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Nata

LumCAT: 1405-N	
Luminaire: 92.70.044.00	
Report No: NATA0100	Voltage(V): 38.4000
Test No: GC2018070610	Current(A): 0.2000
LampCAT: NICHIA NTCWT012B-V3	Power (W): 7.6800
Lamp flux(lm): 732.5	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 39	Width(mm): 39
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 631.78
Efficiency(%): 85.26%
Lumens(lm)/Power(W): 82.26
Central intensity(cd): 1845.491
Maximum intensity(cd): 1845.491
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=19.8
 [C90/270]Total=19.8
Field angle(10%Imax): [C0/180]Total=68.1
 [C90/270]Total=68.1
Maximum s/h(1/2): C0_180=0.34 C90_270=0.34
Maximum s/h(1/4): C0_180=0.38 C90_270=0.38
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 85.49%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 95.252%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1845.491	1.766	1.766	.238%	.280%
2.0	1785.617	13.667	15.433	1.844%	2.443%
4.0	1622.099	24.816	40.249	3.349%	6.371%
6.0	1390.518	31.877	72.126	4.302%	11.416%
8.0	1136.103	34.677	106.802	4.680%	16.905%
10.0	911.245	34.703	141.506	4.683%	22.398%
12.0	721.824	32.914	174.419	4.442%	27.608%
14.0	570.928	30.292	204.711	4.088%	32.402%
16.0	465.894	28.164	232.875	3.801%	36.860%
18.0	389.662	26.408	259.283	3.564%	41.040%
20.0	338.267	25.373	284.656	3.424%	45.056%
22.0	301.372	24.760	309.415	3.341%	48.975%
24.0	274.009	24.442	333.858	3.299%	52.844%
26.0	252.564	24.282	358.139	3.277%	56.688%
28.0	233.047	23.995	382.134	3.238%	60.486%
30.0	216.915	23.786	405.921	3.210%	64.251%
32.0	200.412	23.292	429.212	3.143%	67.937%
34.0	184.776	22.661	451.873	3.058%	71.524%
36.0	167.509	21.593	473.466	2.914%	74.942%
38.0	149.698	20.213	493.679	2.728%	78.141%
40.0	130.690	18.424	512.103	2.486%	81.058%
42.0	111.627	16.381	528.484	2.211%	83.650%
44.0	93.782	14.287	542.771	1.928%	85.912%
46.0	77.733	12.263	555.034	1.655%	87.853%
48.0	64.072	10.443	565.477	1.409%	89.506%
50.0	52.386	8.801	574.278	1.188%	90.899%
52.0	43.646	7.543	581.821	1.018%	92.093%
54.0	36.578	6.490	588.311	.876%	93.120%
56.0	31.128	5.660	593.971	.764%	94.016%
58.0	26.730	4.971	598.942	.671%	94.803%
60.0	23.323	4.430	603.372	.598%	95.504%
62.0	20.364	3.943	607.315	.532%	96.128%
64.0	17.880	3.524	610.839	.476%	96.686%
66.0	15.822	3.170	614.009	.428%	97.188%
68.0	13.936	2.834	616.843	.382%	97.636%
70.0	12.312	2.537	619.381	.342%	98.038%
72.0	10.770	2.246	621.627	.303%	98.394%
74.0	9.463	1.995	623.622	.269%	98.709%

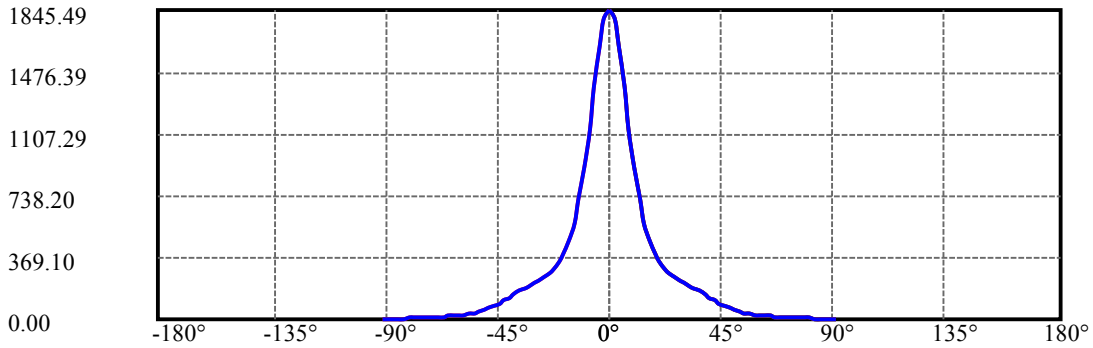
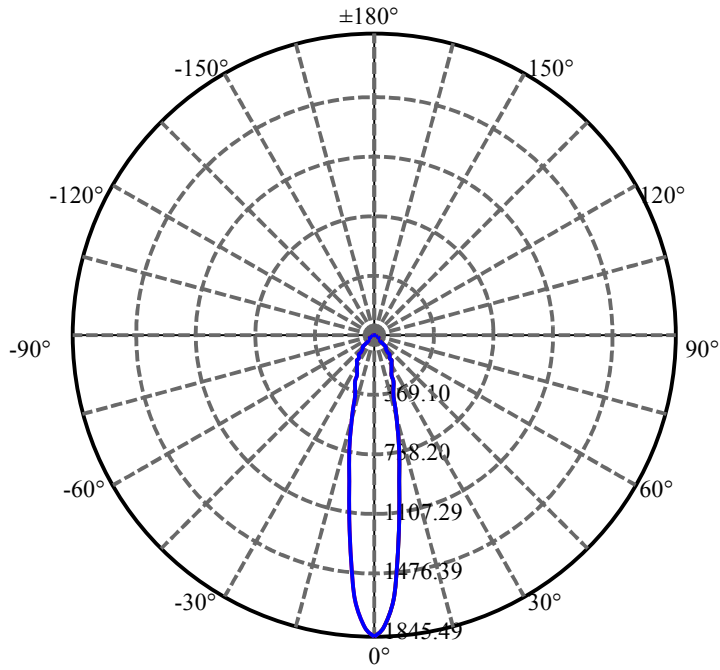
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.128	1.730	625.352	.233%	98.983%
78.0	6.999	1.501	626.853	.203%	99.221%
80.0	5.877	1.269	628.122	.171%	99.422%
82.0	4.941	1.073	629.196	.145%	99.592%
84.0	4.109	0.896	630.092	.121%	99.733%
86.0	3.475	0.760	630.852	.103%	99.854%
88.0	2.890	0.634	631.486	.085%	99.954%
90.0	2.650	0.291	631.776	.039%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	405.92	55.42%	64.25%
0-40	512.10	69.92%	81.06%
0-60	603.37	82.38%	95.50%
0-90	631.49	86.21%	99.95%
0-120	631.49	86.21%	99.95%
0-180	631.78	86.25%	100.00%
60-90	32.54	4.44%	5.15%
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%
0-39.27	505.42	69.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	141.51
10-20	143.15
20-30	121.26
30-40	106.18
40-50	62.18
50-60	29.09
60-70	16.01
70-80	8.74
80-90	3.36
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



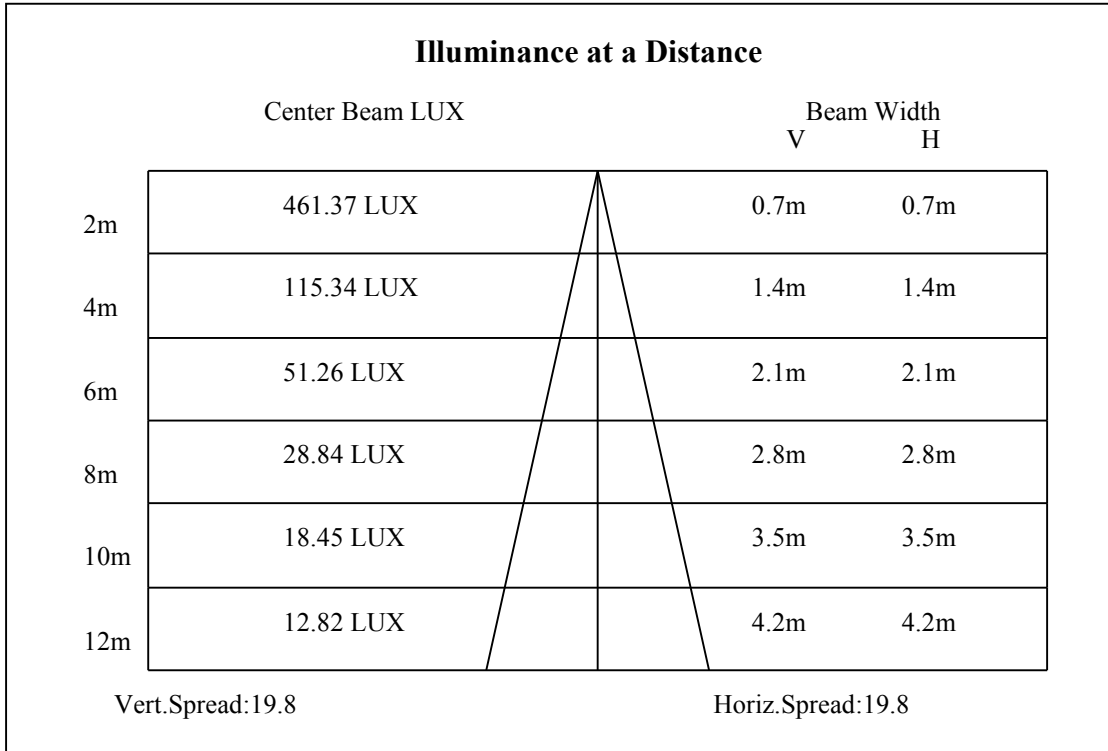
C0(Max): —————

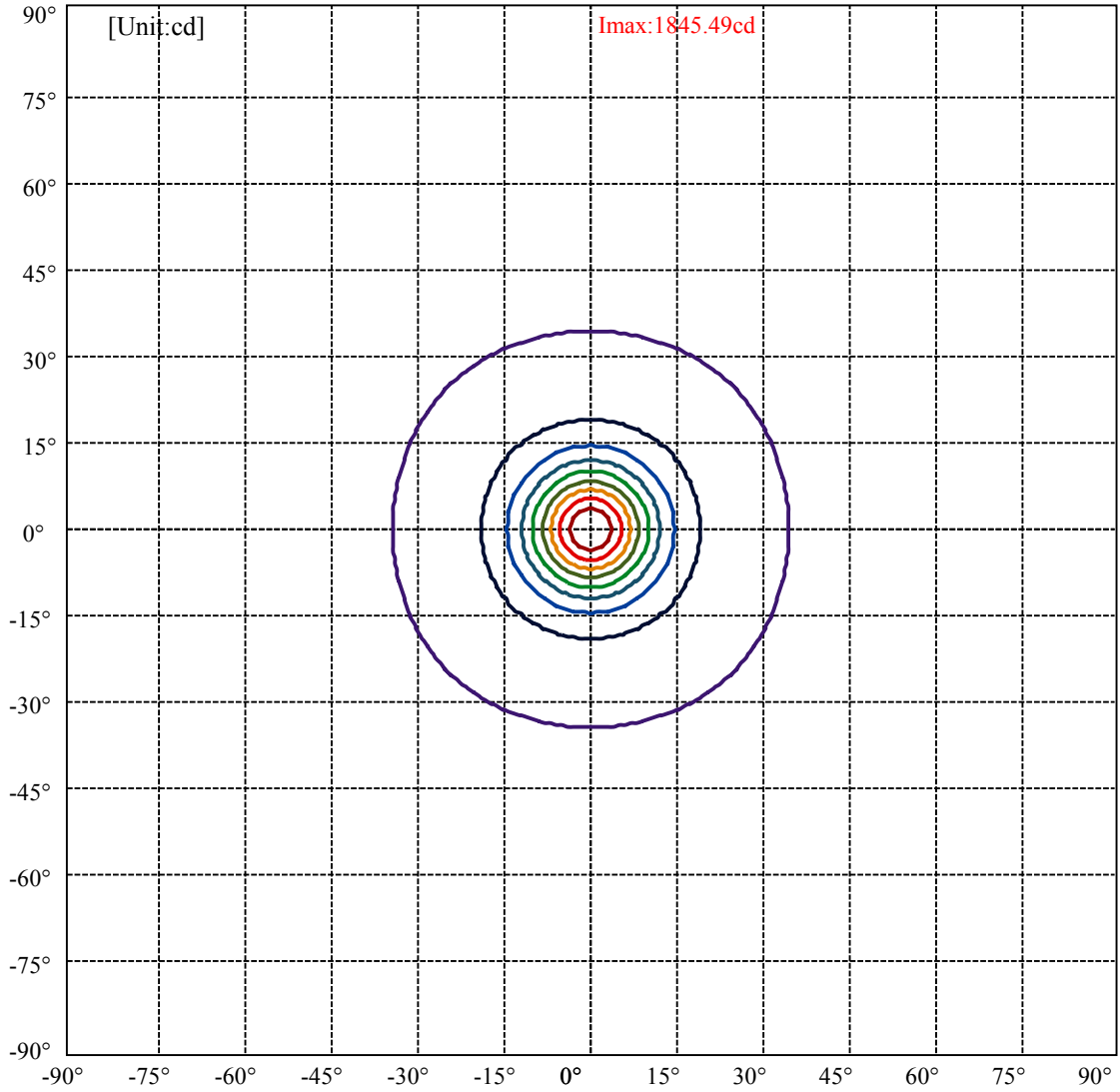
C0/C180: —————

C90/C270: —————

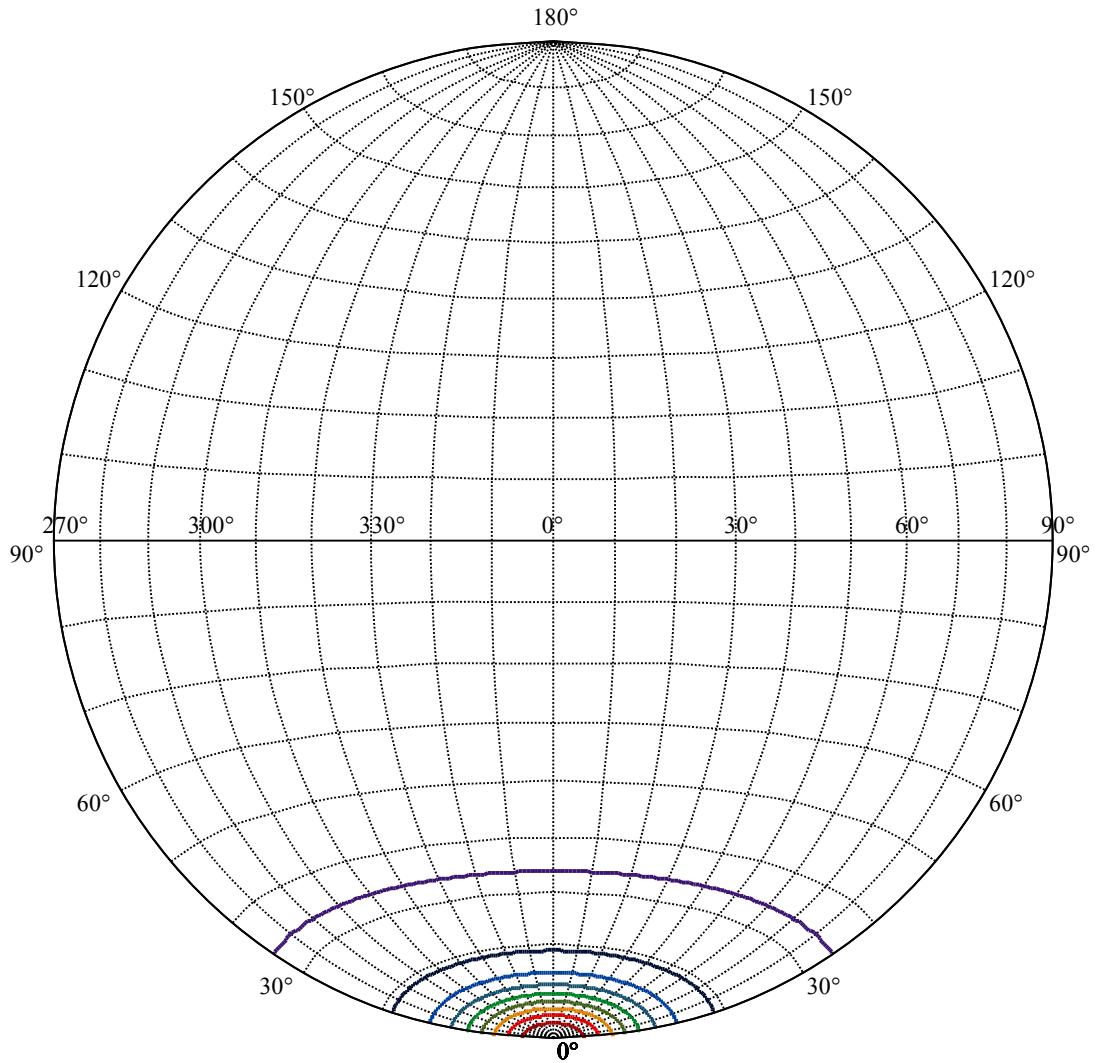
Field angle(10%Imax):C0/180Left:34.0 Right:34.0
:C90/270Left:34.0 Right:34.0

Beam Angle(50%Imax):C0/180Left:9.9 Right:9.9
:C90/270Left:9.9 Right:9.9





(10%Imax) 184.549	—
(20%Imax) 369.098	—
(30%Imax) 553.647	—
(40%Imax) 738.196	—
(50%Imax) 922.745	—
(60%Imax) 1107.29	—
(70%Imax) 1291.84	—
(80%Imax) 1476.39	—
(90%Imax) 1660.94	—



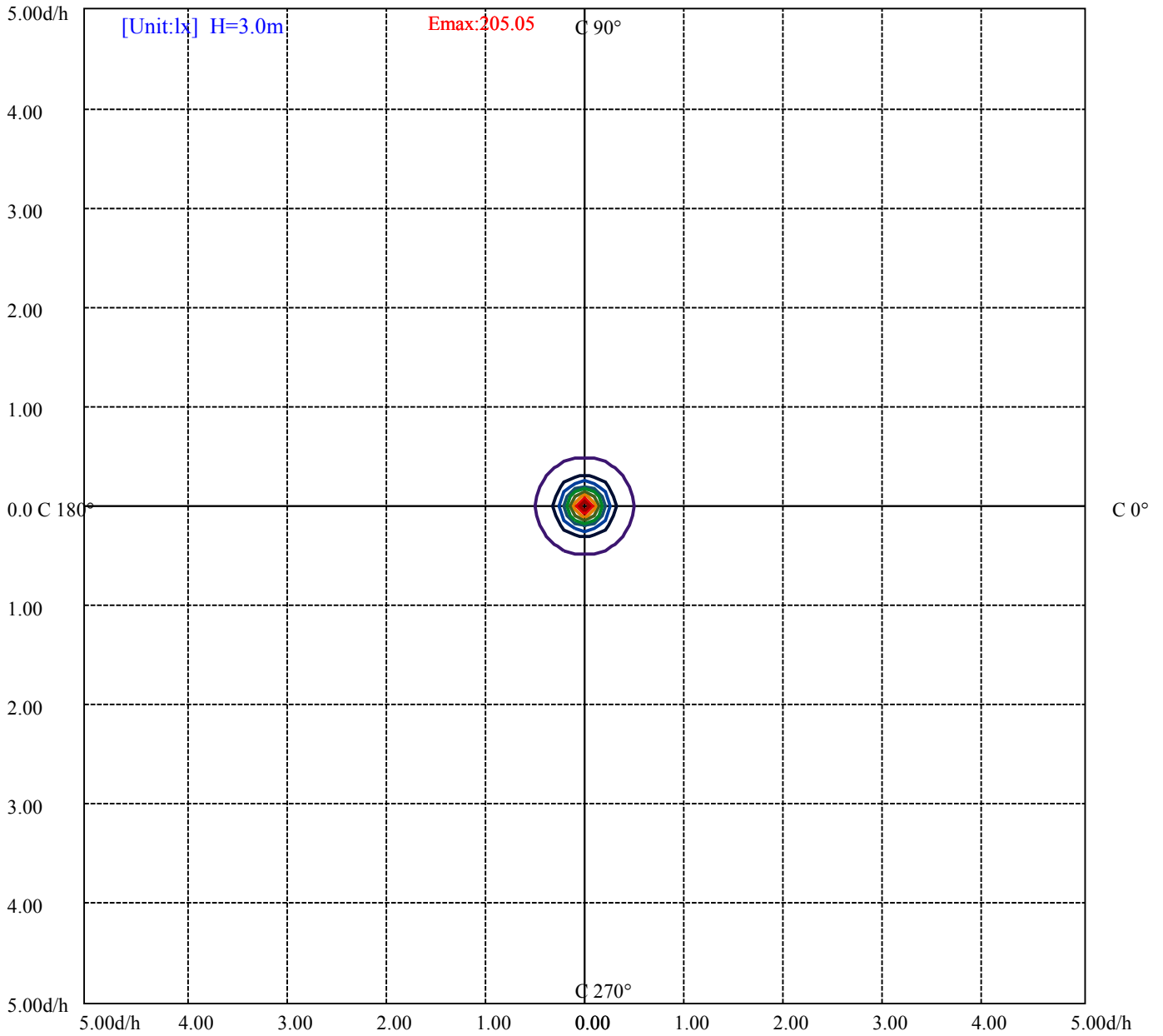
House

[Unit:cd]

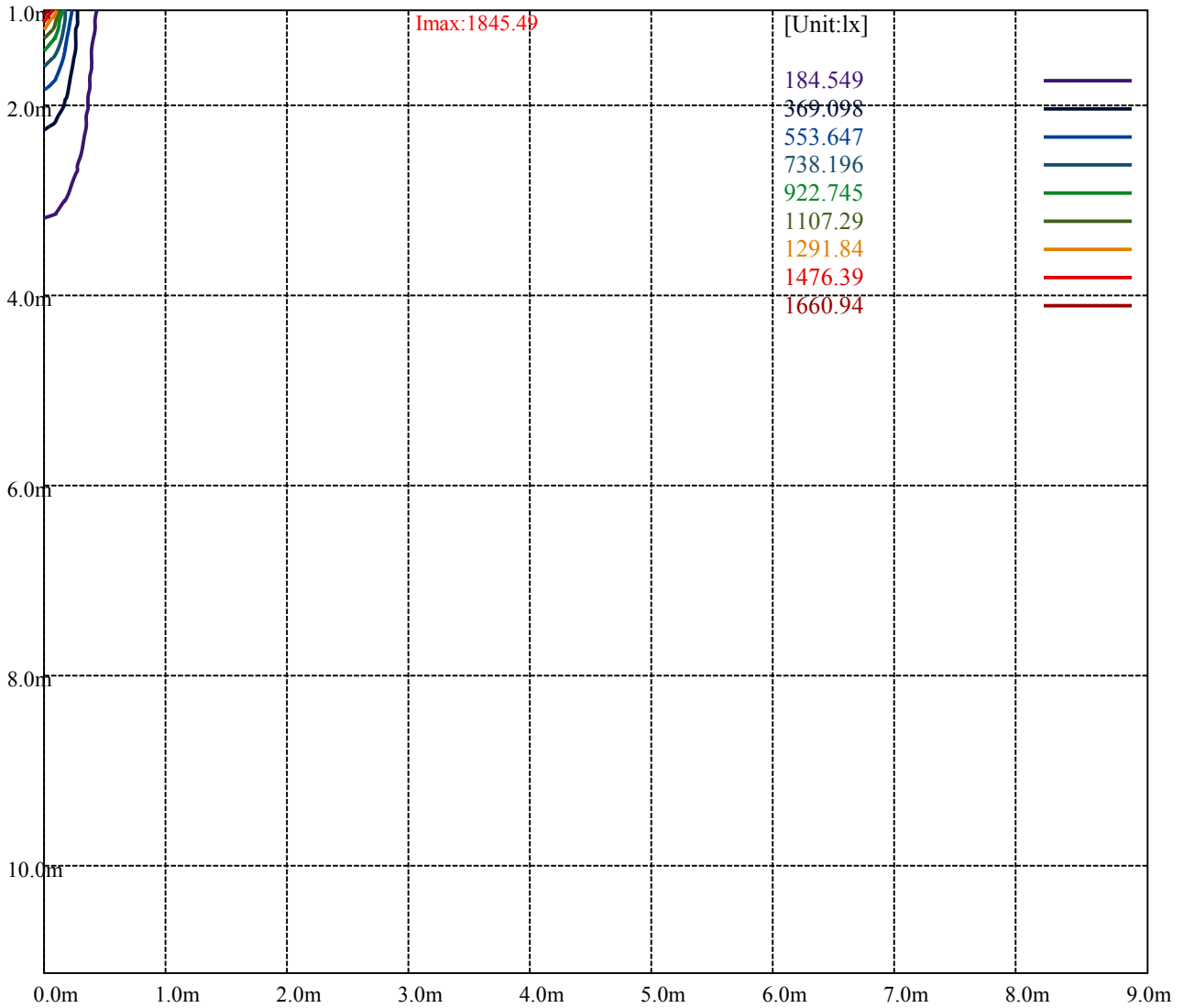
Road

Imax:1845.49

(10%Imax) 184.549	—
(20%Imax) 369.098	—
(30%Imax) 553.647	—
(40%Imax) 738.196	—
(50%Imax) 922.745	—
(60%Imax) 1107.29	—
(70%Imax) 1291.84	—
(80%Imax) 1476.39	—
(90%Imax) 1660.94	—



(10%Emax) 20.50544	—
(20%Emax) 41.01078	—
(30%Emax) 61.51622	—
(40%Emax) 82.02155	—
(50%Emax) 102.527	—
(60%Emax) 123.0322	—
(70%Emax) 143.5378	—
(80%Emax) 164.0433	—
(90%Emax) 184.5489	—



Luminance Table

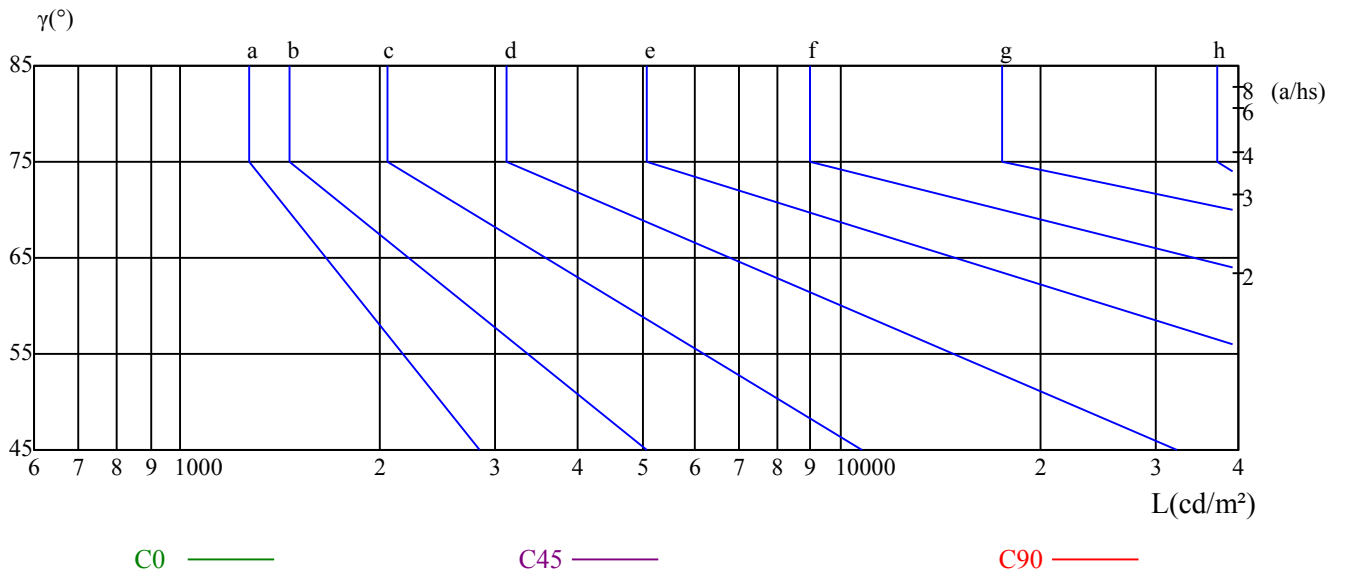
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

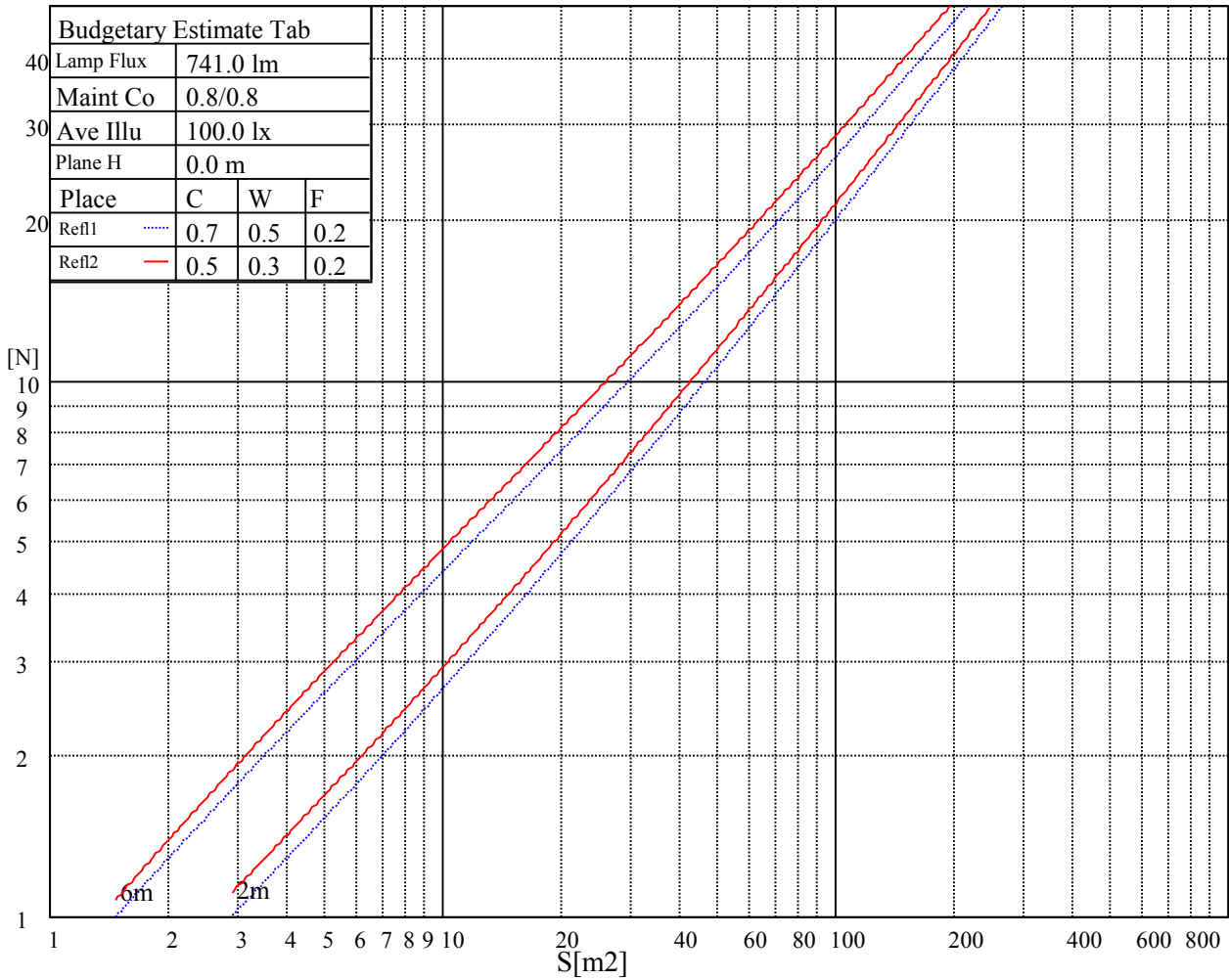
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

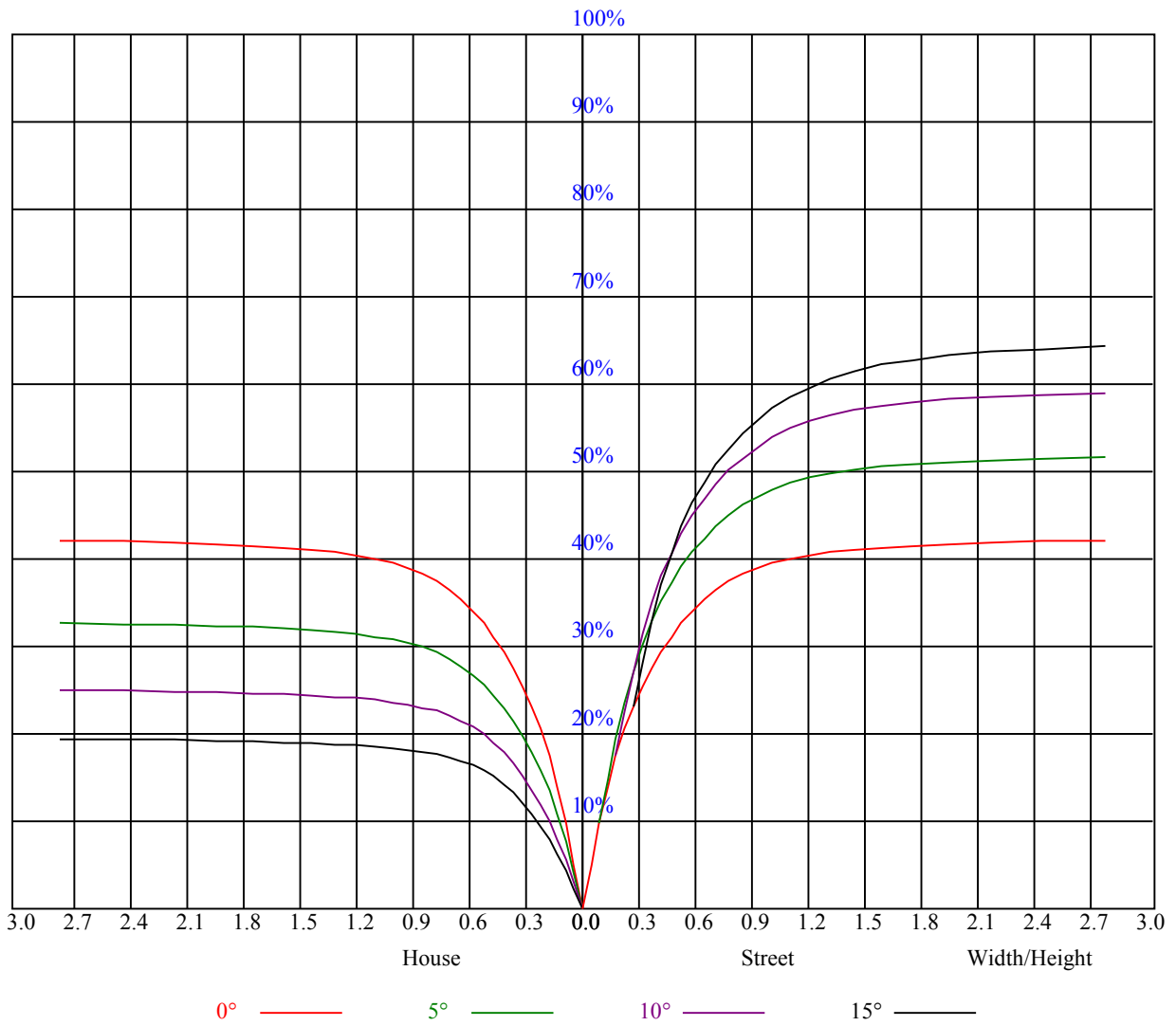
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.02	1.02	1.02	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.87	0.87	0.87	0.85
1	0.94	0.91	0.89	0.92	0.90	0.88	0.88	0.87	0.85	0.85	0.84	0.82	0.82	0.81	0.80	0.78
2	0.87	0.83	0.80	0.85	0.82	0.79	0.82	0.80	0.77	0.80	0.77	0.75	0.77	0.75	0.74	0.72
3	0.81	0.76	0.72	0.79	0.75	0.72	0.77	0.74	0.71	0.75	0.72	0.69	0.73	0.71	0.68	0.67
4	0.75	0.70	0.66	0.74	0.70	0.66	0.72	0.68	0.65	0.71	0.67	0.64	0.69	0.66	0.64	0.62
5	0.71	0.65	0.62	0.70	0.65	0.61	0.68	0.64	0.61	0.67	0.63	0.60	0.65	0.62	0.60	0.58
6	0.66	0.61	0.57	0.66	0.61	0.57	0.64	0.60	0.57	0.63	0.59	0.56	0.62	0.59	0.56	0.55
7	0.63	0.58	0.54	0.62	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.53	0.59	0.56	0.53	0.52
8	0.60	0.55	0.51	0.59	0.54	0.51	0.58	0.54	0.51	0.57	0.53	0.50	0.56	0.53	0.50	0.49
9	0.57	0.52	0.48	0.56	0.52	0.48	0.56	0.51	0.48	0.55	0.51	0.48	0.54	0.50	0.48	0.47
10	0.54	0.49	0.46	0.54	0.49	0.46	0.53	0.49	0.46	0.52	0.49	0.46	0.52	0.48	0.46	0.45



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	1843.84	1775.57	1602.69	1340.62	1085.71	857.78	660.68	524.14	426.14
45.0	1844.94	1811.36	1670.41	1432.57	1188.12	929.35	720.14	565.43	458.07
90.0	1846.04	1787.13	1617.56	1394.03	1098.21	895.00	715.95	560.20	461.54
135.0	1847.14	1806.40	1664.91	1427.61	1210.14	950.82	748.77	594.61	477.89
180.0	1843.84	1782.18	1613.15	1387.42	1095.62	900.45	719.04	567.52	471.56
225.0	1844.94	1753.00	1572.41	1348.88	1089.40	888.83	720.14	571.27	465.01
270.0	1846.04	1800.34	1657.75	1435.87	1223.90	990.46	795.01	635.35	512.58
315.0	1847.14	1768.96	1577.92	1357.14	1097.71	877.27	694.87	548.91	454.38
360.0	1843.84	1775.57	1602.69	1340.62	1085.71	857.78	660.68	524.14	426.14
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	362.27	316.02	286.84	260.47	242.80	225.29	210.98	195.67	179.21
45.0	382.64	334.74	302.26	278.59	255.68	238.01	223.03	206.74	191.21
90.0	383.41	331.71	294.88	266.91	251.33	224.52	207.78	191.05	176.62
135.0	400.26	347.96	306.66	278.59	254.75	235.48	218.52	201.73	185.65
180.0	393.49	342.12	306.55	280.07	258.05	241.42	223.58	206.30	190.27
225.0	396.02	344.54	304.35	278.70	256.78	235.53	220.83	203.38	187.03
270.0	418.43	357.87	313.82	280.24	255.35	235.20	219.40	204.31	189.23
315.0	380.77	331.16	295.60	268.51	245.77	228.92	211.20	194.13	178.99
360.0	362.27	316.02	286.84	260.47	242.80	225.29	210.98	195.67	179.21
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	162.97	144.63	124.87	104.66	87.48	70.75	57.86	47.79	40.08
45.0	174.42	157.13	136.87	116.94	98.99	81.54	68.77	55.22	45.59
90.0	159.44	141.77	123.71	105.38	87.43	72.45	59.68	48.67	40.85
135.0	168.69	150.41	132.08	112.04	95.19	78.24	63.98	52.74	43.88
180.0	171.67	152.78	134.89	116.00	96.46	82.47	67.99	56.21	46.63
225.0	169.35	150.96	131.20	113.25	94.53	78.07	64.31	52.52	43.94
270.0	172.22	156.14	136.32	117.05	100.31	83.03	69.21	55.99	46.25
315.0	161.32	143.75	125.58	107.69	89.85	75.32	60.78	49.94	41.95
360.0	162.97	144.63	124.87	104.66	87.48	70.75	57.86	47.79	40.08
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	33.80	29.18	25.44	22.13	19.66	17.23	15.36	13.60	12.06
45.0	38.54	32.21	27.31	24.00	20.76	18.11	16.02	13.98	12.28
90.0	33.97	28.90	25.05	21.86	19.10	16.85	14.98	13.21	11.84
135.0	36.56	30.89	26.70	23.18	20.59	18.00	15.97	14.15	12.50
180.0	38.76	33.42	28.46	24.78	21.36	18.94	16.57	14.65	12.99
225.0	37.11	31.60	27.03	23.84	20.70	18.06	16.02	14.09	12.22
270.0	38.81	32.92	28.13	24.33	21.25	18.50	16.41	14.37	12.66
315.0	35.07	29.90	25.71	22.46	19.49	17.34	15.25	13.43	11.95
360.0	33.80	29.18	25.44	22.13	19.66	17.23	15.36	13.60	12.06
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	10.46	9.19	7.87	6.66	5.67	4.68	3.85	3.25	2.75
45.0	10.79	9.41	8.04	6.99	5.89	4.96	4.13	3.52	2.97
90.0	10.35	9.14	7.93	6.88	5.78	4.96	4.13	3.58	2.92
135.0	10.96	9.69	8.31	7.10	6.06	5.12	4.24	3.69	2.86
180.0	11.29	9.97	8.53	7.27	6.11	5.12	4.29	3.63	2.92
225.0	10.85	9.52	8.09	7.05	5.84	4.84	4.07	3.41	2.92
270.0	11.12	9.74	8.37	7.32	6.11	5.07	4.18	3.41	2.92
315.0	10.35	9.03	7.87	6.72	5.56	4.79	3.96	3.30	2.86
360.0	10.46	9.19	7.87	6.66	5.67	4.68	3.85	3.25	2.75

Intensity data(cd)

C/γ(°)	90.0
0.0	2.59
45.0	2.70
90.0	2.81
135.0	2.64
180.0	2.59
225.0	2.59
270.0	2.64
315.0	2.64
360.0	2.59