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Nata

LumCAT: 1653-S	
Luminaire: 92.70.044.00	
Report No: NATA0100	Voltage(V): 38.5000
Test No: GC2018070616	Current(A): 0.2000
LampCAT: NICHIA NTCWT012B-V3	Power (W): 7.7000
Lamp flux(lm): 756.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 47	Width(mm): 47
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 656.96
Efficiency(%): 86.90%
Lumens(lm)/Power(W): 85.89
Central intensity(cd): 4666.856
Maximum intensity(cd): 4666.856
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=15.9
 [C90/270]Total=15.9
Field angle(10%Imax): [C0/180]Total=33.3
 [C90/270]Total=33.3
Maximum s/h(1/2): C0_180=0.27 C90_270=0.27
Maximum s/h(1/4): C0_180=0.28 C90_270=0.28
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 87.48%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.689%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4666.856	4.466	4.466	.591%	.680%
2.0	4483.449	34.316	38.782	4.539%	5.903%
4.0	3922.562	60.009	98.791	7.938%	15.038%
6.0	3163.954	72.532	171.323	9.594%	26.078%
8.0	2315.631	70.679	242.002	9.349%	36.837%
10.0	1530.823	58.299	300.301	7.711%	45.711%
12.0	1040.311	47.436	347.737	6.275%	52.931%
14.0	688.088	36.508	384.245	4.829%	58.489%
16.0	498.625	30.142	414.387	3.987%	63.077%
18.0	397.652	26.949	441.337	3.565%	67.179%
20.0	335.775	25.186	466.523	3.332%	71.013%
22.0	296.988	24.399	490.923	3.227%	74.727%
24.0	272.467	24.305	515.227	3.215%	78.426%
26.0	254.292	24.448	539.675	3.234%	82.148%
28.0	235.710	24.269	563.944	3.210%	85.842%
30.0	207.095	22.709	586.653	3.004%	89.299%
32.0	165.795	19.268	605.922	2.549%	92.232%
34.0	117.167	14.369	620.291	1.901%	94.419%
36.0	70.596	9.100	629.392	1.204%	95.804%
38.0	35.532	4.798	634.189	.635%	96.534%
40.0	16.799	2.368	636.557	.313%	96.895%
42.0	9.511	1.396	637.953	.185%	97.107%
44.0	7.495	1.142	639.095	.151%	97.281%
46.0	6.208	0.979	640.074	.130%	97.430%
48.0	5.485	0.894	640.968	.118%	97.566%
50.0	5.093	0.856	641.824	.113%	97.696%
52.0	4.845	0.837	642.661	.111%	97.824%
54.0	4.687	0.832	643.493	.110%	97.950%
56.0	4.590	0.835	644.327	.110%	98.078%
58.0	4.542	0.845	645.172	.112%	98.206%
60.0	4.563	0.867	646.039	.115%	98.338%
62.0	4.611	0.893	646.932	.118%	98.474%
64.0	4.439	0.875	647.807	.116%	98.607%
66.0	4.205	0.842	648.649	.111%	98.735%
68.0	3.909	0.795	649.444	.105%	98.856%
70.0	3.682	0.759	650.203	.100%	98.972%
72.0	3.558	0.742	650.945	.098%	99.085%
74.0	3.510	0.740	651.685	.098%	99.197%

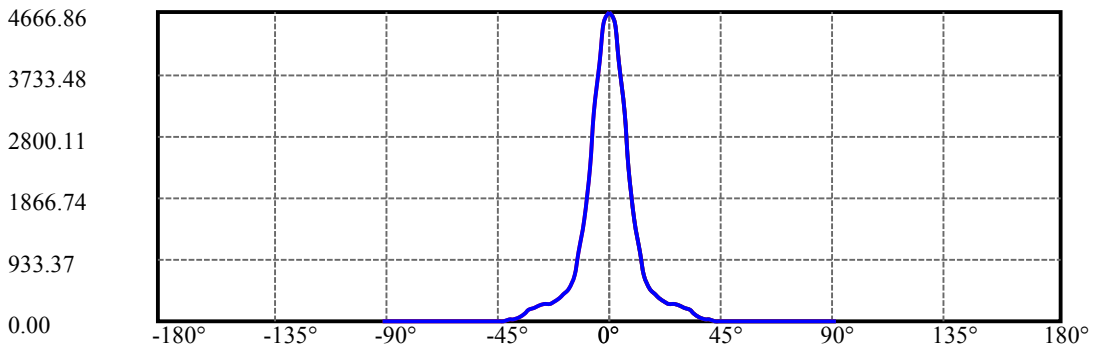
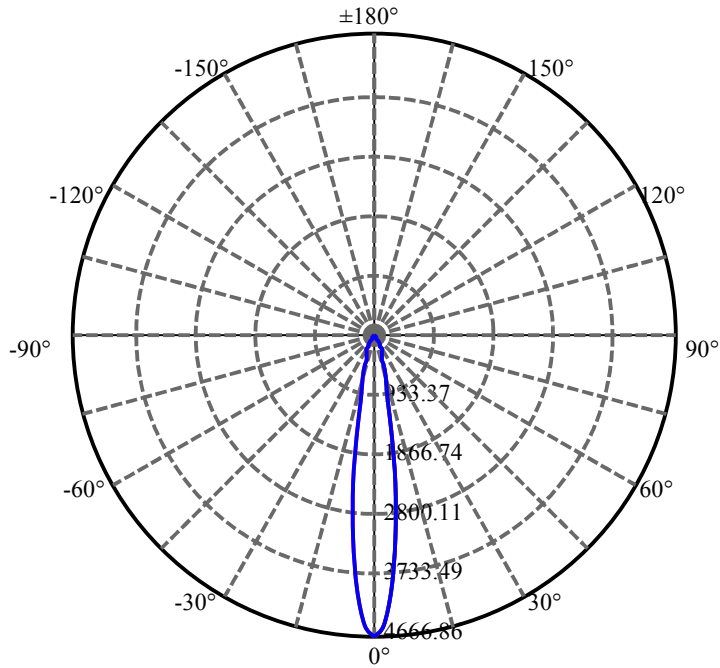
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.462	0.737	652.421	.097%	99.310%
78.0	3.413	0.732	653.154	.097%	99.421%
80.0	3.331	0.719	653.873	.095%	99.531%
82.0	3.283	0.713	654.586	.094%	99.639%
84.0	3.248	0.708	655.295	.094%	99.747%
86.0	3.173	0.694	655.989	.092%	99.853%
88.0	2.966	0.650	656.639	.086%	99.952%
90.0	2.904	0.318	656.957	.042%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	586.65	77.60%	89.30%
0-40	636.56	84.20%	96.89%
0-60	646.04	85.45%	98.34%
0-90	656.64	86.86%	99.95%
0-120	656.64	86.86%	99.95%
0-180	656.96	86.90%	100.00%
60-90	11.47	1.52%	1.75%
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%
0-24.85	525.57	69.52%	80.00%

ZONAL LUMEN SUMMARY

0-10	300.30
10-20	166.22
20-30	120.13
30-40	49.90
40-50	5.27
50-60	4.21
60-70	4.16
70-80	3.67
80-90	2.77
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: —————

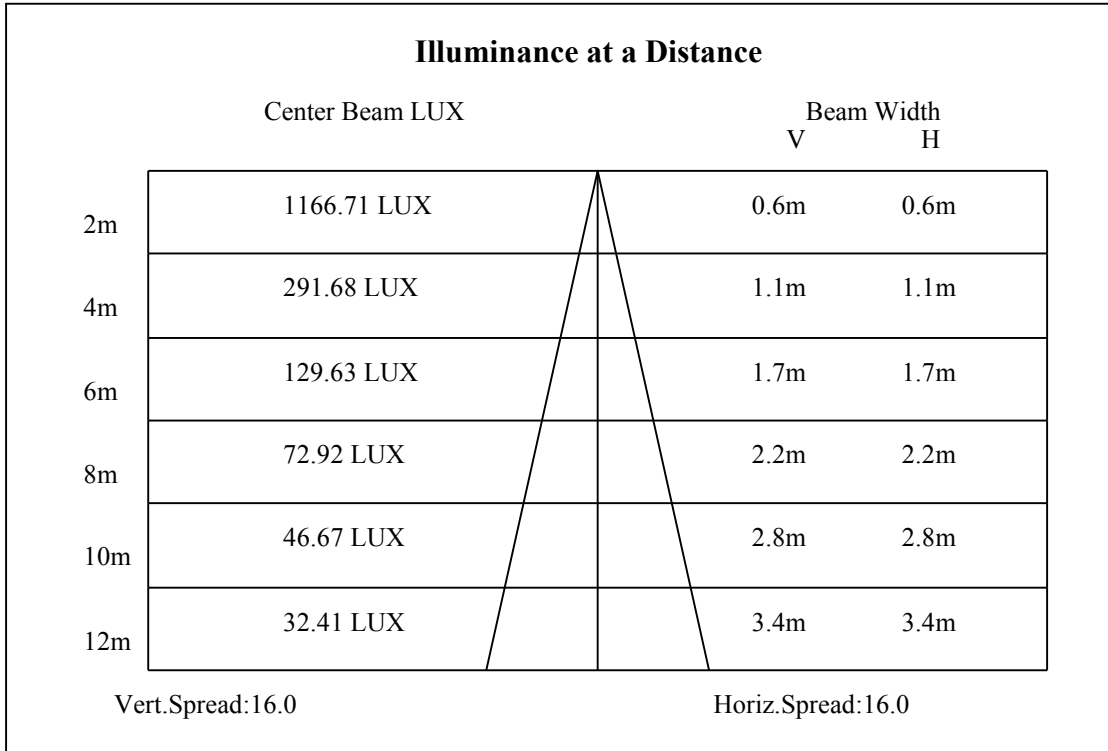
C90/C270: —————

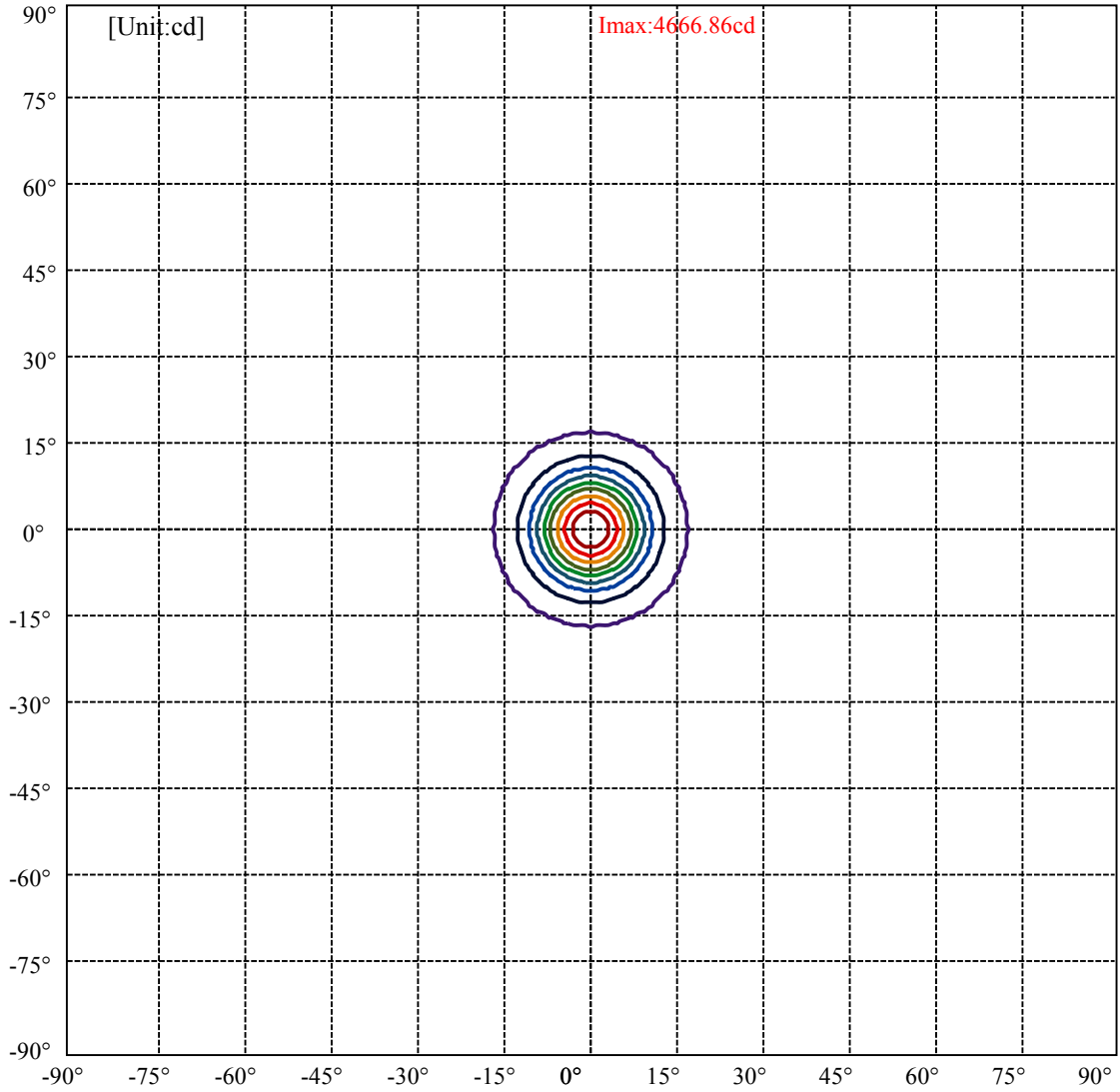
Field angle(10%Imax):C0/180Left:16.6 Right:16.6

:C90/270Left:16.6 Right:16.6

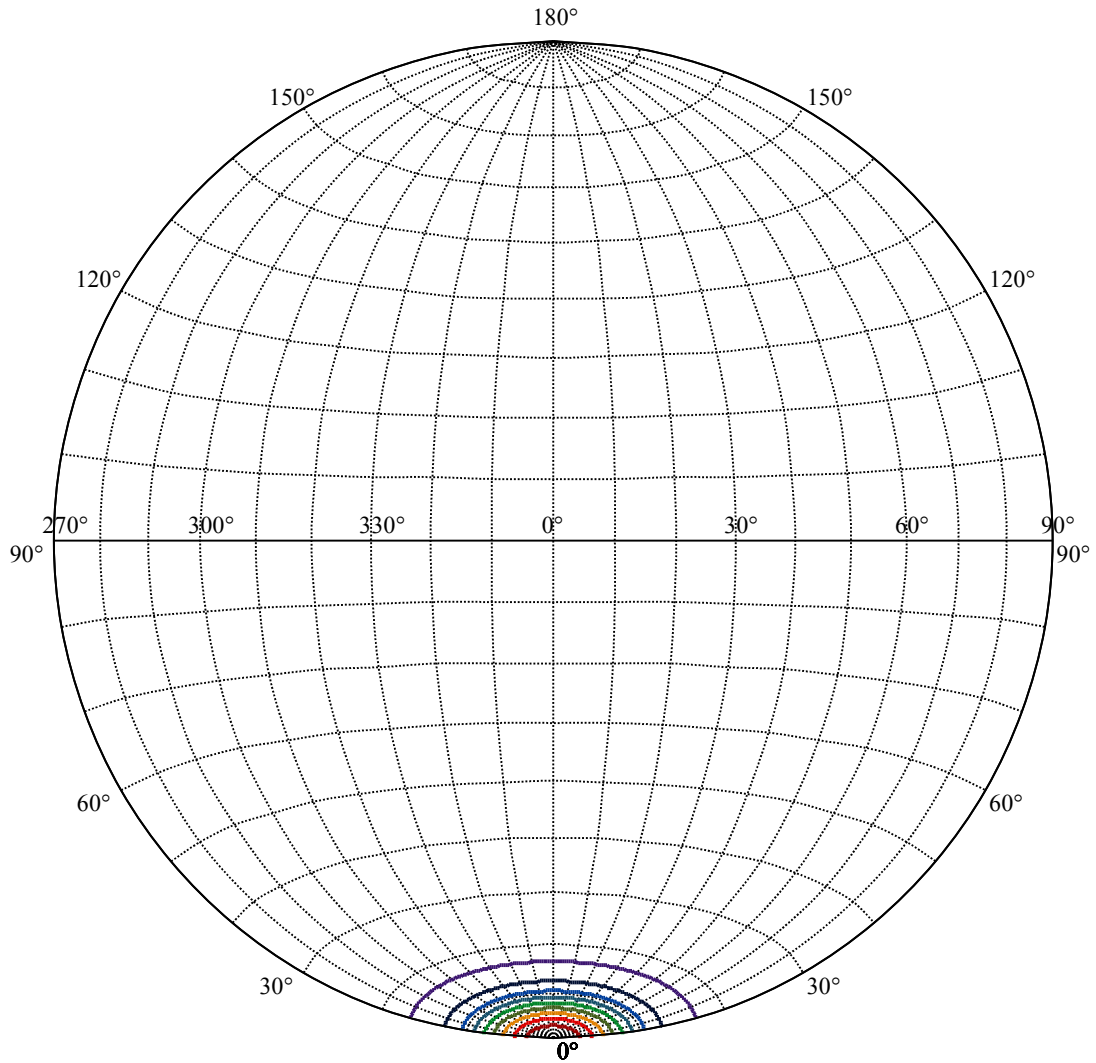
Beam Angle(50%Imax):C0/180Left:8.0 Right:8.0

:C90/270Left:8.0 Right:8.0





(10%Imax) 466.686	—
(20%Imax) 933.371	—
(30%Imax) 1400.06	—
(40%Imax) 1866.74	—
(50%Imax) 2333.43	—
(60%Imax) 2800.11	—
(70%Imax) 3266.8	—
(80%Imax) 3733.48	—
(90%Imax) 4200.17	—



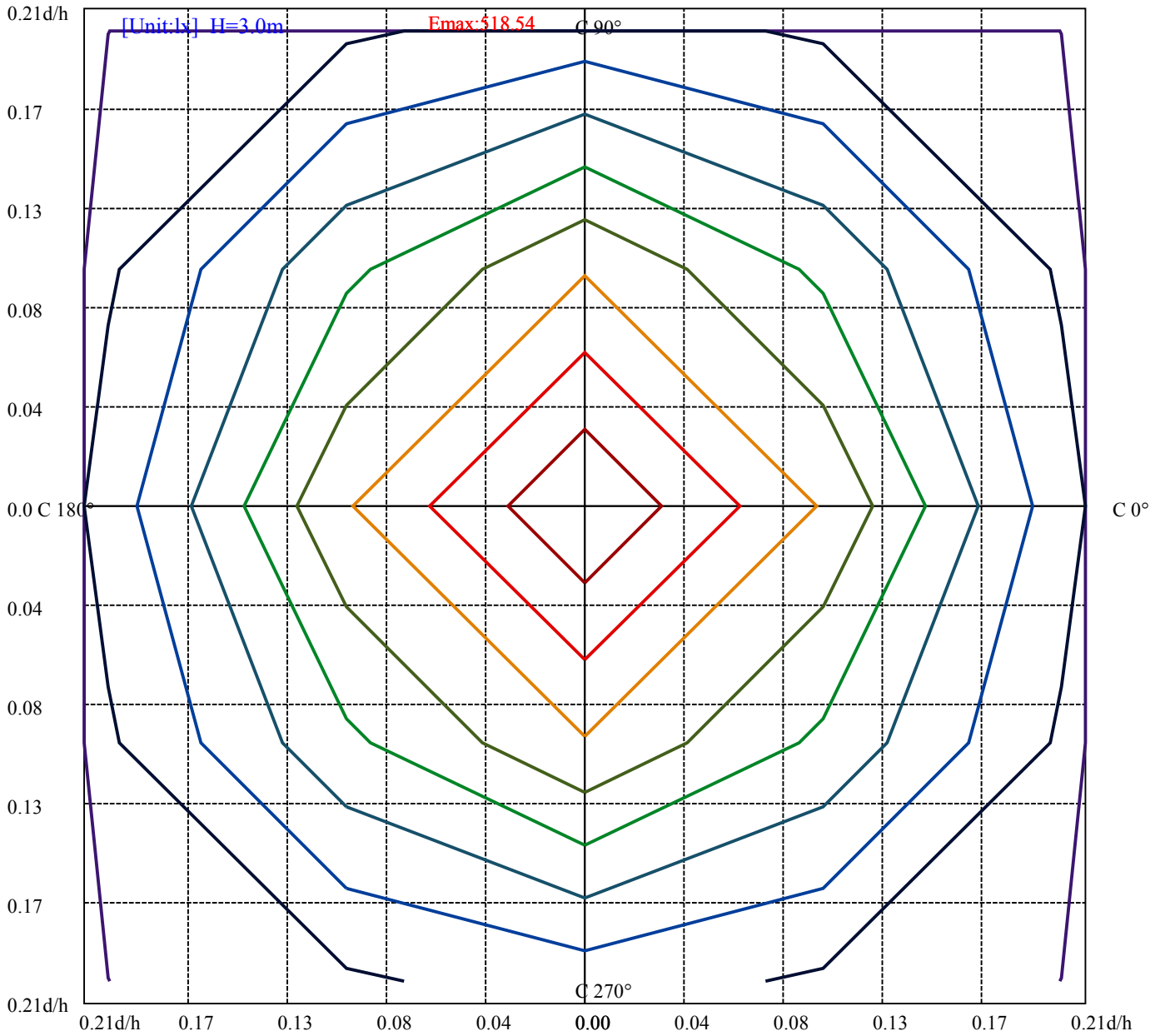
House

[Unit:cd]

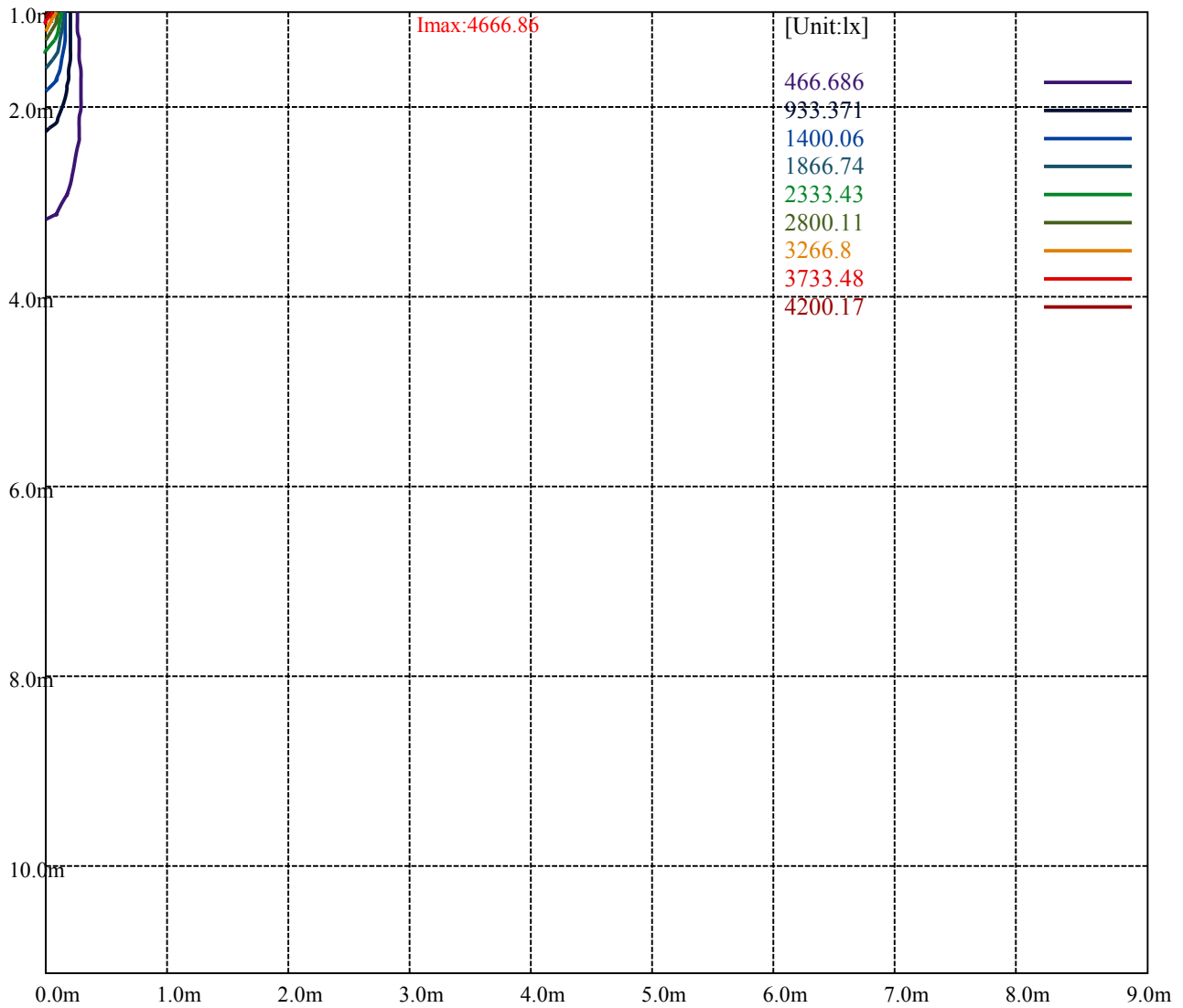
Road

Imax:4666.86

(10%Imax) 466.686	—
(20%Imax) 933.371	—
(30%Imax) 1400.06	—
(40%Imax) 1866.74	—
(50%Imax) 2333.43	—
(60%Imax) 2800.11	—
(70%Imax) 3266.8	—
(80%Imax) 3733.48	—
(90%Imax) 4200.17	—



- (10%Emax) 51.85378
- (20%Emax) 103.7076
- (30%Emax) 155.5611
- (40%Emax) 207.4156
- (50%Emax) 259.2689
- (60%Emax) 311.1234
- (70%Emax) 362.9767
- (80%Emax) 414.83
- (90%Emax) 466.6844



Luminance Table

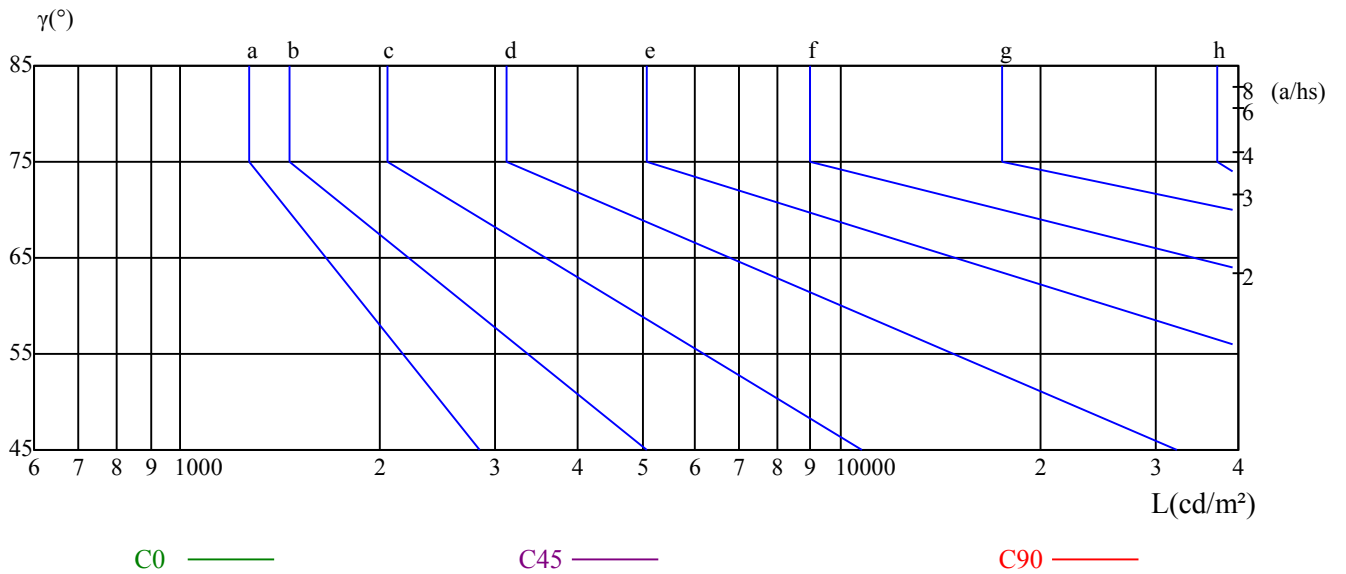
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

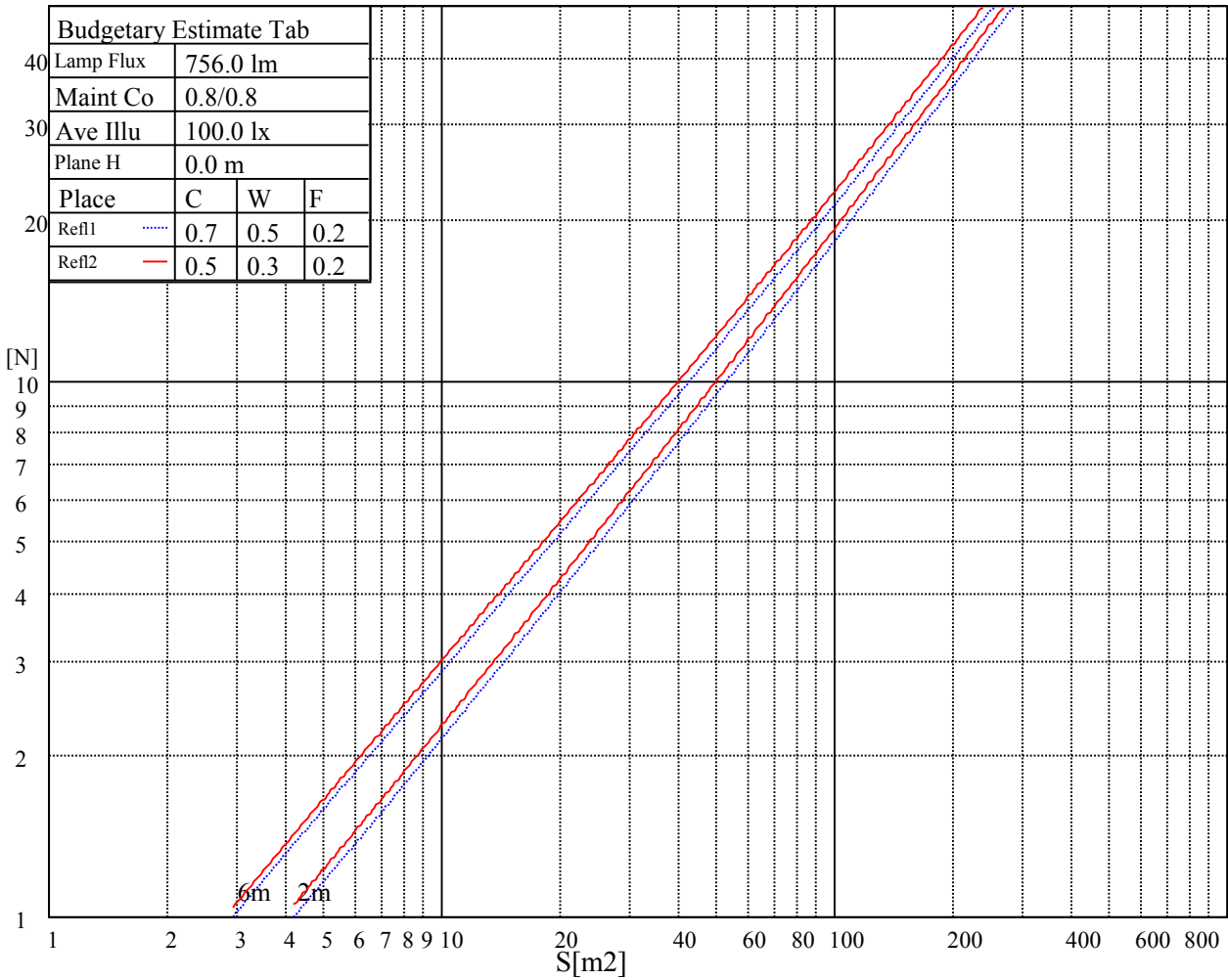
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

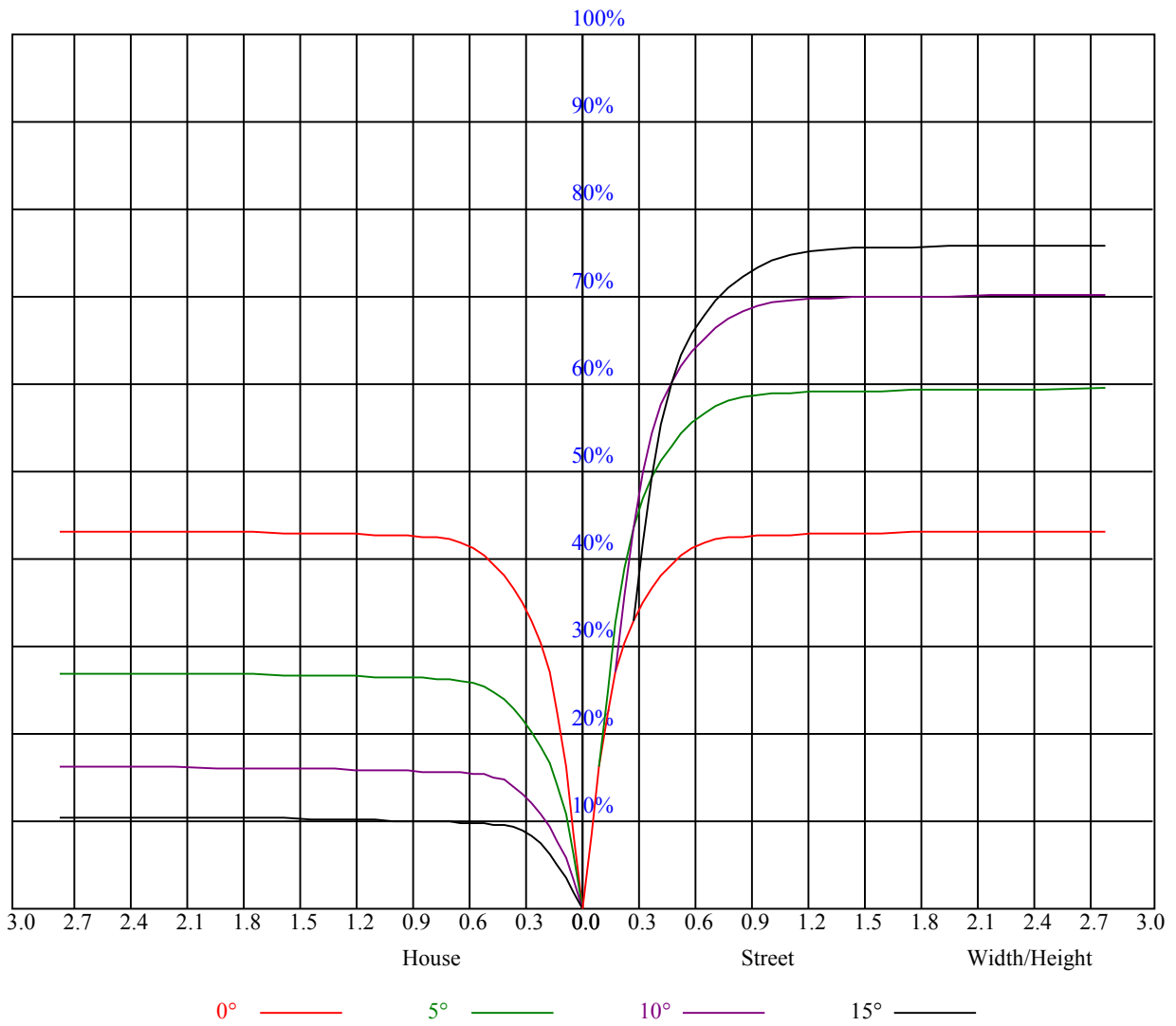
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.04	1.04	1.04	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.87
1	0.98	0.96	0.94	0.96	0.94	0.92	0.92	0.91	0.89	0.89	0.88	0.87	0.86	0.85	0.84	0.83
2	0.93	0.90	0.87	0.91	0.89	0.86	0.89	0.86	0.85	0.86	0.84	0.83	0.84	0.82	0.81	0.80
3	0.89	0.85	0.82	0.87	0.84	0.82	0.85	0.83	0.81	0.83	0.81	0.79	0.81	0.80	0.78	0.77
4	0.85	0.81	0.79	0.84	0.81	0.78	0.82	0.80	0.77	0.81	0.78	0.76	0.79	0.77	0.76	0.74
5	0.82	0.78	0.75	0.81	0.78	0.75	0.80	0.77	0.74	0.78	0.76	0.74	0.77	0.75	0.73	0.72
6	0.79	0.75	0.73	0.79	0.75	0.72	0.77	0.74	0.72	0.76	0.74	0.71	0.75	0.73	0.71	0.70
7	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.73	0.71	0.69	0.68
8	0.74	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.72	0.69	0.67	0.66
9	0.72	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.65
10	0.70	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.63



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	4737.05	4841.11	4587.30	3917.26	3082.61	2114.17	1355.49	888.61	611.13
45.0	4526.19	4918.19	4908.83	4539.95	3832.48	2821.64	1939.09	1191.97	783.45
90.0	4688.05	4798.17	4549.31	4013.61	3062.79	2057.46	1358.79	862.62	598.90
135.0	4704.57	4610.42	4112.71	3276.96	2390.00	1533.32	999.82	672.79	491.65
180.0	4737.05	4248.15	3350.73	2447.26	1540.48	955.78	665.08	479.98	391.84
225.0	4526.19	3807.15	2759.43	1782.73	1089.79	720.52	516.10	395.69	335.90
270.0	4711.18	4191.99	3336.97	2385.59	1541.03	953.03	661.23	455.32	356.21
315.0	4704.57	4452.41	3775.22	2948.27	1985.88	1090.67	826.89	557.72	419.92
360.0	4737.05	4841.11	4587.30	3917.26	3082.61	2114.17	1355.49	888.61	611.13
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	469.63	393.65	342.45	304.46	280.79	261.52	249.96	228.65	174.97
45.0	572.59	445.96	372.73	328.14	294.00	278.03	257.33	244.73	214.22
90.0	450.58	363.43	308.70	275.61	253.15	233.11	219.84	194.68	154.65
135.0	394.20	327.04	286.29	261.02	247.26	237.29	227.27	181.63	127.68
180.0	335.90	301.98	280.62	264.00	251.77	236.47	187.63	126.13	72.56
225.0	298.90	279.69	266.25	257.06	242.63	199.63	145.18	81.87	32.92
270.0	310.52	278.03	251.17	236.47	224.02	201.23	158.67	106.04	56.60
315.0	348.89	296.42	267.68	252.98	240.71	238.39	210.87	162.64	103.73
360.0	469.63	393.65	342.45	304.46	280.79	261.52	249.96	228.65	174.97
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	115.67	59.30	19.49	11.23	9.03	6.28	5.40	4.90	4.73
45.0	159.99	96.51	49.55	14.70	10.46	7.98	5.95	5.40	5.07
90.0	100.81	53.85	18.55	11.89	9.25	7.10	6.28	5.89	5.56
135.0	79.83	28.02	11.40	9.63	7.21	6.28	5.78	5.29	4.79
180.0	25.38	11.07	9.36	7.10	5.62	5.07	4.73	4.51	4.40
225.0	10.74	8.92	7.27	6.00	5.56	5.51	5.01	4.84	4.51
270.0	21.69	10.35	8.48	6.77	6.28	5.62	5.23	4.79	4.84
315.0	50.65	16.24	10.30	8.75	6.55	5.84	5.51	5.12	4.84
360.0	115.67	59.30	19.49	11.23	9.03	6.28	5.40	4.90	4.73
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	4.57	4.29	4.07	3.91	3.85	3.80	3.80	3.69	3.63
45.0	4.68	4.35	4.18	4.02	3.91	3.80	3.80	3.74	3.69
90.0	5.12	5.07	5.01	4.96	4.84	4.79	4.40	4.02	3.74
135.0	4.90	4.62	4.90	5.23	6.44	6.17	5.73	4.68	4.02
180.0	4.24	4.07	4.02	3.96	3.96	3.96	3.91	3.85	3.69
225.0	4.40	4.24	4.07	4.02	3.96	3.85	3.80	3.74	3.63
270.0	4.96	5.67	5.89	6.22	5.62	4.79	4.07	3.69	3.58
315.0	4.62	4.40	4.18	4.18	4.29	4.35	4.13	3.85	3.47
360.0	4.57	4.29	4.07	3.91	3.85	3.80	3.80	3.69	3.63
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	3.58	3.52	3.47	3.41	3.36	3.25	3.19	3.19	3.08
45.0	3.63	3.52	3.47	3.47	3.36	3.30	3.25	3.19	3.08
90.0	3.58	3.58	3.58	3.52	3.47	3.36	3.30	3.19	2.97
135.0	3.74	3.69	3.58	3.58	3.47	3.47	3.36	3.41	2.97
180.0	3.47	3.47	3.41	3.36	3.30	3.30	3.41	3.47	2.97
225.0	3.47	3.41	3.41	3.30	3.25	3.30	3.36	3.03	2.86
270.0	3.52	3.47	3.41	3.36	3.19	3.14	3.03	2.92	2.86
315.0	3.47	3.41	3.36	3.30	3.25	3.14	3.08	2.97	2.92
360.0	3.58	3.52	3.47	3.41	3.36	3.25	3.19	3.19	3.08

Intensity data(cd)

C/γ(°)	90.0
0.0	3.08
45.0	3.08
90.0	2.92
135.0	2.86
180.0	2.81
225.0	2.81
270.0	2.81
315.0	2.86
360.0	3.08