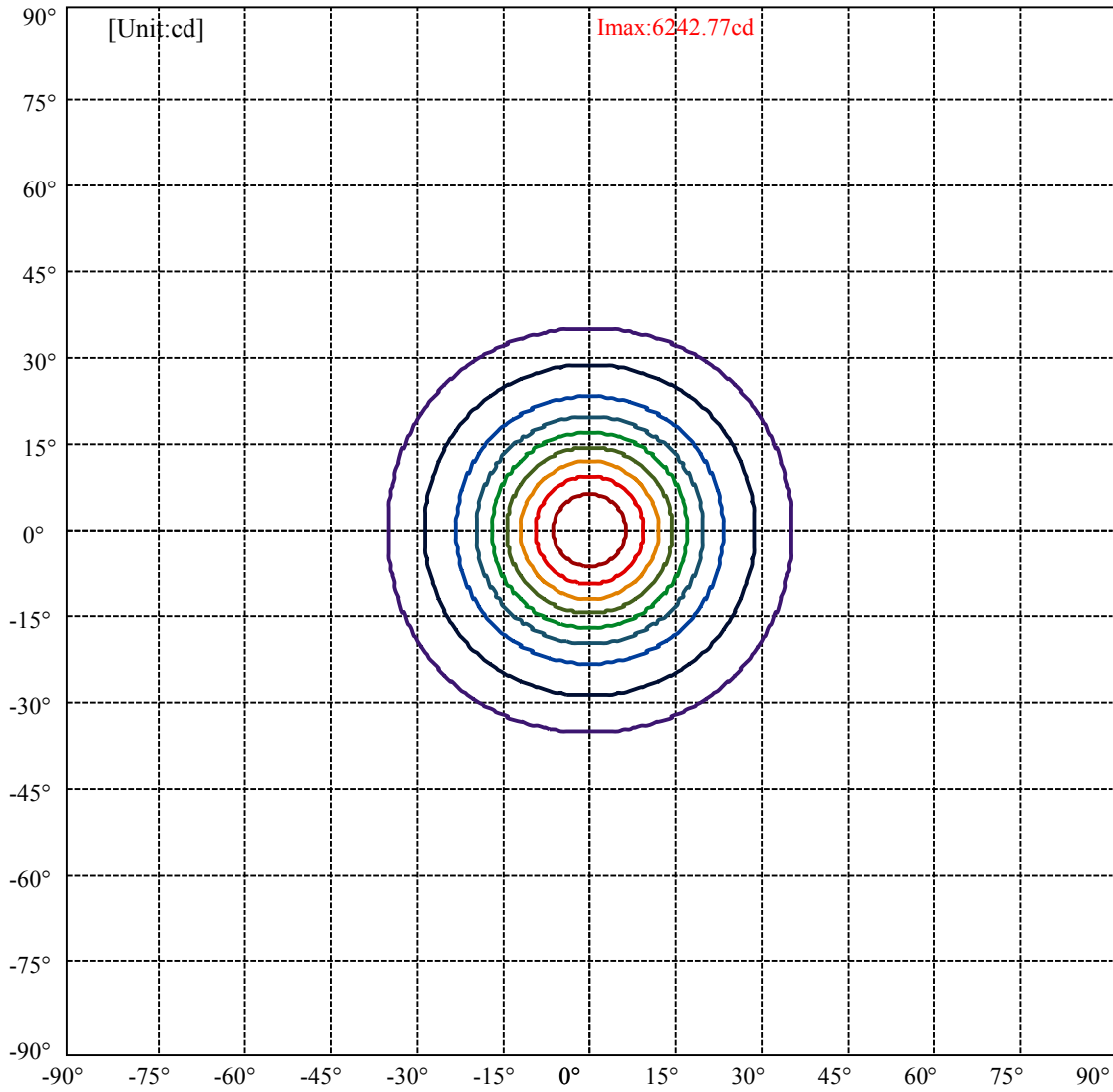
0-10	780.14
10-20	953.32
20-30	661.29
30-40	224.48
40-50	11.88
50-60	11.12
60-70	11.58
70-80	15.65
80-90	6.17
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



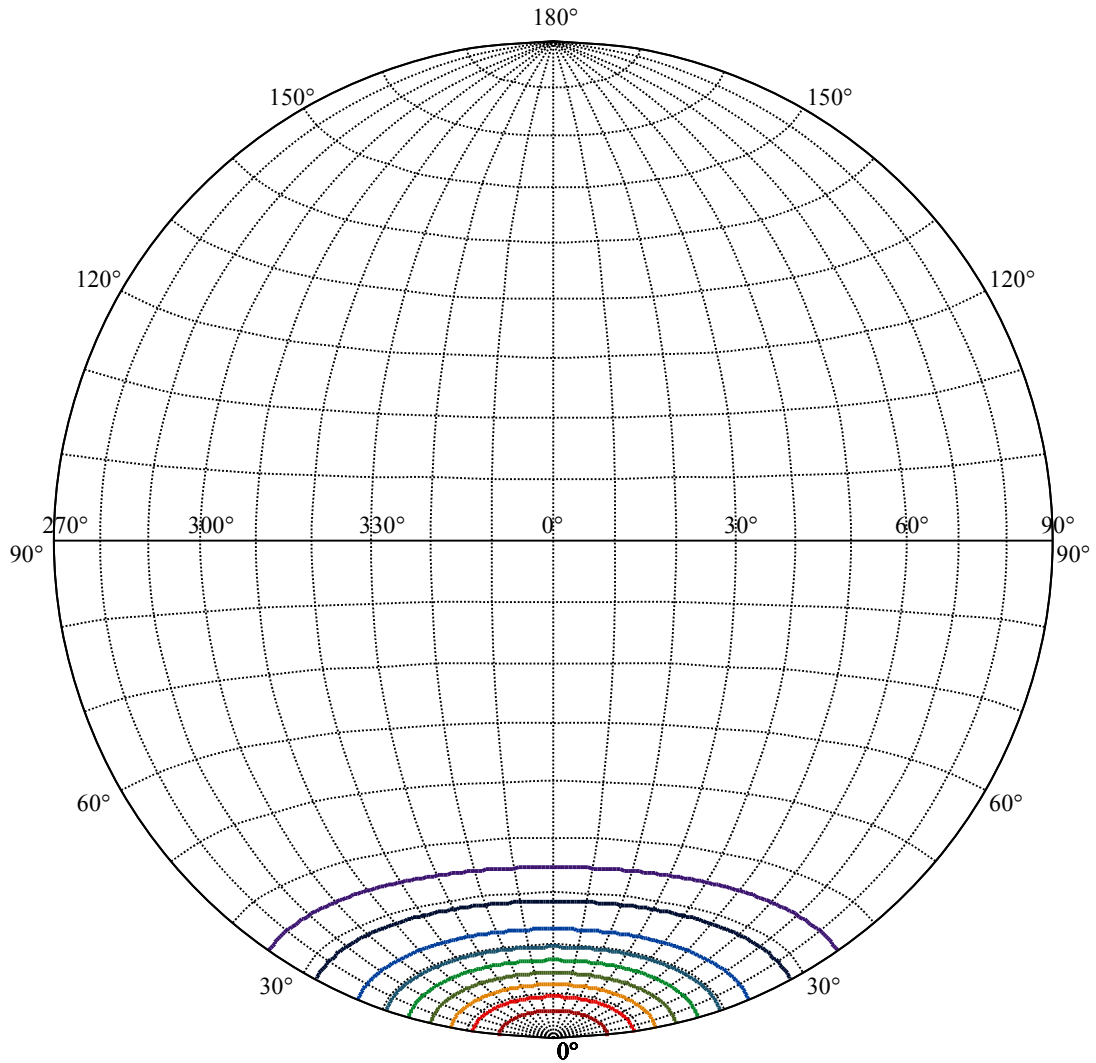
C0(Max): —————
C0/C180: —————
C90/C270: —————

Field angle(10%Imax):C0/180Left:34.7 Right:34.7
:C90/270Left:34.7 Right:34.7

Beam Angle(50%Imax):C0/180Left:16.9 Right:16.9
:C90/270Left:16.9 Right:16.9



(10%Imax) 624.277	—
(20%Imax) 1248.55	—
(30%Imax) 1872.83	—
(40%Imax) 2497.11	—
(50%Imax) 3121.38	—
(60%Imax) 3745.66	—
(70%Imax) 4369.94	—
(80%Imax) 4994.21	—
(90%Imax) 5618.49	—



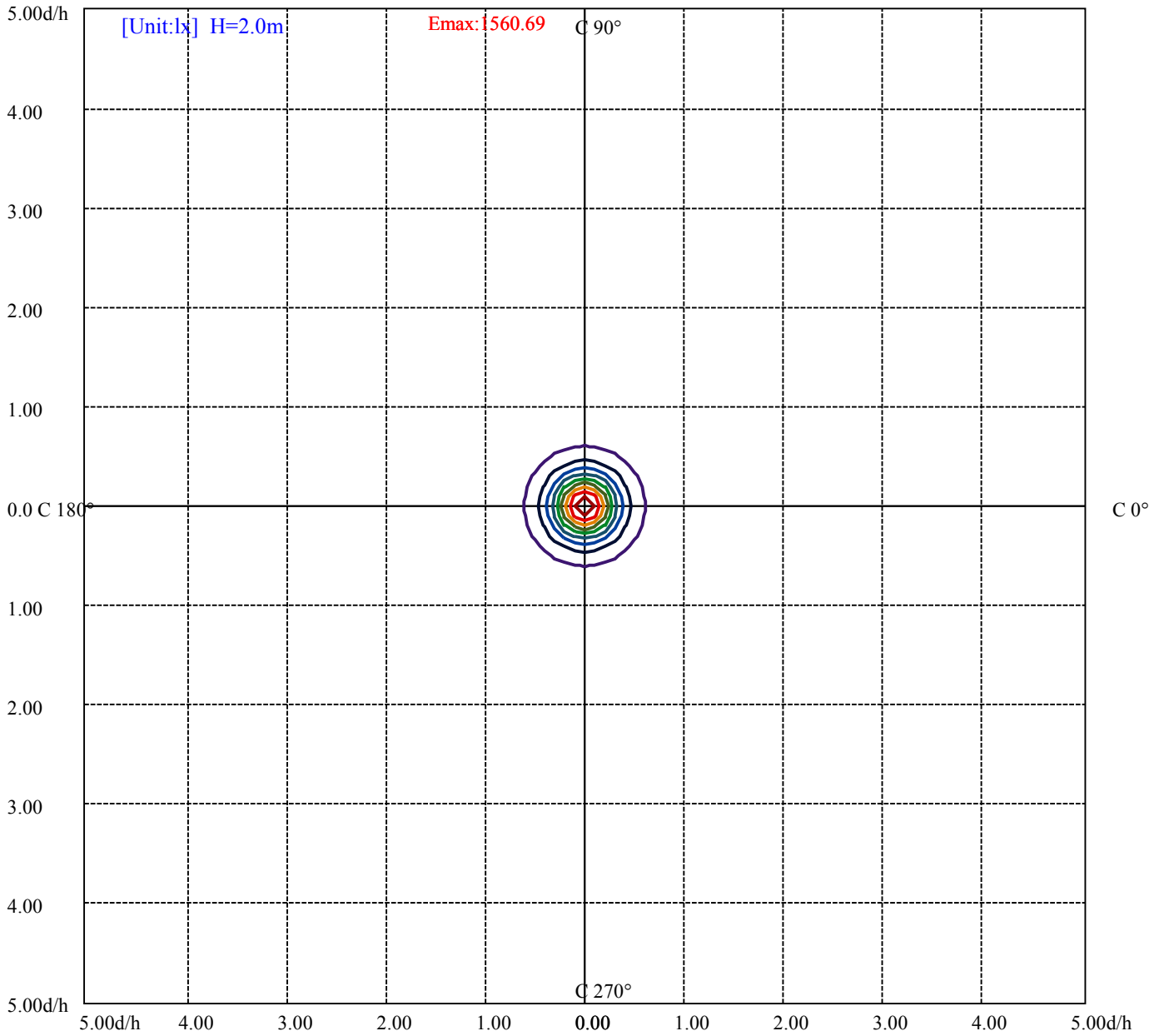
House

[Unit:cd]

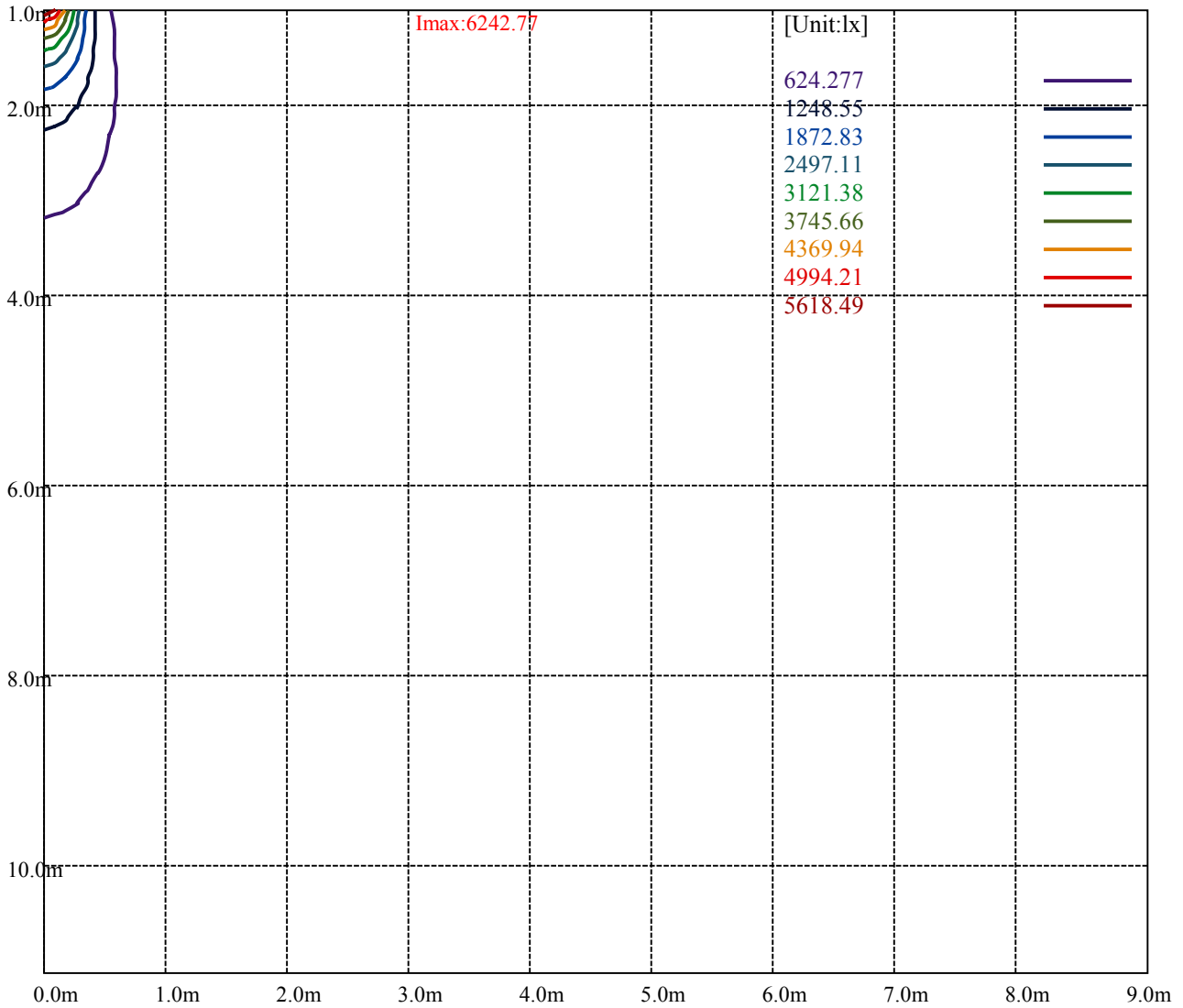
Road

Imax:6242.77

(10%Imax) 624.277	—
(20%Imax) 1248.55	—
(30%Imax) 1872.83	—
(40%Imax) 2497.11	—
(50%Imax) 3121.38	—
(60%Imax) 3745.66	—
(70%Imax) 4369.94	—
(80%Imax) 4994.21	—
(90%Imax) 5618.49	—



- (10%Emax) 156.069
- (20%Emax) 312.1375
- (30%Emax) 468.2075
- (40%Emax) 624.275
- (50%Emax) 780.345
- (60%Emax) 936.4125
- (70%Emax) 1092.483
- (80%Emax) 1248.55
- (90%Emax) 1404.62



Luminance Table

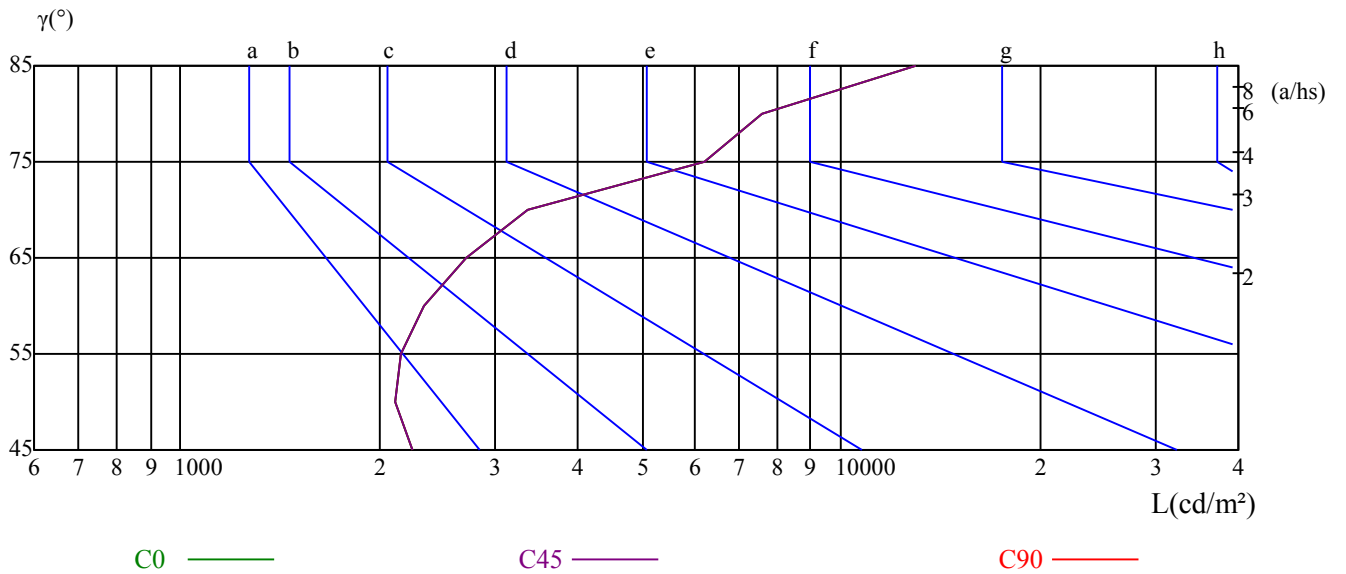
γ	45	50	55	60	65	70	75	80	85
C0	2246	2119	2159	2341	2700	3353	6229	7584	12956
C45	2246	2119	2159	2341	2700	3353	6229	7584	12956
C90	2246	2119	2159	2341	2700	3353	6229	7584	12956

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2700	2700	2700	6229	6229	6229	12956	12956	12956

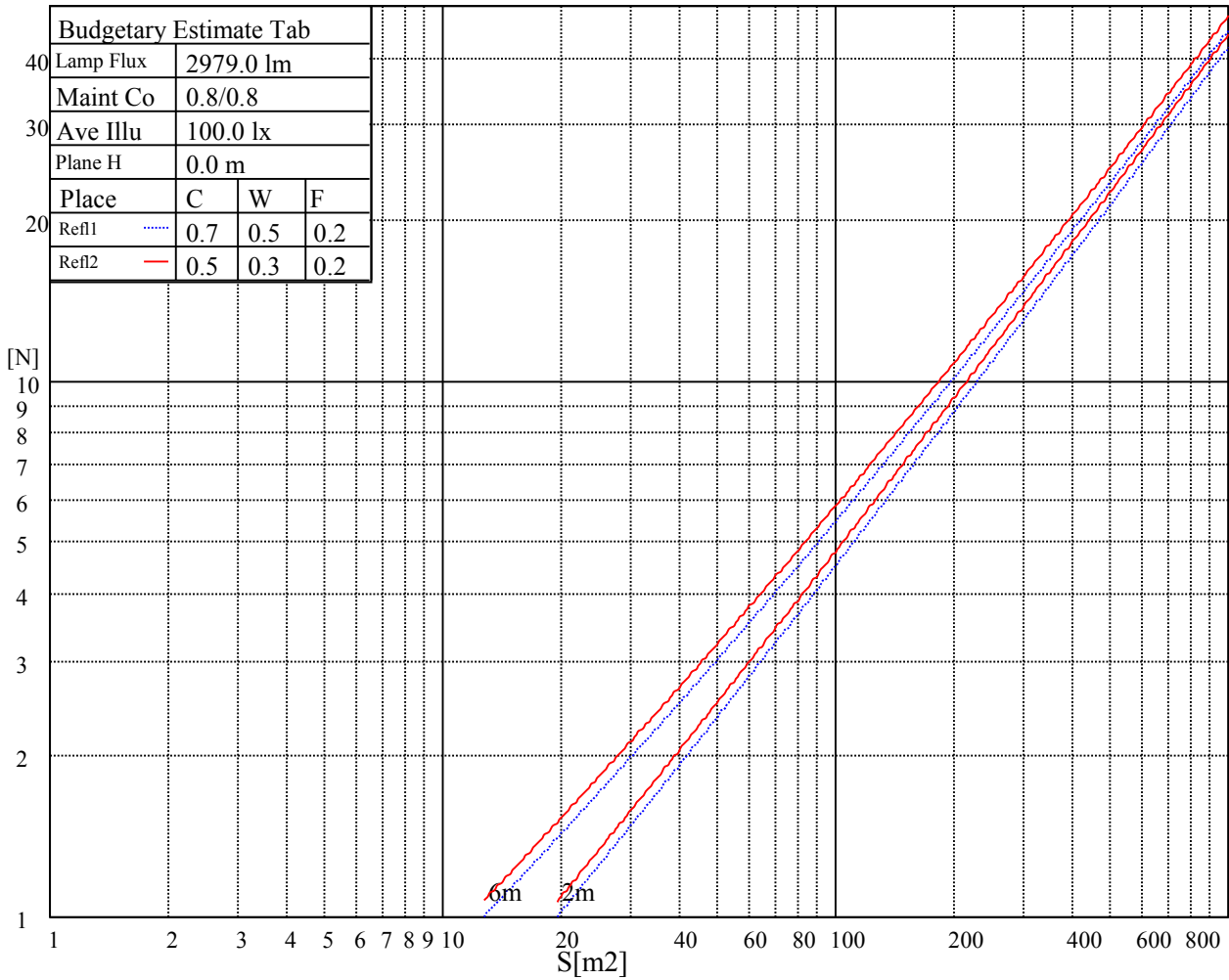
Glare Table

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

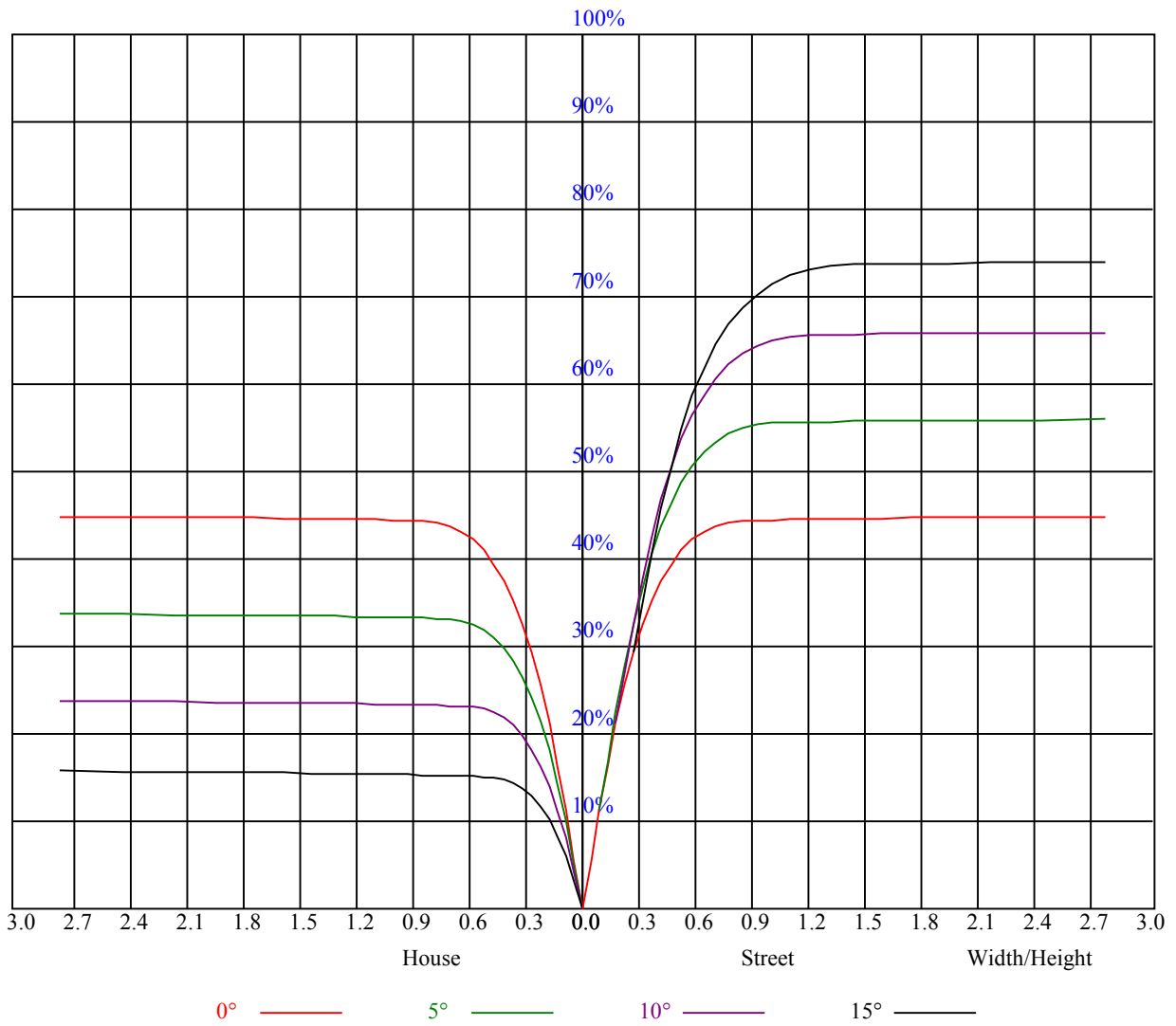
Luminance Limiting Curve



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	-0.07	0.85	0.30	1.16	1.48	0.01	0.92	0.37	1.23	1.55
	3H	3.26	4.07	3.64	4.40	4.77	3.28	4.09	3.66	4.42	4.79
	4H	6.12	6.87	6.53	7.22	7.61	6.25	7.00	6.66	7.35	7.74
	6H	8.30	8.99	8.72	9.36	9.76	8.49	9.17	8.91	9.55	9.95
	8H	9.25	9.89	9.69	10.29	10.70	9.44	10.08	9.87	10.47	10.88
	12H	10.73	11.34	11.16	11.72	12.15	10.88	11.49	11.32	11.88	12.31
4H	2H	0.85	1.59	1.26	1.95	2.34	0.90	1.65	1.31	2.00	2.39
	3H	4.57	5.18	4.98	5.59	6.00	4.59	5.21	5.01	5.62	6.03
	4H	7.61	8.16	8.05	8.59	9.04	7.74	8.29	8.18	8.71	9.16
	6H	9.77	10.24	10.24	10.69	11.17	9.93	10.40	10.41	10.85	11.33
	8H	10.81	11.25	11.29	11.70	12.17	10.97	11.41	11.45	11.86	12.33
8H	12H	12.19	12.57	12.68	13.06	13.54	12.33	12.70	12.82	13.19	13.67
	4H	8.49	8.93	8.97	9.38	9.85	8.58	9.02	9.06	9.47	9.95
	6H	10.82	11.17	11.33	11.67	12.16	10.95	11.30	11.46	11.80	12.29
	8H	12.01	12.31	12.54	12.84	13.33	12.14	12.44	12.67	12.96	13.46
12H	12H	13.49	13.75	14.01	14.25	14.83	13.60	13.86	14.12	14.36	14.94
	4H	8.69	9.07	9.18	9.56	10.03	8.77	9.15	9.26	9.64	10.12
	6H	11.31	11.41	11.64	11.89	12.44	11.43	11.53	11.76	12.00	12.55
	8H	12.41	12.67	12.93	13.17	13.75	12.52	12.78	13.05	13.28	13.87
Variation with the observer position at spacings:											
S = 1.0H	5.5/-6.9					5.5/-6.9					
S = 1.5H	7.4/-4.8					7.4/-4.8					
S = 2.0H	8.7/-3.3					8.7/-3.3					
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	1.08	1.08	1.08	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.00	0.98	0.96	0.98	0.96	0.94	0.95	0.93	0.91	0.91	0.90	0.89	0.88	0.87	0.86	0.84
2	0.95	0.91	0.88	0.93	0.90	0.87	0.90	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.82	0.81
3	0.90	0.86	0.83	0.89	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.82	0.80	0.78	0.77
4	0.86	0.81	0.78	0.85	0.81	0.78	0.83	0.79	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.74
5	0.82	0.77	0.74	0.81	0.77	0.74	0.80	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
6	0.78	0.74	0.71	0.78	0.74	0.70	0.77	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
7	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.65
8	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63
9	0.70	0.65	0.62	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.61
10	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.59



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	6247.13	6017.06	5196.94	3891.94	2672.44	1721.25	1202.06	742.50	311.06
45.0	6247.69	5925.38	4887.56	3630.94	2462.06	1562.06	1128.38	631.69	48.38
90.0	6223.50	5727.38	4523.06	3211.31	2178.00	1426.50	1037.53	440.44	31.73
135.0	6252.75	5845.50	4784.06	3513.94	2328.19	1497.38	1112.63	560.25	36.11
180.0	6247.13	5725.13	4478.63	3211.88	2116.13	1393.31	1031.51	436.56	31.39
225.0	6247.69	5854.50	4808.25	3420.56	2333.81	1496.25	1093.67	583.37	38.25
270.0	6223.50	6028.88	5145.75	3931.31	2625.75	1656.00	1177.88	743.06	301.50
315.0	6252.75	5915.81	4997.81	3638.25	2435.06	1562.06	1110.21	620.10	52.99
360.0	6247.13	6017.06	5196.94	3891.94	2672.44	1721.25	1202.06	742.50	311.06

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	16.82	14.06	12.71	11.87	11.36	11.36	14.51	14.85	11.42
45.0	15.69	13.67	12.43	11.76	11.48	11.53	18.73	14.96	11.25
90.0	15.36	13.39	12.38	11.76	11.59	11.81	21.04	12.43	11.31
135.0	15.86	13.61	12.43	11.76	11.48	11.53	14.12	13.73	11.31
180.0	15.30	13.39	12.26	11.70	11.53	11.70	19.29	11.93	11.31
225.0	15.75	13.44	12.21	11.59	11.31	11.31	14.18	12.38	11.25
270.0	16.37	13.84	12.43	11.64	11.25	11.19	11.36	13.33	11.19
315.0	15.92	13.56	12.21	11.59	11.31	11.31	15.75	11.76	11.31
360.0	16.82	14.06	12.71	11.87	11.36	11.36	14.51	14.85	11.42

C/γ(°)	90.0
0.0	11.14
45.0	11.08
90.0	11.08
135.0	11.08
180.0	11.14
225.0	11.08
270.0	11.08
315.0	11.08
360.0	11.14