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Nata

LumCAT: 1687-M
Luminaire: 92.70.125.00
Report No: NATA0100
Test No: GC2018070606
LampCAT: NICHIA NTCWT012B-V3
Lamp flux(lm): 741.0
Number of Lamps: 1
Length(mm): 46
Phm Type: C

Voltage(V): 38.4000
Current(A): 0.2000
Power (W): 7.6800
PF: 0.0000
Ballast type: DC
Width(mm): 46
Height(mm): 0

Photometric Results

Lumens(lm): 674.01
Efficiency(%): 90.96%
Lumens(lm)/Power(W): 88.05
Central intensity(cd): 2389.448
Maximum intensity(cd): 2389.448
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=21.6
 [C90/270]Total=21.6
Field angle(10%Imax): [C0/180]Total=57.9
 [C90/270]Total=57.9
Maximum s/h(1/2): C0_180=0.37 C90_270=0.37
Maximum s/h(1/4): C0_180=0.37 C90_270=0.37
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.25%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.451%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2389.448	2.287	2.287	.309%	.339%
2.0	2316.498	17.730	20.017	2.393%	2.970%
4.0	2137.978	32.708	52.725	4.414%	7.823%
6.0	1894.560	43.432	96.157	5.861%	14.266%
8.0	1622.374	49.519	145.676	6.683%	21.613%
10.0	1318.897	50.228	195.904	6.778%	29.066%
12.0	1000.623	45.626	241.53	6.157%	35.835%
14.0	728.747	38.665	280.195	5.218%	41.572%
16.0	515.025	31.134	311.329	4.202%	46.191%
18.0	381.328	25.843	337.172	3.488%	50.025%
20.0	314.448	23.587	360.758	3.183%	53.524%
22.0	284.180	23.347	384.106	3.151%	56.988%
24.0	267.065	23.823	407.928	3.215%	60.523%
26.0	253.872	24.407	432.336	3.294%	64.144%
28.0	242.861	25.005	457.341	3.375%	67.854%
30.0	234.499	25.714	483.056	3.470%	71.669%
32.0	227.390	26.427	509.482	3.566%	75.590%
34.0	220.996	27.103	536.585	3.658%	79.611%
36.0	213.873	27.570	564.155	3.721%	83.702%
38.0	206.427	27.872	592.028	3.761%	87.837%
40.0	191.466	26.991	619.019	3.643%	91.842%
42.0	148.769	21.832	640.851	2.946%	95.081%
44.0	86.494	13.177	654.028	1.778%	97.036%
46.0	33.736	5.322	659.35	.718%	97.825%
48.0	11.225	1.829	661.179	.247%	98.097%
50.0	7.164	1.204	662.383	.162%	98.275%
52.0	5.210	0.900	663.283	.122%	98.409%
54.0	3.833	0.680	663.964	.092%	98.510%
56.0	3.338	0.607	664.57	.082%	98.600%
58.0	3.097	0.576	665.146	.078%	98.685%
60.0	3.014	0.573	665.719	.077%	98.770%
62.0	2.932	0.568	666.287	.077%	98.855%
64.0	2.877	0.567	666.854	.077%	98.939%
66.0	2.829	0.567	667.42	.076%	99.023%
68.0	2.787	0.567	667.987	.076%	99.107%
70.0	2.767	0.570	668.557	.077%	99.192%
72.0	2.732	0.570	669.127	.077%	99.276%
74.0	2.712	0.572	669.699	.077%	99.361%

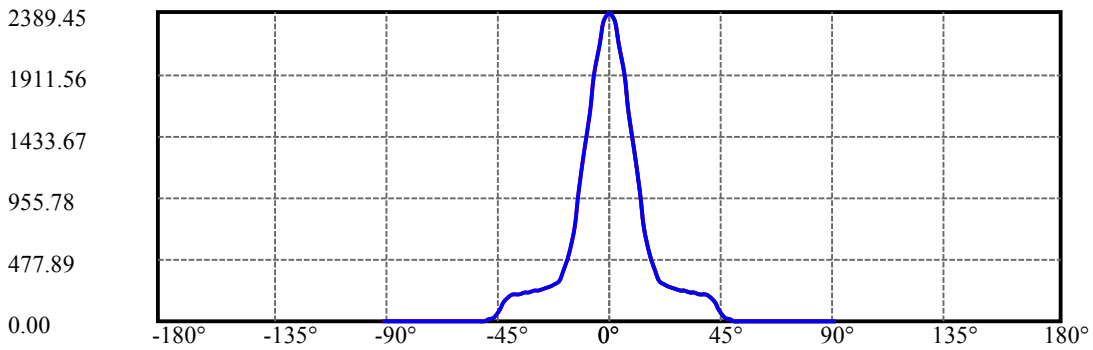
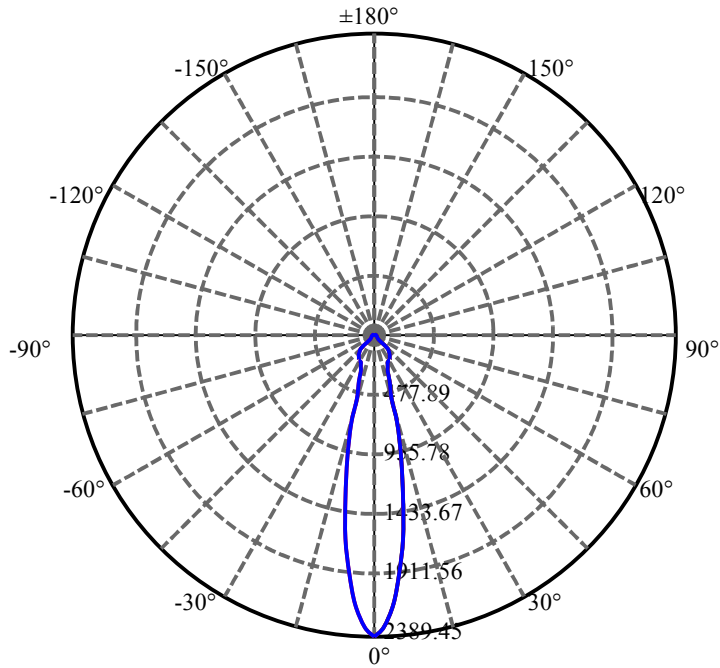
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	2.698	0.574	670.273	.077%	99.446%
78.0	2.663	0.571	670.844	.077%	99.531%
80.0	2.663	0.575	671.42	.078%	99.616%
82.0	2.663	0.578	671.998	.078%	99.702%
84.0	2.663	0.581	672.579	.078%	99.788%
86.0	2.622	0.574	673.152	.077%	99.873%
88.0	2.595	0.569	673.721	.077%	99.958%
90.0	2.601	0.285	674.006	.038%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	483.06	65.19%	71.67%
0-40	619.02	83.54%	91.84%
0-60	665.72	89.84%	98.77%
0-90	673.72	90.92%	99.96%
0-120	673.72	90.92%	99.96%
0-180	674.01	90.96%	100.00%
60-90	8.57	1.16%	1.27%
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%
0-34.19	539.21	72.77%	80.00%

ZONAL LUMEN SUMMARY

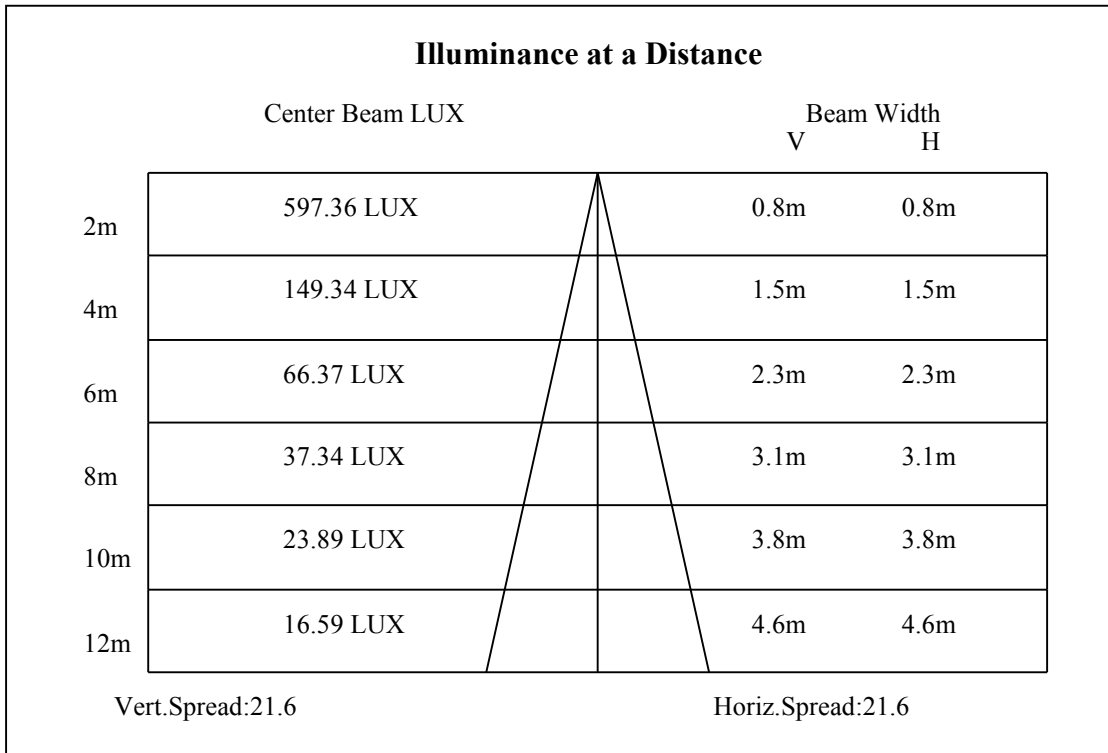
0-10	195.90
10-20	164.85
20-30	122.30
30-40	135.96
40-50	43.36
50-60	3.34
60-70	2.84
70-80	2.86
80-90	2.30
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

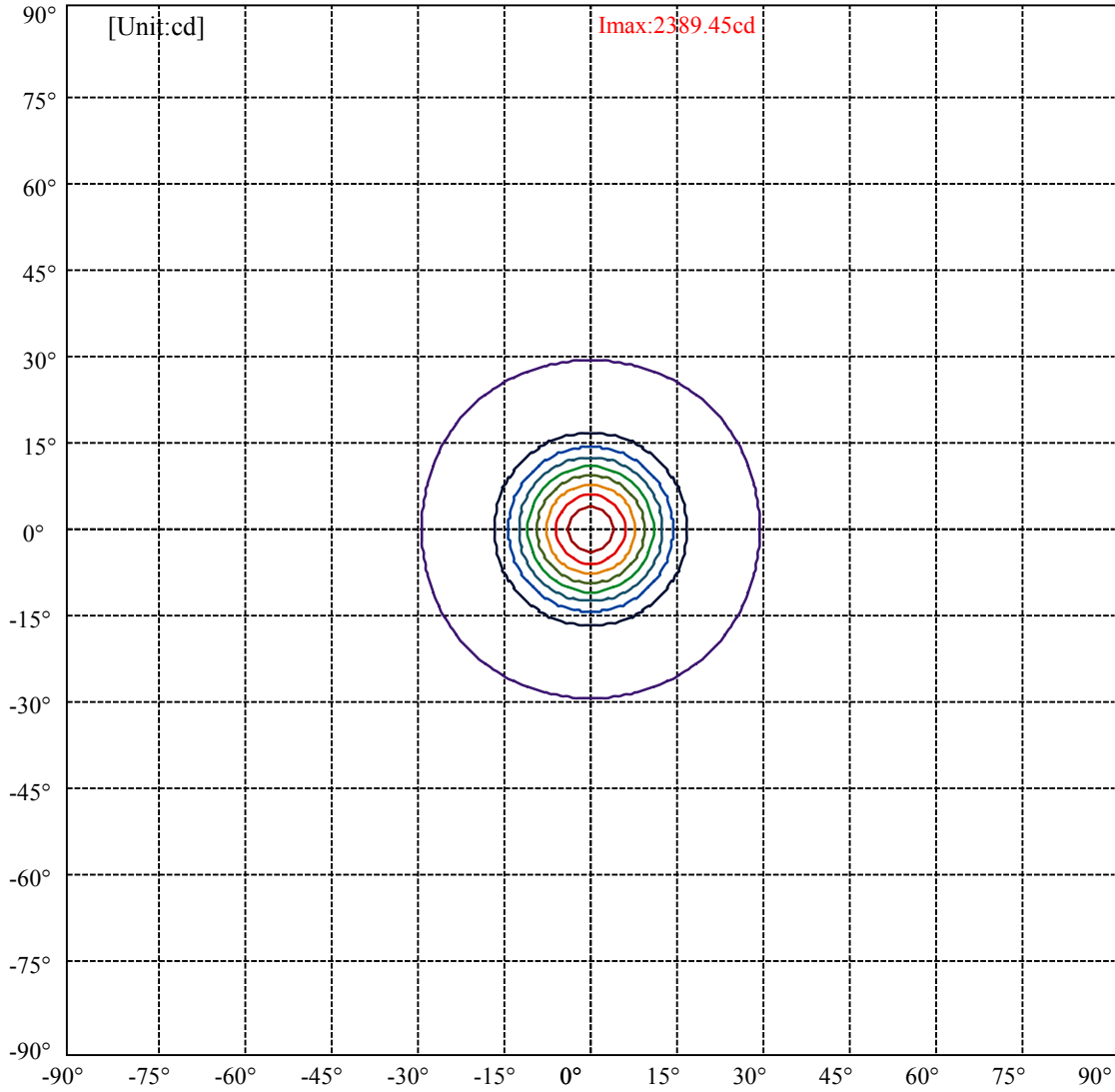


C0(Max): ———
C0/C180: ———
C90/C270: ———

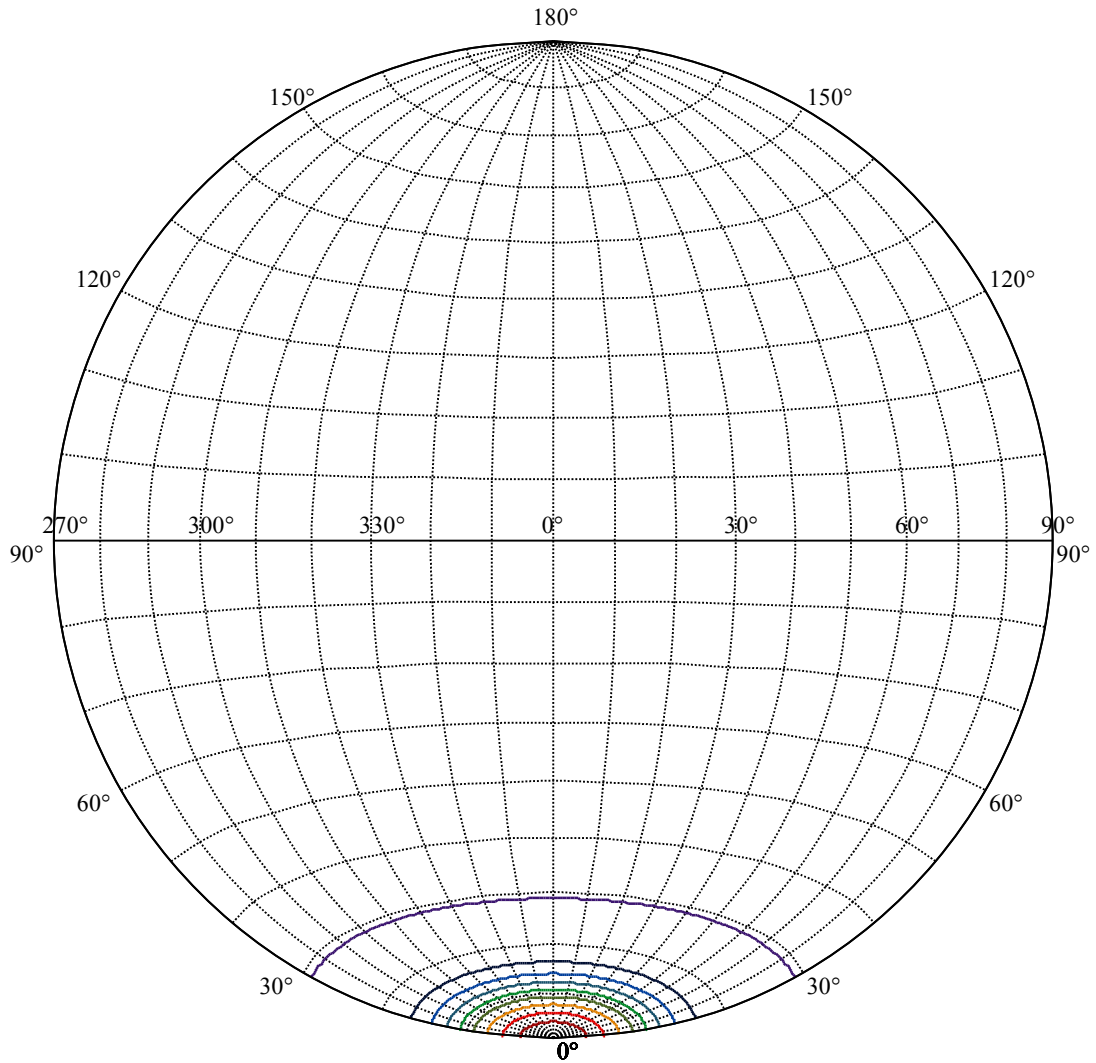
Field angle(10%Imax):C0/180Left:28.9 Right:28.9
:C90/270Left:28.9 Right:28.9

Beam Angle(50%Imax):C0/180Left:10.8 Right:10.8
:C90/270Left:10.8 Right:10.8





(10%Imax) 238.945	—
(20%Imax) 477.89	—
(30%Imax) 716.834	—
(40%Imax) 955.779	—
(50%Imax) 1194.72	—
(60%Imax) 1433.67	—
(70%Imax) 1672.61	—
(80%Imax) 1911.56	—
(90%Imax) 2150.5	—



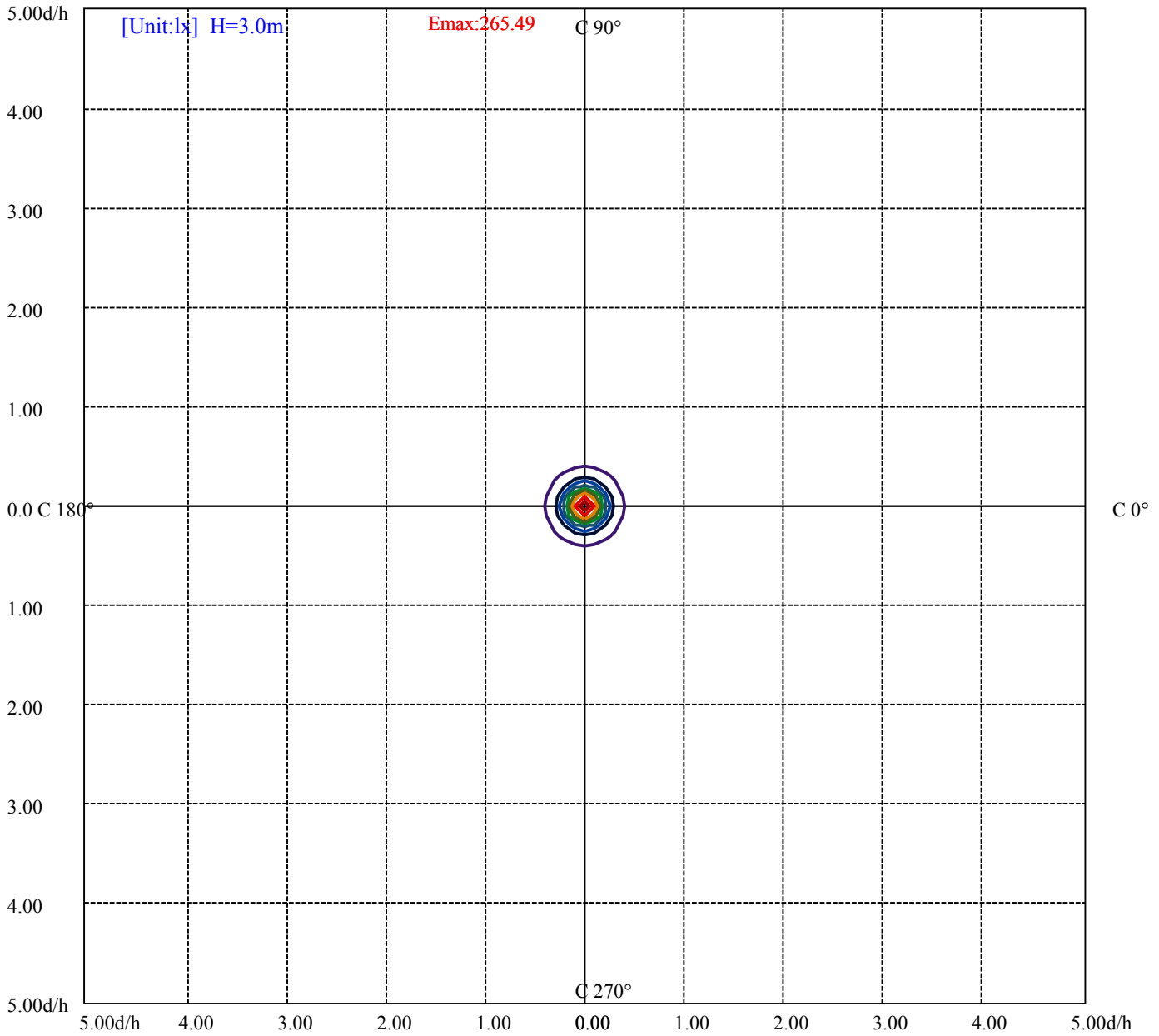
House

[Unit:cd]

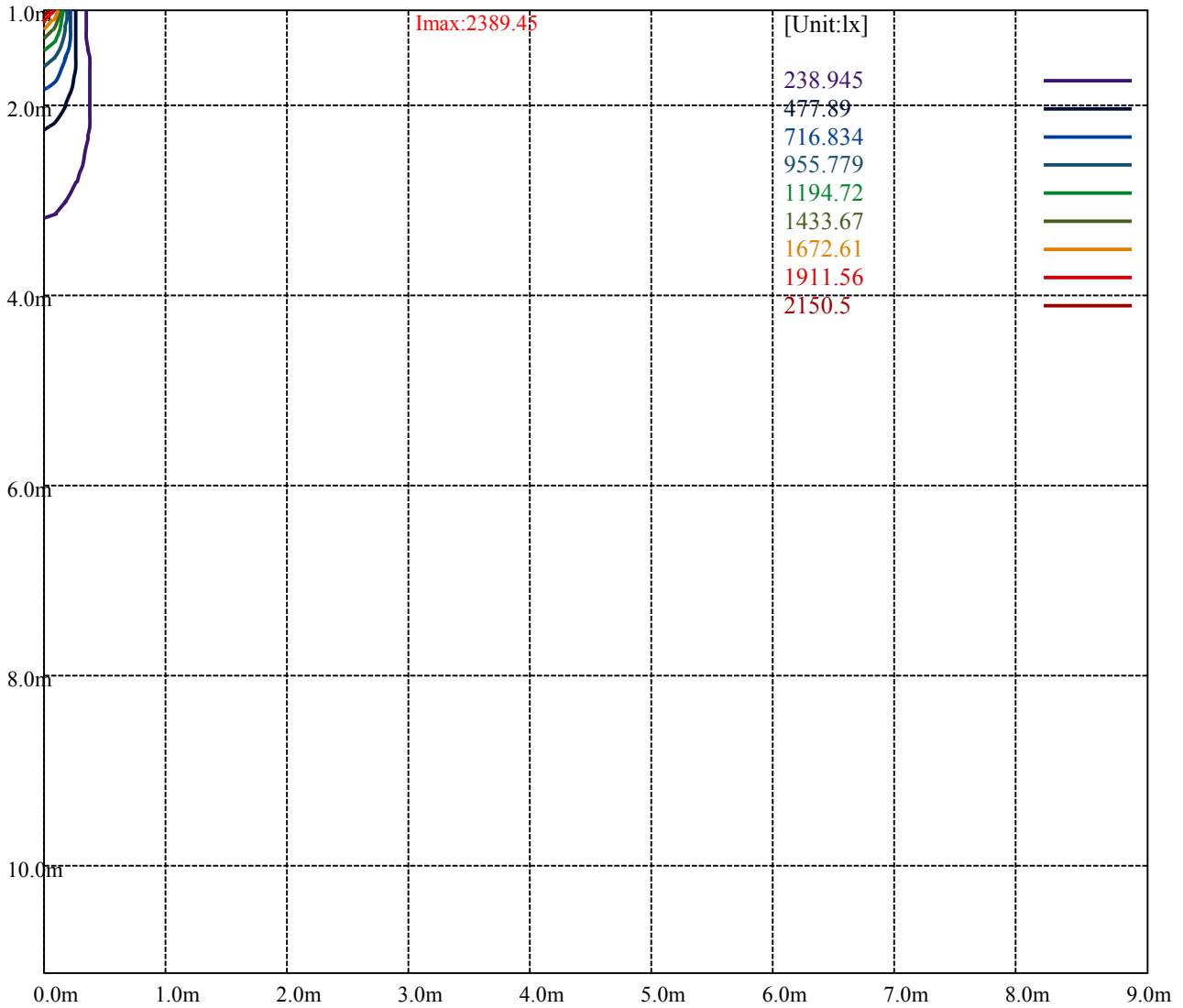
Road

Imax:2389.45

(10%Imax) 238.945	—
(20%Imax) 477.89	—
(30%Imax) 716.834	—
(40%Imax) 955.779	—
(50%Imax) 1194.72	—
(60%Imax) 1433.67	—
(70%Imax) 1672.61	—
(80%Imax) 1911.56	—
(90%Imax) 2150.5	—



(10%Emax) 26.54933	—
(20%Emax) 53.09867	—
(30%Emax) 79.64811	—
(40%Emax) 106.1974	—
(50%Emax) 132.7467	—
(60%Emax) 159.2967	—
(70%Emax) 185.8456	—
(80%Emax) 212.3945	—
(90%Emax) 238.9444	—



Luminance Table

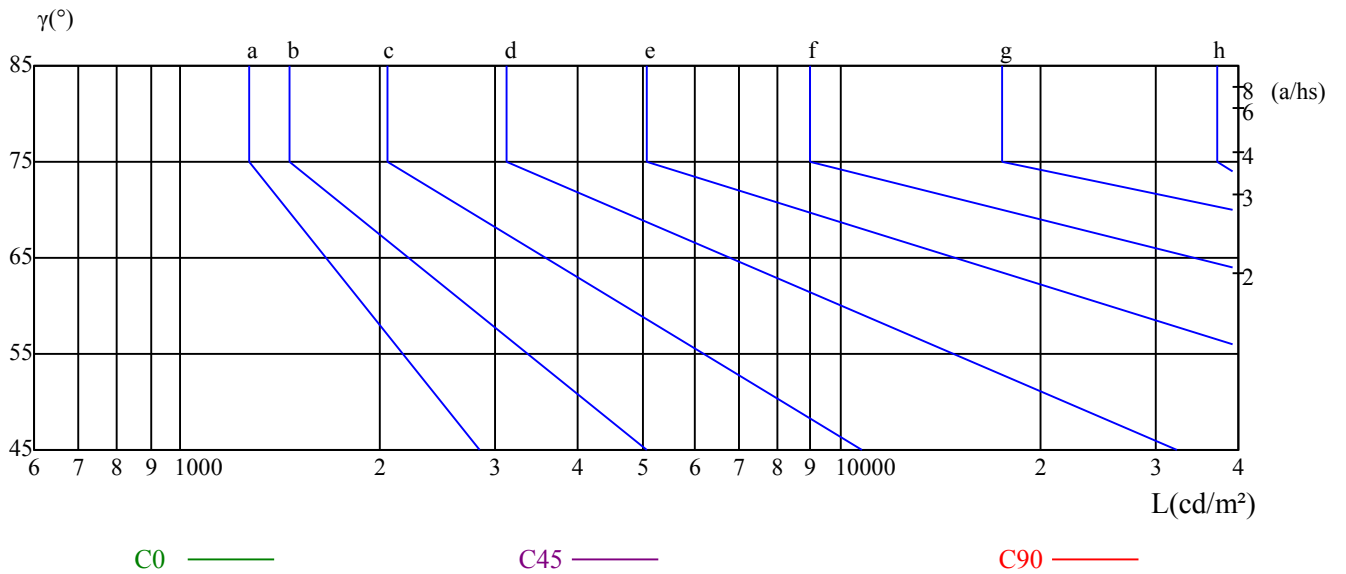
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

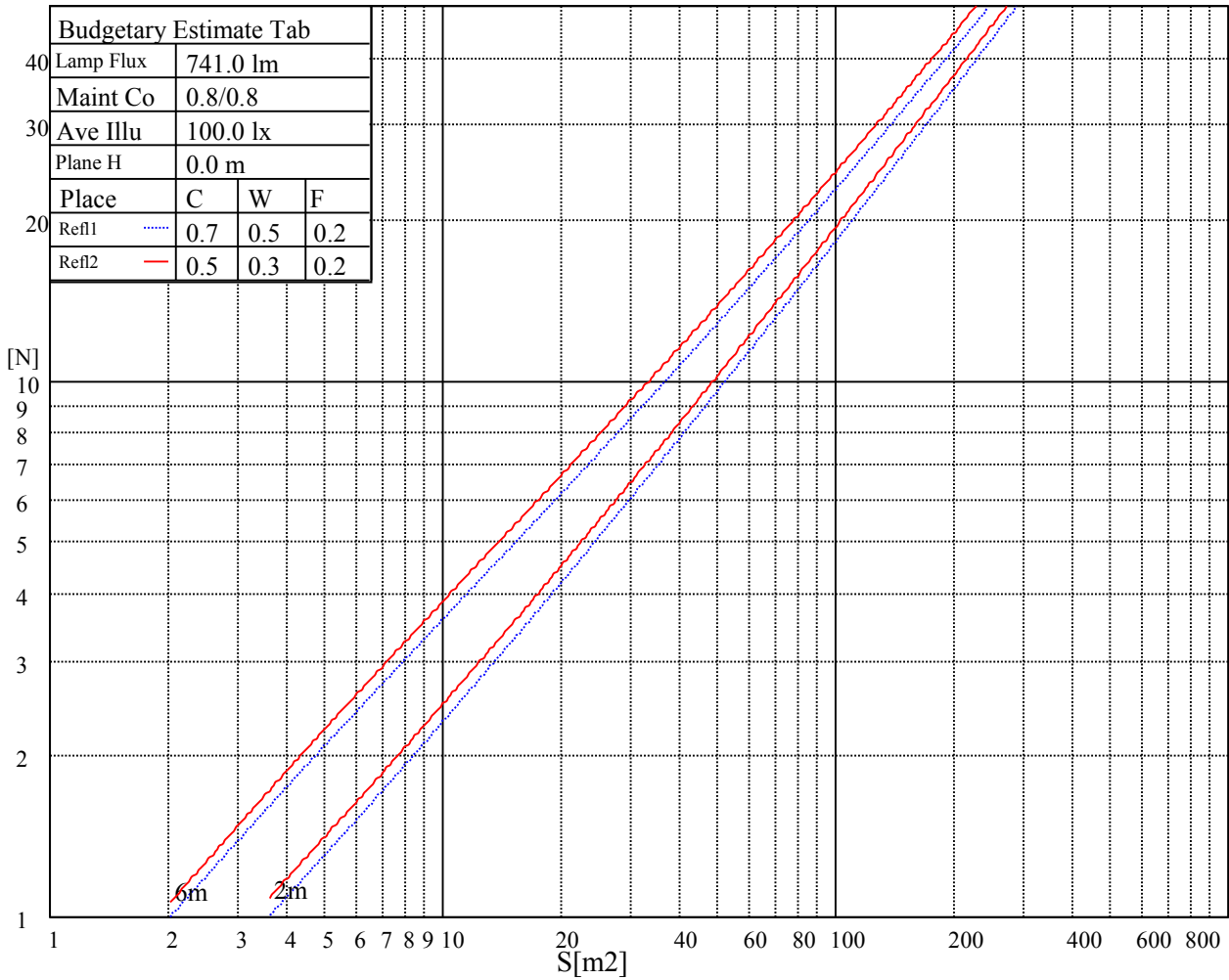
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

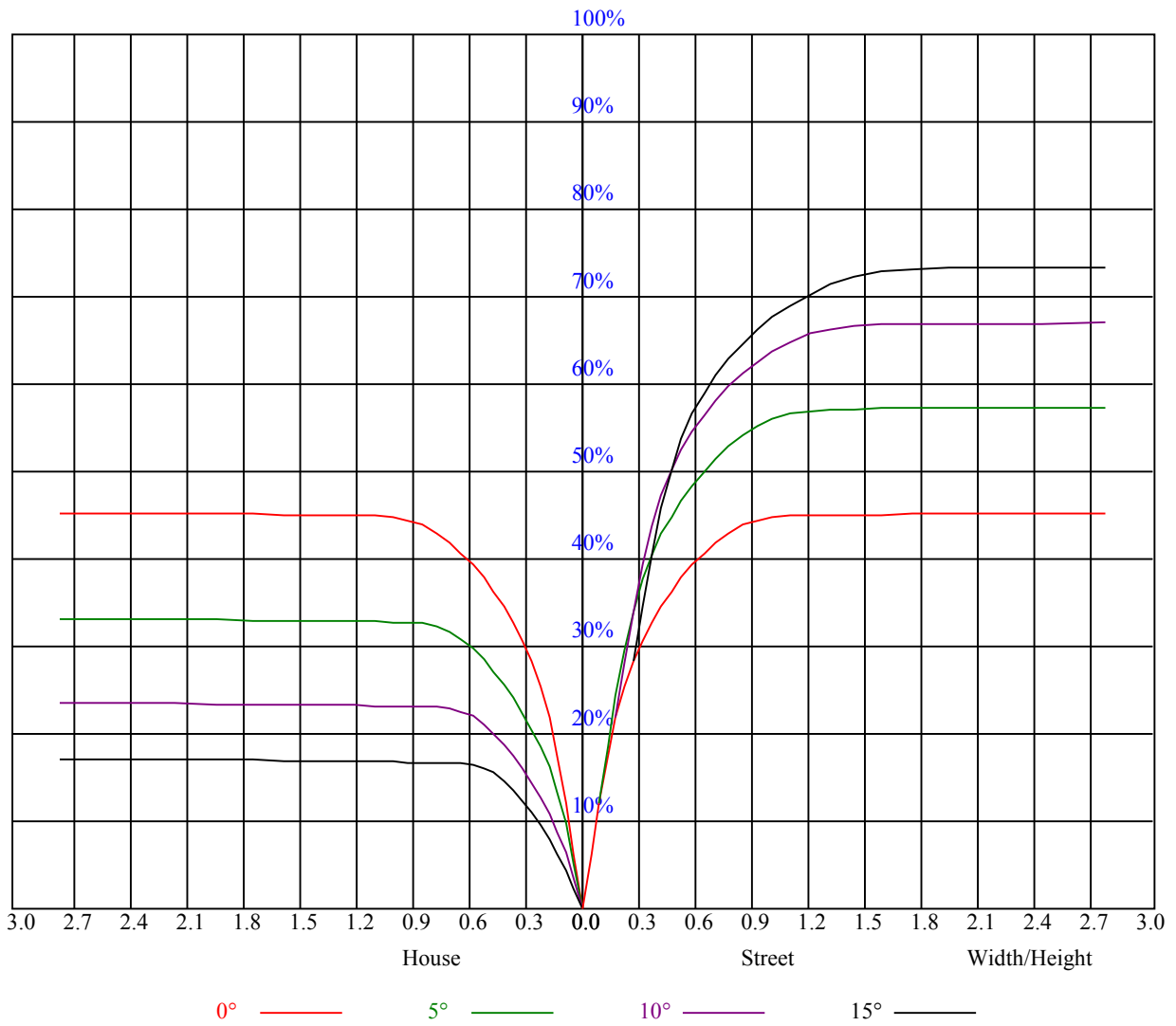
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





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	1.09	1.09	1.09	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	1.01	0.99	0.97	0.99	0.97	0.95	0.96	0.94	0.92	0.92	0.91	0.90	0.89	0.88	0.87	0.85
2	0.95	0.91	0.88	0.93	0.90	0.88	0.90	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.82	0.81
3	0.89	0.85	0.82	0.88	0.84	0.81	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.79	0.77	0.76
4	0.84	0.80	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.74	0.78	0.75	0.73	0.72
5	0.80	0.75	0.72	0.79	0.75	0.71	0.78	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.69	0.68
6	0.76	0.71	0.68	0.75	0.71	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.65
7	0.72	0.68	0.64	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.63	0.69	0.66	0.63	0.62
8	0.69	0.64	0.61	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.60	0.66	0.63	0.60	0.59
9	0.66	0.62	0.58	0.66	0.61	0.58	0.65	0.61	0.58	0.64	0.61	0.58	0.64	0.60	0.58	0.57
10	0.64	0.59	0.56	0.63	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.56	0.61	0.58	0.55	0.54



Intensity data(cd)

C/γ(°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0
0.0	2386.14	2227.58	2002.95	1745.84	1467.80	1147.38	835.21	576.99	401.91
45.0	2409.27	2317.32	2142.24	1884.03	1617.01	1334.02	1028.45	720.14	505.42
90.0	2396.05	2341.00	2152.15	1920.37	1657.75	1349.98	1047.78	769.03	546.71
135.0	2366.32	2399.91	2284.29	2077.83	1822.37	1538.28	1260.79	944.77	667.83
180.0	2386.14	2397.16	2261.72	2033.78	1785.48	1488.17	1092.70	884.81	633.26
225.0	2409.27	2331.09	2157.11	1923.12	1620.31	1335.67	1020.91	738.03	518.85
270.0	2396.05	2304.11	2126.28	1860.91	1589.48	1287.77	974.50	673.34	467.98
315.0	2366.32	2213.82	1977.08	1710.60	1418.80	1069.91	744.64	522.87	378.24
360.0	2386.14	2227.58	2002.95	1745.84	1467.80	1147.38	835.21	576.99	401.91
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	323.18	291.80	278.03	260.69	250.56	239.05	233.05	225.95	218.68
45.0	373.83	309.42	285.74	266.91	254.91	243.62	235.37	228.21	222.21
90.0	389.52	317.68	283.32	267.24	254.80	243.46	233.49	226.83	220.61
135.0	480.64	352.36	297.30	278.59	257.22	245.77	236.19	227.99	221.60
180.0	447.11	340.03	290.75	272.25	257.83	246.65	235.81	227.77	221.93
225.0	372.90	312.11	283.38	265.92	253.37	242.47	233.33	226.39	220.12
270.0	354.01	303.36	283.54	265.81	254.47	243.40	236.41	230.19	223.91
315.0	309.42	288.83	271.37	259.10	247.81	238.45	232.34	225.79	218.90
360.0	323.18	291.80	278.03	260.69	250.56	239.05	233.05	225.95	218.68
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	212.85	205.09	175.35	114.90	50.38	11.07	8.48	5.84	3.96
45.0	213.84	206.79	197.38	146.23	79.45	24.83	9.14	7.21	5.18
90.0	212.79	205.75	198.04	159.55	97.06	37.44	9.08	7.43	5.56
135.0	215.44	207.45	201.45	186.04	135.22	73.39	21.14	8.97	7.16
180.0	216.26	207.95	200.46	182.51	124.92	61.06	16.02	8.86	6.50
225.0	212.19	205.42	196.06	151.85	89.36	30.83	9.36	7.38	5.12
270.0	216.26	208.77	196.17	141.61	74.88	21.58	8.70	6.50	4.51
315.0	211.36	204.20	166.82	107.47	40.69	9.69	7.87	5.12	3.69
360.0	212.85	205.09	175.35	114.90	50.38	11.07	8.48	5.84	3.96
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	3.30	3.14	3.03	2.97	2.86	2.86	2.81	2.75	2.75
45.0	3.85	3.25	3.19	3.08	2.97	2.92	2.92	2.86	2.81
90.0	3.91	3.30	3.08	3.03	2.97	2.86	2.81	2.81	2.75
135.0	4.68	3.85	3.19	3.08	2.97	2.92	2.86	2.81	2.81
180.0	4.24	3.63	3.08	3.03	2.92	2.86	2.81	2.81	2.75
225.0	3.80	3.25	3.14	3.03	2.97	2.92	2.86	2.81	2.81
270.0	3.58	3.19	3.08	2.97	2.92	2.86	2.81	2.75	2.75
315.0	3.30	3.08	2.97	2.92	2.86	2.81	2.75	2.70	2.70
360.0	3.30	3.14	3.03	2.97	2.86	2.86	2.81	2.75	2.75
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	2.70	2.70	2.70	2.64	2.64	2.64	2.64	2.59	2.59
45.0	2.81	2.81	2.75	2.70	2.70	2.75	2.75	2.59	2.59
90.0	2.75	2.70	2.70	2.70	2.64	2.64	2.64	2.64	2.59
135.0	2.75	2.70	2.70	2.64	2.70	2.64	2.64	2.64	2.59
180.0	2.70	2.70	2.70	2.64	2.64	2.64	2.64	2.64	2.59
225.0	2.75	2.75	2.70	2.70	2.70	2.70	2.70	2.64	2.64
270.0	2.70	2.70	2.70	2.64	2.64	2.64	2.64	2.64	2.59
315.0	2.70	2.64	2.64	2.64	2.64	2.64	2.64	2.59	2.59
360.0	2.70	2.70	2.70	2.64	2.64	2.64	2.64	2.59	2.59

Intensity data(cd)

C/ γ (°)	90.0
0.0	2.59
45.0	2.64
90.0	2.59
135.0	2.59
180.0	2.59
225.0	2.64
270.0	2.59
315.0	2.59
360.0	2.59