



NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 3-2115-N	
Luminaire: 92.70.135.00	
Report No: NATA0100	Voltage(V): 33.8000
Test No: GC2018062503	Current(A): 0.5000
LampCAT: NICHIA NFCWJ120B-V3	Power (W): 16.9000
Lamp flux(lm): 2272.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 81	Width(mm): 81
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1947.12
Efficiency(%): 85.70%
Lumens(lm)/Power(W): 115.21
Central intensity(cd): 12247.980
Maximum intensity(cd): 12247.980
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=15.6
 [C90/270]Total=15.6
Field angle(10%Imax): [C0/180]Total=42.7
 [C90/270]Total=42.7
Maximum s/h(1/2): C0_180=0.27 C90_270=0.27
Maximum s/h(1/4): C0_180=0.31 C90_270=0.31
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 86.20%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.590%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	12247.984	11.721	11.721	.516%	.602%
2.0	11721.232	89.713	101.434	3.949%	5.209%
4.0	10123.840	154.880	256.314	6.817%	13.164%
6.0	7891.234	180.903	437.217	7.962%	22.455%
8.0	5910.442	180.402	617.618	7.940%	31.720%
10.0	4398.731	167.519	785.137	7.373%	40.323%
12.0	3407.165	155.359	940.496	6.838%	48.302%
14.0	2658.398	141.046	1081.542	6.208%	55.546%
16.0	2086.775	126.148	1207.69	5.552%	62.024%
18.0	1681.354	113.948	1321.638	5.015%	67.876%
20.0	1381.847	103.652	1425.289	4.562%	73.200%
22.0	1149.103	94.406	1519.695	4.155%	78.048%
24.0	962.372	85.846	1605.542	3.778%	82.457%
26.0	818.062	78.649	1684.191	3.462%	86.496%
28.0	666.795	68.654	1752.845	3.022%	90.022%
30.0	484.269	53.103	1805.948	2.337%	92.750%
32.0	296.651	34.476	1840.424	1.517%	94.520%
34.0	153.222	18.791	1859.215	.827%	95.485%
36.0	67.011	8.638	1867.854	.380%	95.929%
38.0	45.621	6.160	1874.014	.271%	96.245%
40.0	35.181	4.960	1878.973	.218%	96.500%
42.0	28.361	4.162	1883.135	.183%	96.714%
44.0	24.053	3.664	1886.799	.161%	96.902%
46.0	21.197	3.344	1890.143	.147%	97.074%
48.0	19.497	3.178	1893.321	.140%	97.237%
50.0	18.141	3.048	1896.369	.134%	97.393%
52.0	17.343	2.997	1899.366	.132%	97.547%
54.0	16.785	2.978	1902.344	.131%	97.700%
56.0	16.379	2.978	1905.322	.131%	97.853%
58.0	16.104	2.995	1908.317	.132%	98.007%
60.0	15.959	3.031	1911.349	.133%	98.163%
62.0	15.877	3.074	1914.423	.135%	98.321%
64.0	15.725	3.100	1917.523	.136%	98.480%
66.0	14.851	2.976	1920.498	.131%	98.633%
68.0	13.682	2.782	1923.28	.122%	98.776%
70.0	12.752	2.628	1925.909	.116%	98.910%
72.0	12.119	2.528	1928.436	.111%	99.040%
74.0	11.693	2.465	1930.901	.108%	99.167%

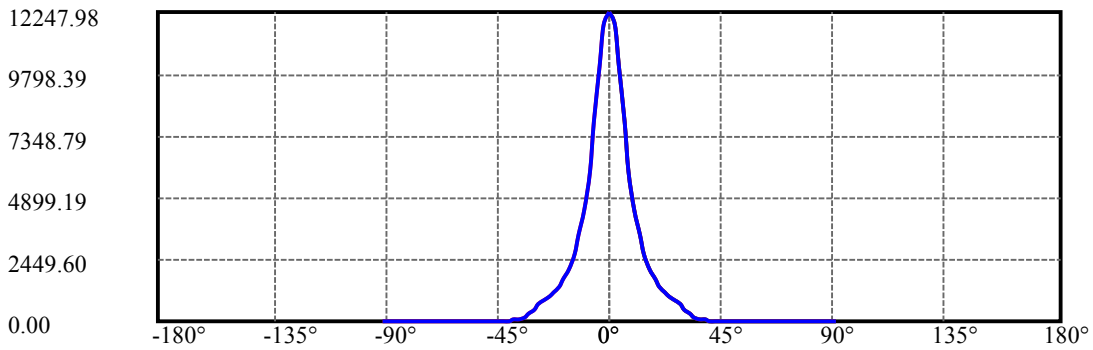
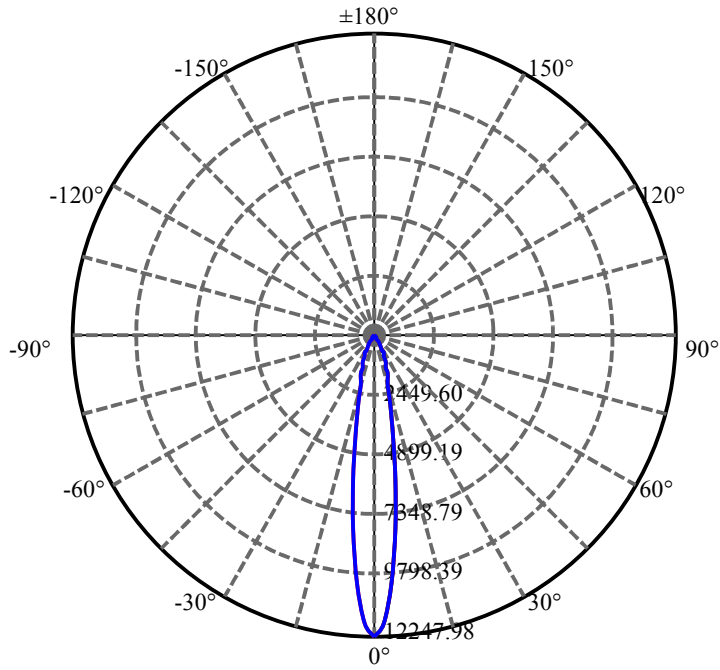
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	11.280	2.400	1933.302	.106%	99.290%
78.0	10.874	2.333	1935.634	.103%	99.410%
80.0	10.440	2.255	1937.889	.099%	99.526%
82.0	10.027	2.178	1940.067	.096%	99.638%
84.0	9.662	2.107	1942.174	.093%	99.746%
86.0	9.318	2.039	1944.213	.090%	99.851%
88.0	8.954	1.962	1946.175	.086%	99.951%
90.0	8.637	0.947	1947.123	.042%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1805.95	79.49%	92.75%
0-40	1878.97	82.70%	96.50%
0-60	1911.35	84.13%	98.16%
0-90	1946.18	85.66%	99.95%
0-120	1946.18	85.66%	99.95%
0-180	1947.12	85.70%	100.00%
60-90	37.86	1.67%	1.94%
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%
0-22.89	1557.70	68.56%	80.00%

ZONAL LUMEN SUMMARY

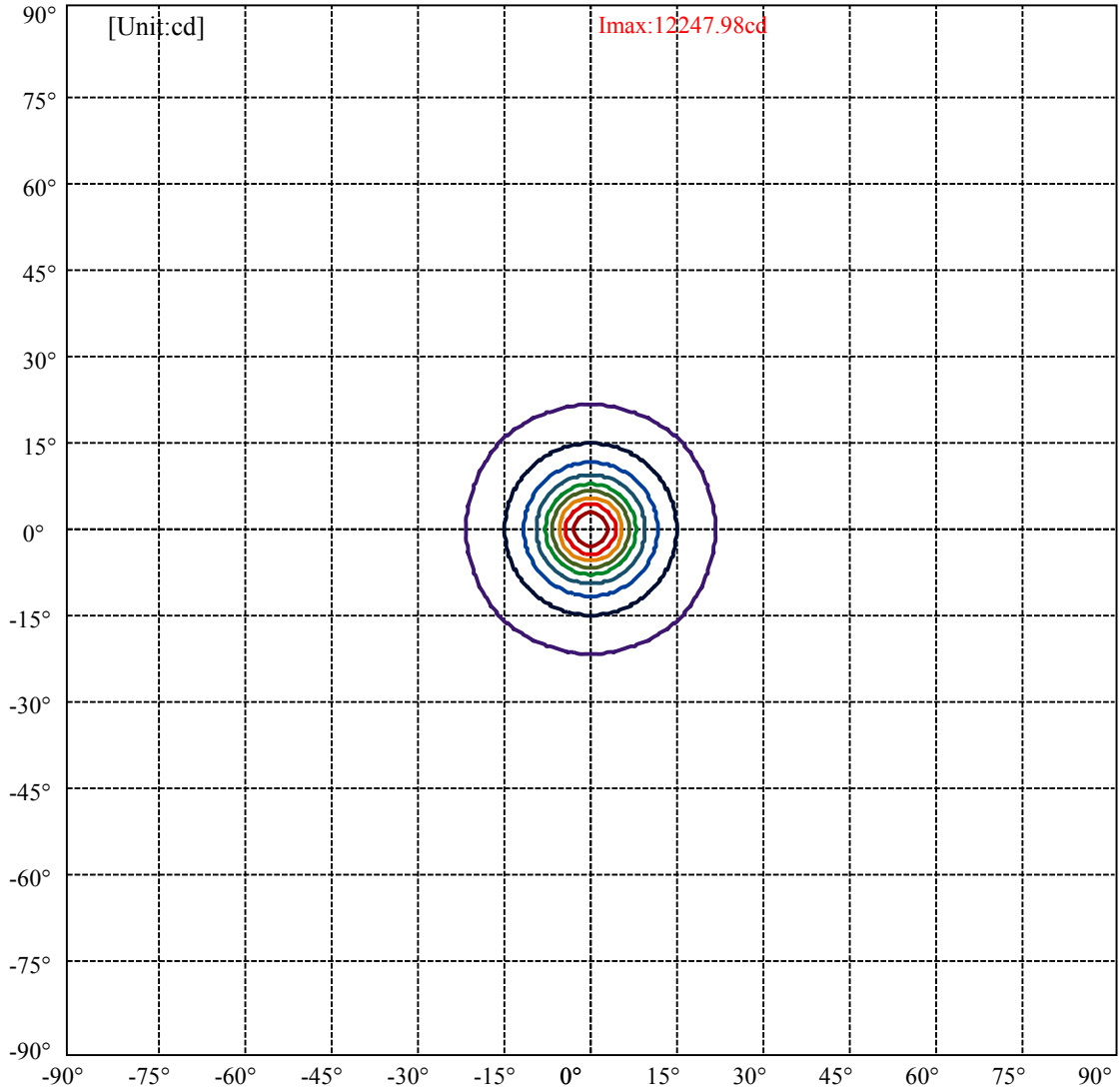
0-10	785.14
10-20	640.15
20-30	380.66
30-40	73.02
40-50	17.40
50-60	14.98
60-70	14.56
70-80	11.98
80-90	8.29
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



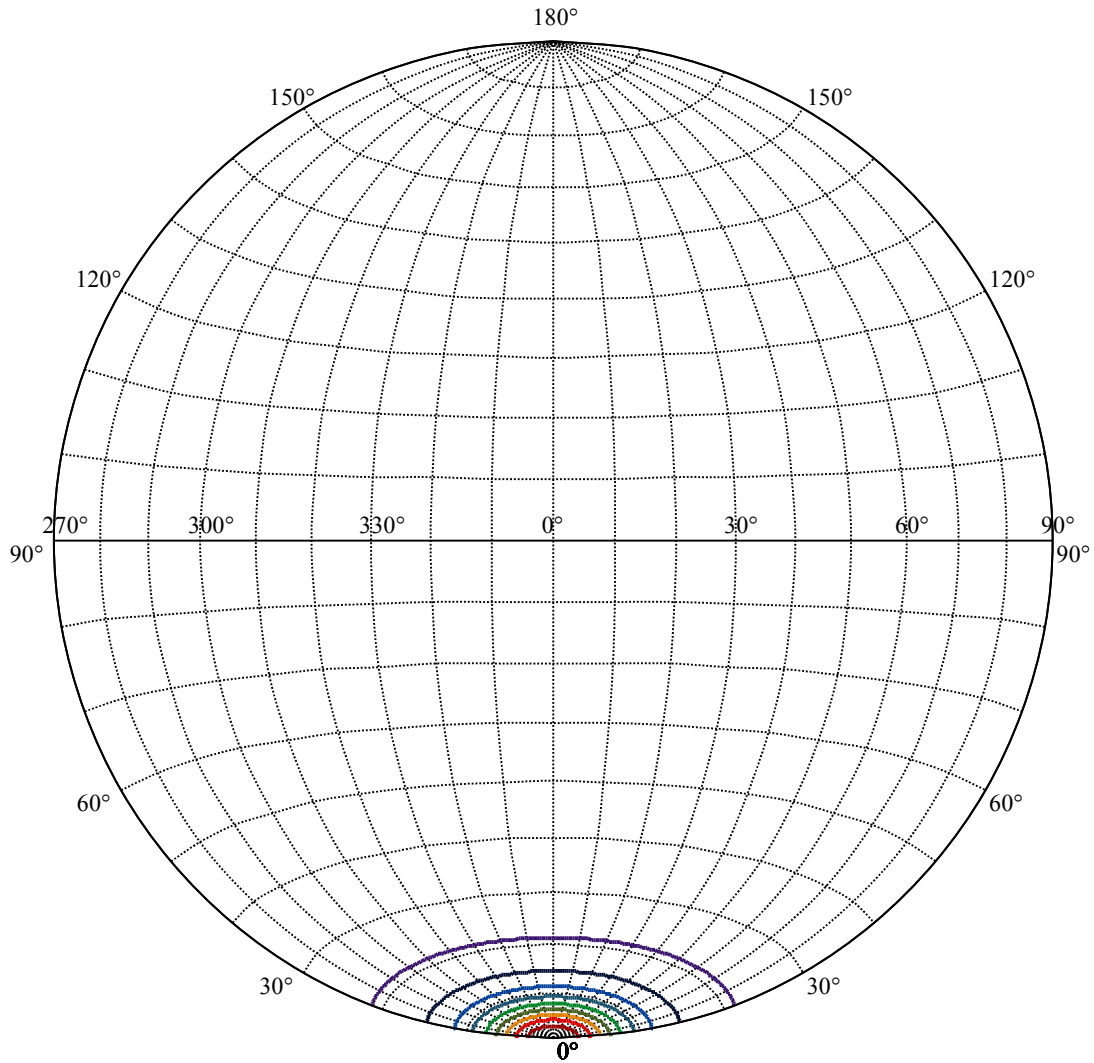
C0(Max): —————
C0/C180: —————
C90/C270: —————

Field angle(10%Imax):C0/180Left:21.3 Right:21.3
:C90/270Left:21.3 Right:21.3

Beam Angle(50%Imax):C0/180Left:7.8 Right:7.8
:C90/270Left:7.8 Right:7.8



(10%Imax) 1224.8	—
(20%Imax) 2449.6	—
(30%Imax) 3674.4	—
(40%Imax) 4899.19	—
(50%Imax) 6123.99	—
(60%Imax) 7348.79	—
(70%Imax) 8573.59	—
(80%Imax) 9798.39	—
(90%Imax) 11023.2	—



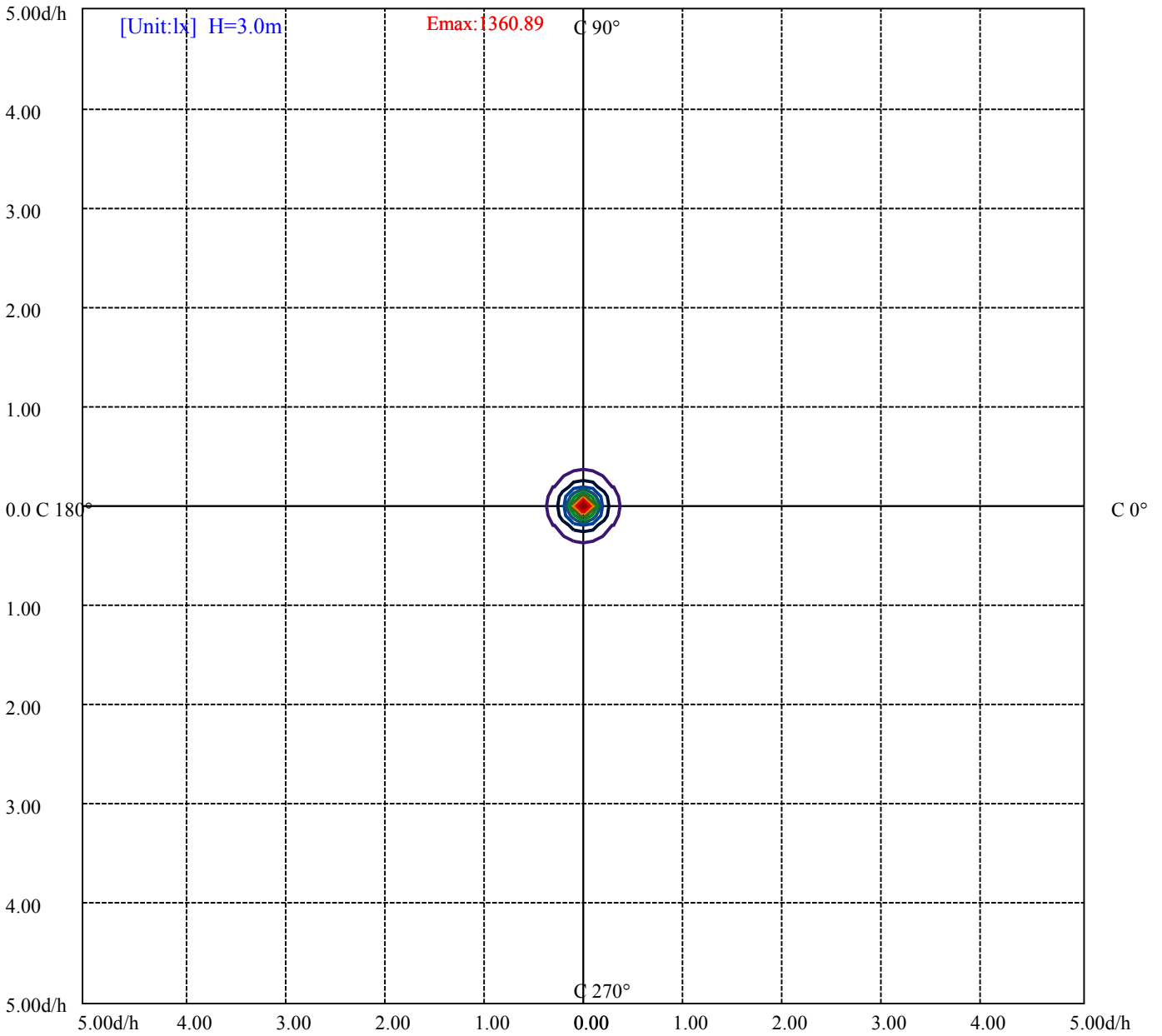
House

[Unit:cd]

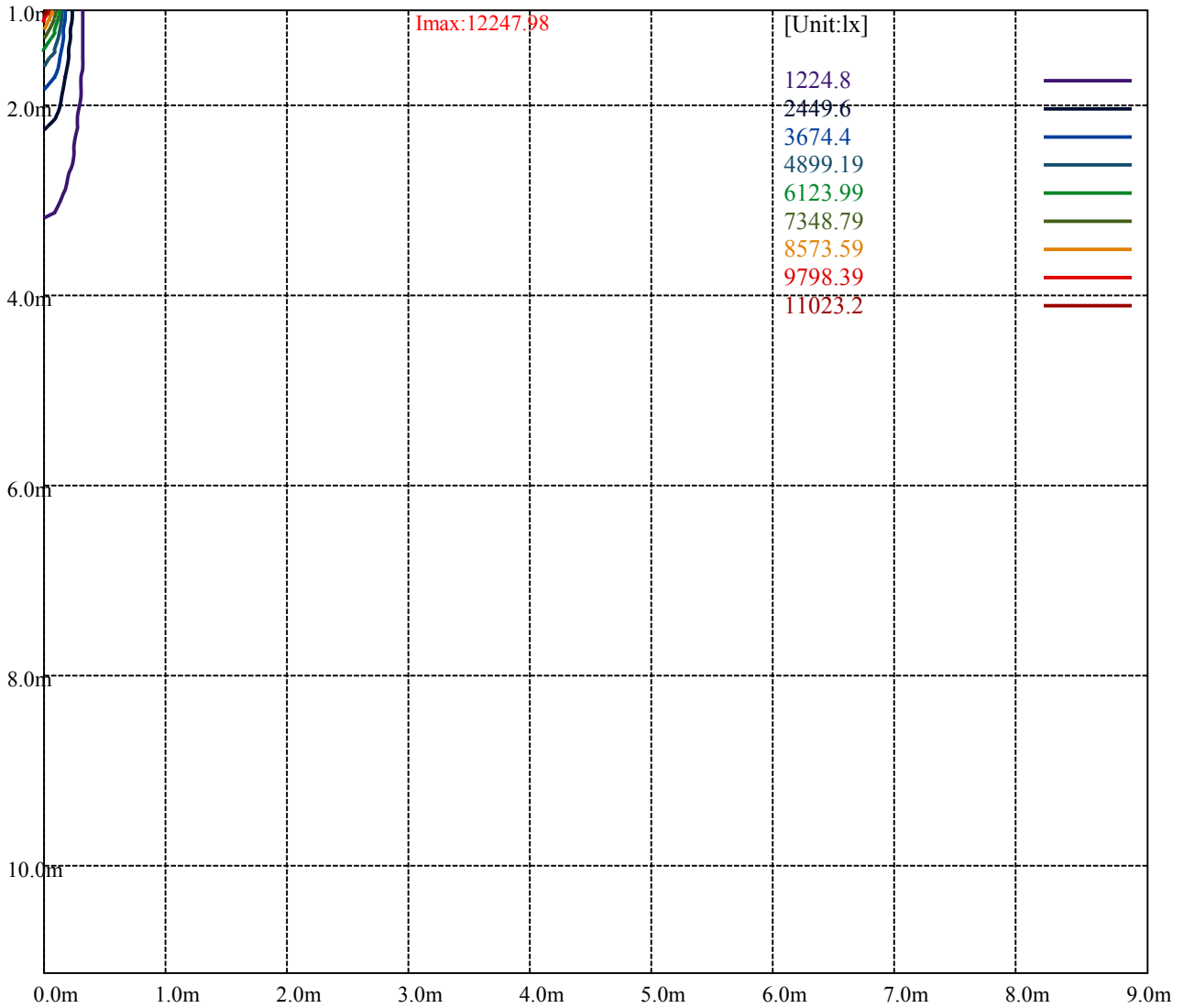
Road

Imax:12247.98

(10%Imax) 1224.8	—
(20%Imax) 2449.6	—
(30%Imax) 3674.4	—
(40%Imax) 4899.19	—
(50%Imax) 6123.99	—
(60%Imax) 7348.79	—
(70%Imax) 8573.59	—
(80%Imax) 9798.39	—
(90%Imax) 11023.2	—



(10%Emax) 136.0878	—
(20%Emax) 272.1767	—
(30%Emax) 408.2644	—
(40%Emax) 544.3533	—
(50%Emax) 680.4412	—
(60%Emax) 816.53	—
(70%Emax) 952.6177	—
(80%Emax) 1088.707	—
(90%Emax) 1224.8	—



Luminance Table

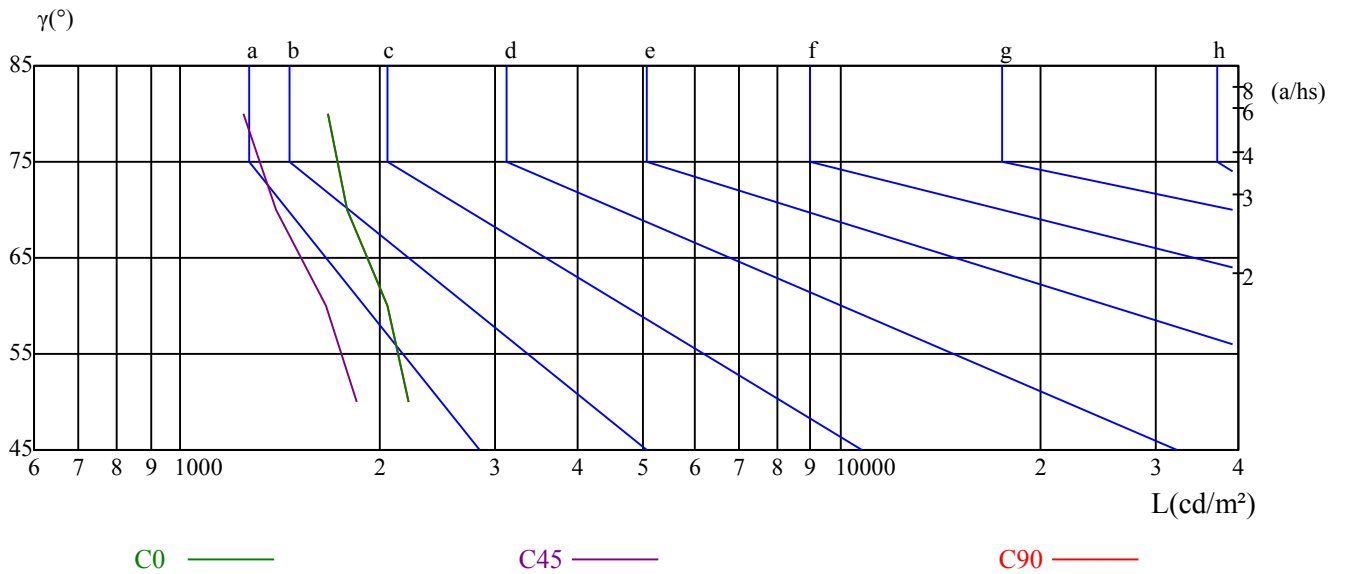
γ	45	50	55	60	65	70	75	80	85
C0	0	2215	0	2054	0	1792	0	1672	0
C45	0	1845	0	1657	0	1396	0	1249	0
C90	0	2215	0	2054	0	1792	0	1672	0

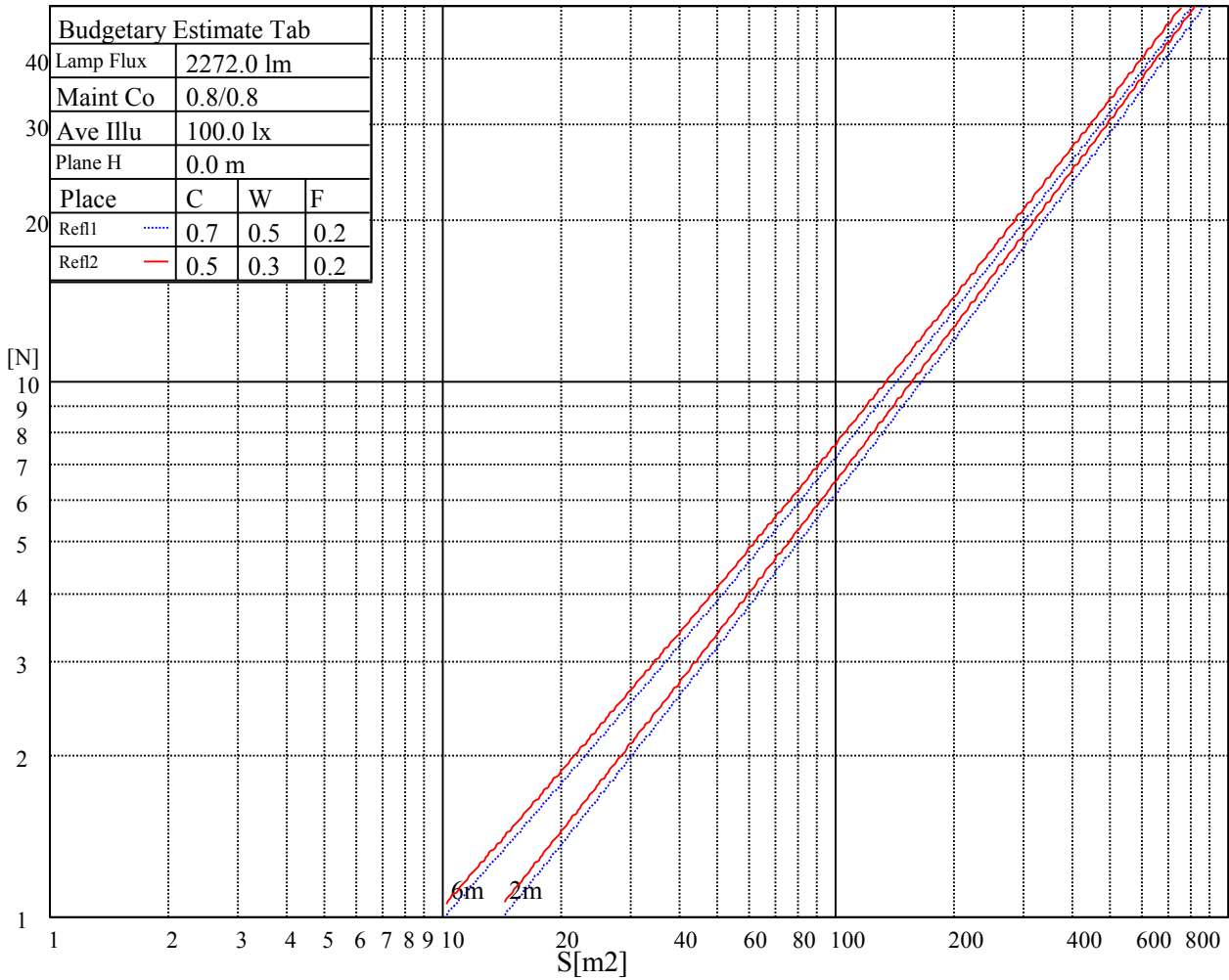
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
15329	15329	15329	22015	22015	22015	63257	63257	63257

Glare Table

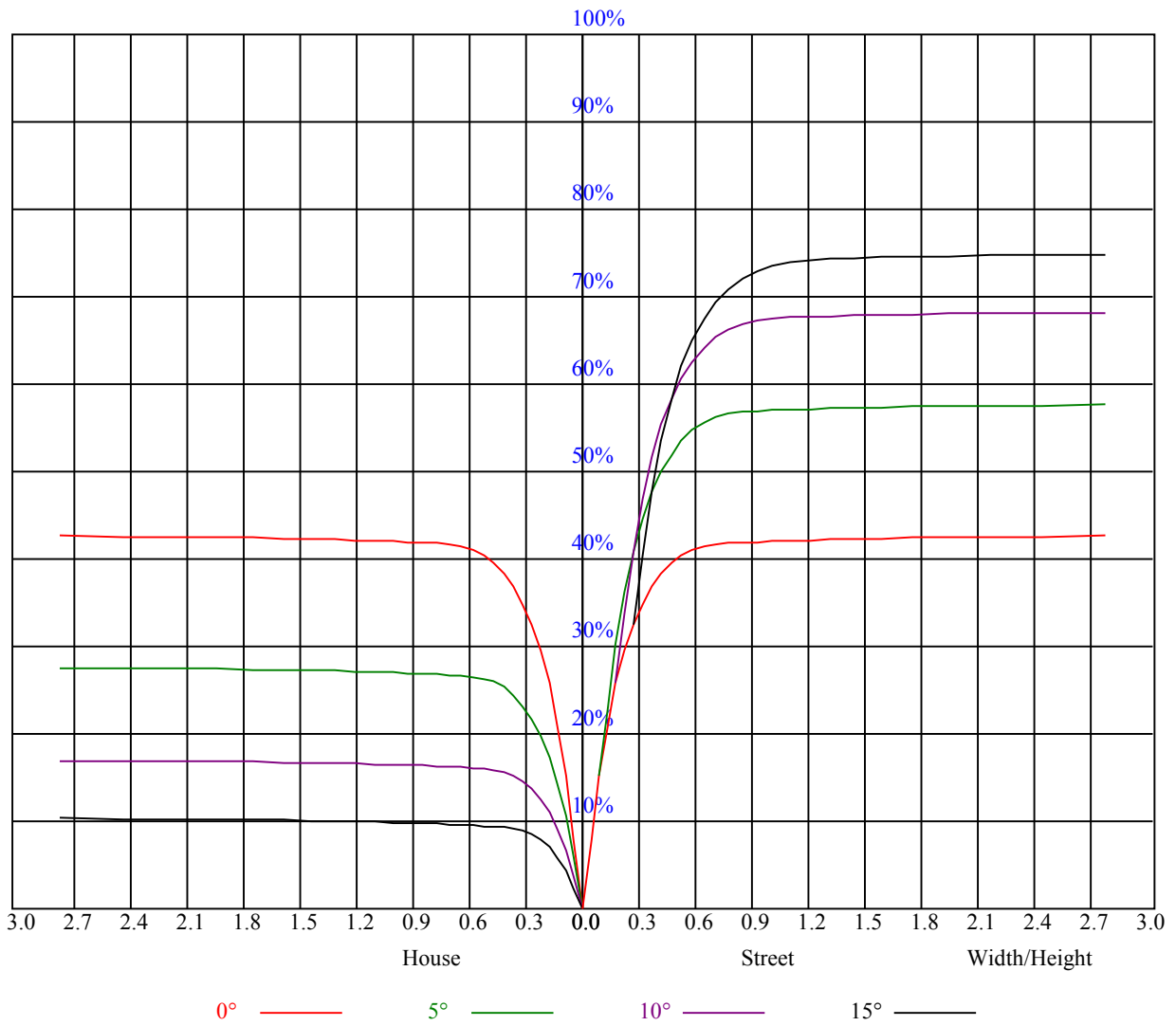
Glare	Quality	Service Values Illuminance(lx)							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300

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	1.03	1.03	1.03	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.86
1	0.96	0.94	0.92	0.94	0.93	0.91	0.91	0.89	0.88	0.88	0.87	0.86	0.85	0.84	0.83	0.82
2	0.91	0.88	0.86	0.90	0.87	0.85	0.87	0.85	0.83	0.85	0.83	0.82	0.82	0.81	0.80	0.79
3	0.87	0.84	0.81	0.86	0.83	0.81	0.84	0.81	0.79	0.82	0.80	0.78	0.80	0.78	0.77	0.76
4	0.84	0.80	0.77	0.83	0.79	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.78	0.76	0.74	0.73
5	0.81	0.77	0.74	0.80	0.76	0.74	0.78	0.75	0.73	0.77	0.75	0.73	0.76	0.74	0.72	0.71
6	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.74	0.72	0.70	0.69
7	0.75	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.72	0.70	0.68	0.67
8	0.73	0.69	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.70	0.68	0.66	0.65
9	0.71	0.67	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.69	0.66	0.64	0.63
10	0.69	0.65	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.67	0.64	0.63	0.62



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	12250.05	12250.05	11132.40	8930.15	6661.82	4900.02	3864.96	2912.48	2279.33
45.0	12167.46	12343.64	11490.27	9387.12	7173.85	5252.38	3969.57	3050.12	2374.03
90.0	12277.58	12057.35	10559.27	8431.34	6306.71	4661.63	3621.61	2758.88	2198.40
135.0	12283.08	11859.15	10306.56	7966.66	6039.69	4520.13	3463.05	2818.89	2153.26
180.0	12277.58	10875.84	9082.65	6909.58	5039.31	3788.43	2991.21	2334.39	1879.63
225.0	12167.46	10951.82	8602.01	6488.95	4789.91	3652.99	2839.26	2223.73	1814.66
270.0	12277.58	11633.42	9783.52	7322.50	5560.70	4173.28	3198.78	2624.54	1975.42
315.0	12283.08	11798.59	10034.03	7693.58	5711.55	4240.99	3308.89	2544.16	2019.47
360.0	12250.05	12250.05	11132.40	8930.15	6661.82	4900.02	3864.96	2912.48	2279.33
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	1850.45	1497.53	1248.13	1042.77	876.50	749.32	584.15	389.80	233.38
45.0	1906.60	1553.69	1294.93	1084.06	913.94	772.99	597.91	416.23	283.54
90.0	1737.58	1425.41	1160.04	976.54	820.01	685.18	500.96	313.38	170.01
135.0	1732.07	1407.24	1184.26	971.75	827.50	685.45	519.73	317.68	147.17
180.0	1537.73	1282.26	1063.69	903.26	770.13	600.22	389.85	195.40	71.63
225.0	1478.26	1239.32	1031.26	866.09	728.29	555.57	355.83	173.04	72.95
270.0	1576.82	1305.94	1120.95	931.00	808.23	636.45	447.61	282.99	113.64
315.0	1631.32	1343.38	1089.57	923.52	799.91	649.17	478.11	284.70	133.46
360.0	1850.45	1497.53	1248.13	1042.77	876.50	749.32	584.15	389.80	233.38
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	83.08	51.59	39.86	31.11	25.60	22.13	20.10	18.55	17.62
45.0	107.69	61.33	45.31	34.91	28.63	24.33	22.02	20.15	19.16
90.0	66.67	46.91	36.83	29.23	24.94	22.19	20.32	18.83	18.00
135.0	62.60	44.54	34.58	27.97	23.67	20.76	19.21	17.84	16.96
180.0	48.67	37.16	28.46	24.11	21.09	19.16	17.89	16.90	16.35
225.0	48.56	36.89	29.18	24.33	21.36	19.43	18.00	17.07	16.52
270.0	58.64	41.90	32.21	26.81	22.96	20.37	18.99	17.78	17.01
315.0	60.18	44.65	35.02	28.41	24.17	21.20	19.43	18.00	17.12
360.0	83.08	51.59	39.86	31.11	25.60	22.13	20.10	18.55	17.62
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	16.85	16.35	16.08	15.86	15.80	15.86	15.25	14.20	13.16
45.0	18.28	17.45	16.79	16.35	16.02	15.91	15.47	14.42	13.27
90.0	17.45	17.01	16.68	16.57	16.52	16.57	15.25	13.76	12.77
135.0	16.52	16.30	16.19	15.97	16.02	16.08	15.20	13.87	12.77
180.0	15.97	15.75	15.58	15.58	15.58	15.09	14.15	13.21	12.44
225.0	16.13	15.91	15.80	15.80	15.64	15.14	14.09	13.16	12.39
270.0	16.52	16.19	15.91	15.91	15.91	15.58	14.70	13.38	12.55
315.0	16.57	16.08	15.80	15.64	15.53	15.58	14.70	13.43	12.66
360.0	16.85	16.35	16.08	15.86	15.80	15.86	15.25	14.20	13.16
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	12.39	11.95	11.56	11.12	10.74	10.30	9.97	9.63	9.30
45.0	12.55	12.06	11.62	11.18	10.79	10.35	9.97	9.58	9.25
90.0	12.11	11.73	11.29	10.90	10.46	10.02	9.63	9.25	8.86
135.0	12.06	11.67	11.23	10.85	10.41	9.97	9.63	9.25	8.92
180.0	11.95	11.51	11.12	10.68	10.30	9.91	9.58	9.30	8.86
225.0	11.89	11.45	11.01	10.63	10.13	9.80	9.41	9.14	8.70
270.0	12.00	11.62	11.23	10.85	10.35	9.91	9.52	9.14	8.81
315.0	12.00	11.56	11.18	10.79	10.35	9.97	9.58	9.25	8.92
360.0	12.39	11.95	11.56	11.12	10.74	10.30	9.97	9.63	9.30

Intensity data(cd)

C/ γ (°)	90.0
0.0	8.75
45.0	8.81
90.0	8.59
135.0	8.59
180.0	8.59
225.0	8.59
270.0	8.59
315.0	8.59
360.0	8.75