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NATA

LumCAT: 1406-N
Luminaire: 92.70.044.00
Report No: NATA0100 Voltage(V): 33.5900
Test No: GC2019022711 Current(A): 0.2000
LampCAT: NICHIA NVNWS007Z-V1 LES5.9Power (W): 6.7180
Lamp flux(lm): 900.0 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): 745.13
Efficiency(%): 82.79%
Lumens(lm)/Power(W): 111.85
Central intensity(cd): 1163.531
Maximum intensity(cd): 1163.531
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=36.3
[C90/270]Total=36.3
Field angle(10%Imax): [C0/180]Total=86.5
[C90/270]Total=86.5
Maximum s/h(1/2): C0_180=0.58 C90_270=0.58
Maximum s/h(1/4): C0_180=0.64 C90_270=0.64
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 83.49%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 95.557%

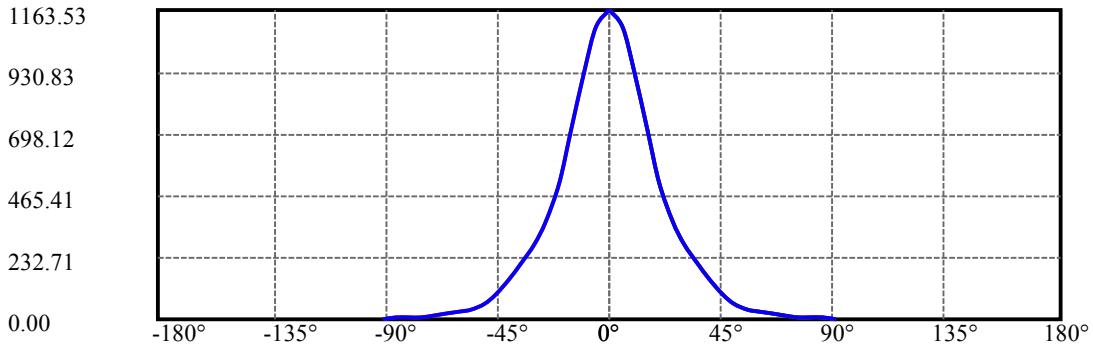
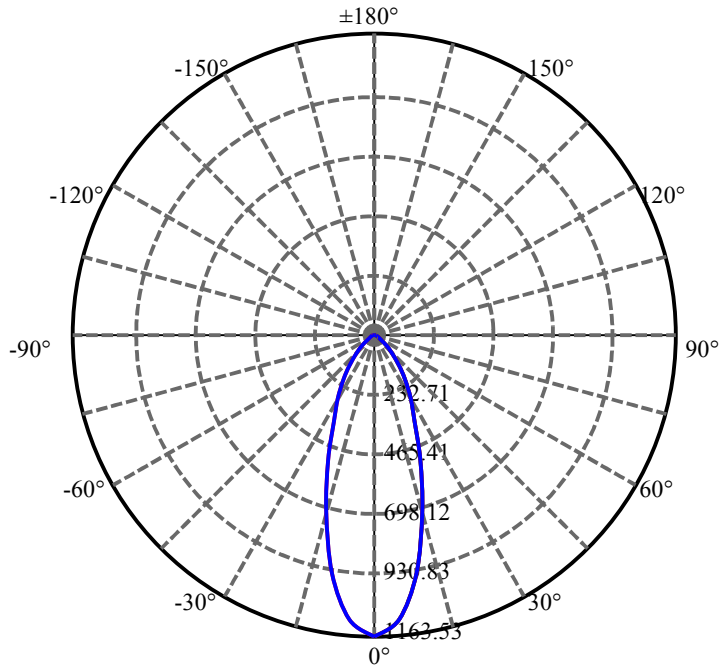
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1163.531	6.958	6.958	.773%	.934%
5.0	1100.060	52.554	59.512	5.839%	7.987%
10.0	932.541	88.762	148.274	9.862%	19.899%
15.0	705.023	100.021	248.294	11.113%	33.322%
20.0	509.955	95.603	343.898	10.623%	46.153%
25.0	366.638	84.933	428.83	9.437%	57.551%
30.0	281.370	77.115	505.945	8.568%	67.901%
35.0	210.488	66.177	572.122	7.353%	76.782%
40.0	151.882	53.513	625.635	5.946%	83.964%
45.0	96.919	37.565	663.2	4.174%	89.005%
50.0	60.405	25.364	688.564	2.818%	92.409%
55.0	37.920	17.026	705.591	1.892%	94.694%
60.0	26.128	12.403	717.994	1.378%	96.359%
65.0	18.338	9.110	727.103	1.012%	97.581%
70.0	13.352	6.878	733.981	.764%	98.504%
75.0	9.309	4.929	738.91	.548%	99.166%
80.0	6.244	3.370	742.28	.374%	99.618%
85.0	3.832	2.092	744.373	.232%	99.899%
90.0	2.749	0.753	745.126	.084%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	505.94	56.22%	67.90%
0-40	625.64	69.52%	83.96%
0-60	717.99	79.78%	96.36%
0-90	744.37	82.71%	99.90%
0-120	744.37	82.71%	99.90%
0-180	745.13	82.79%	100.00%
60-90	38.78	4.31%	5.20%
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%
0-37.24	596.10	66.23%	80.00%

ZONAL LUMEN SUMMARY

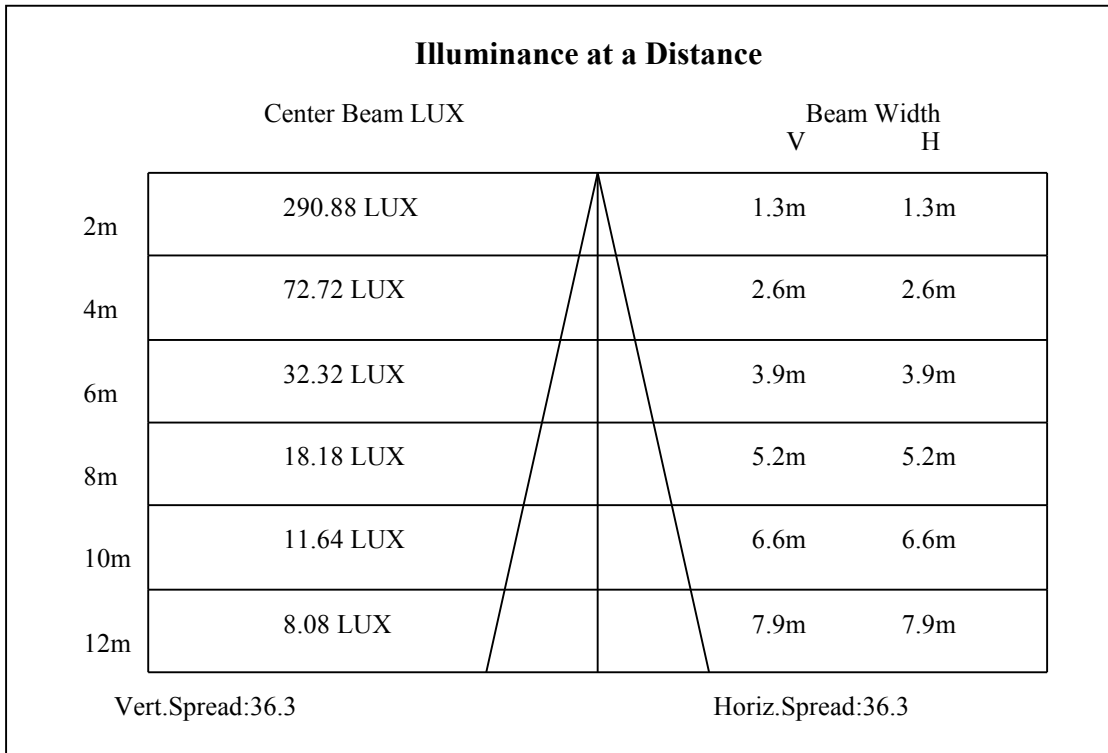
0-10	148.27
10-20	195.62
20-30	162.05
30-40	119.69
40-50	62.93
50-60	29.43
60-70	15.99
70-80	8.30
80-90	2.09
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

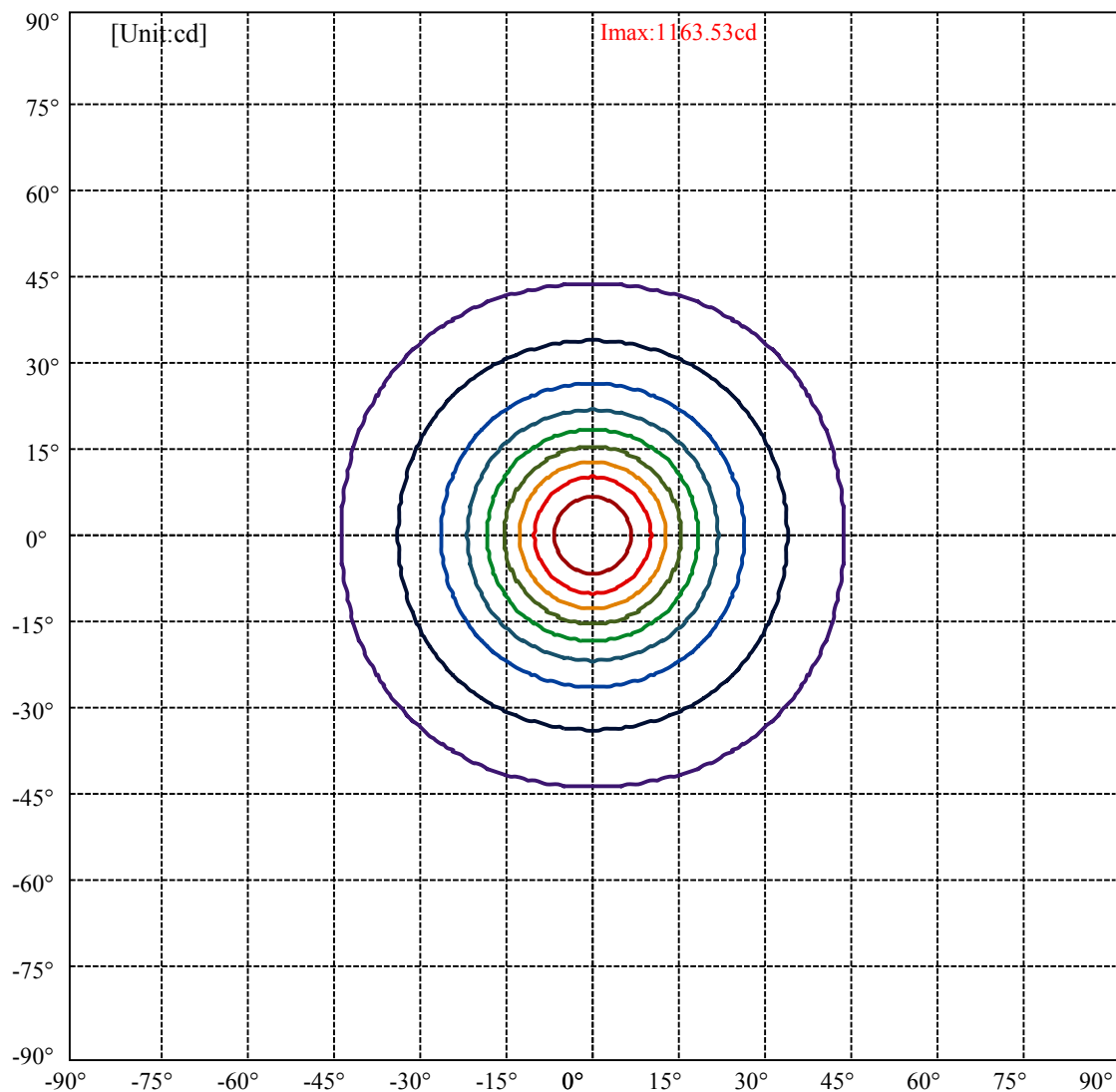


C0(Max): —
C0/C180: —
C90/C270: —

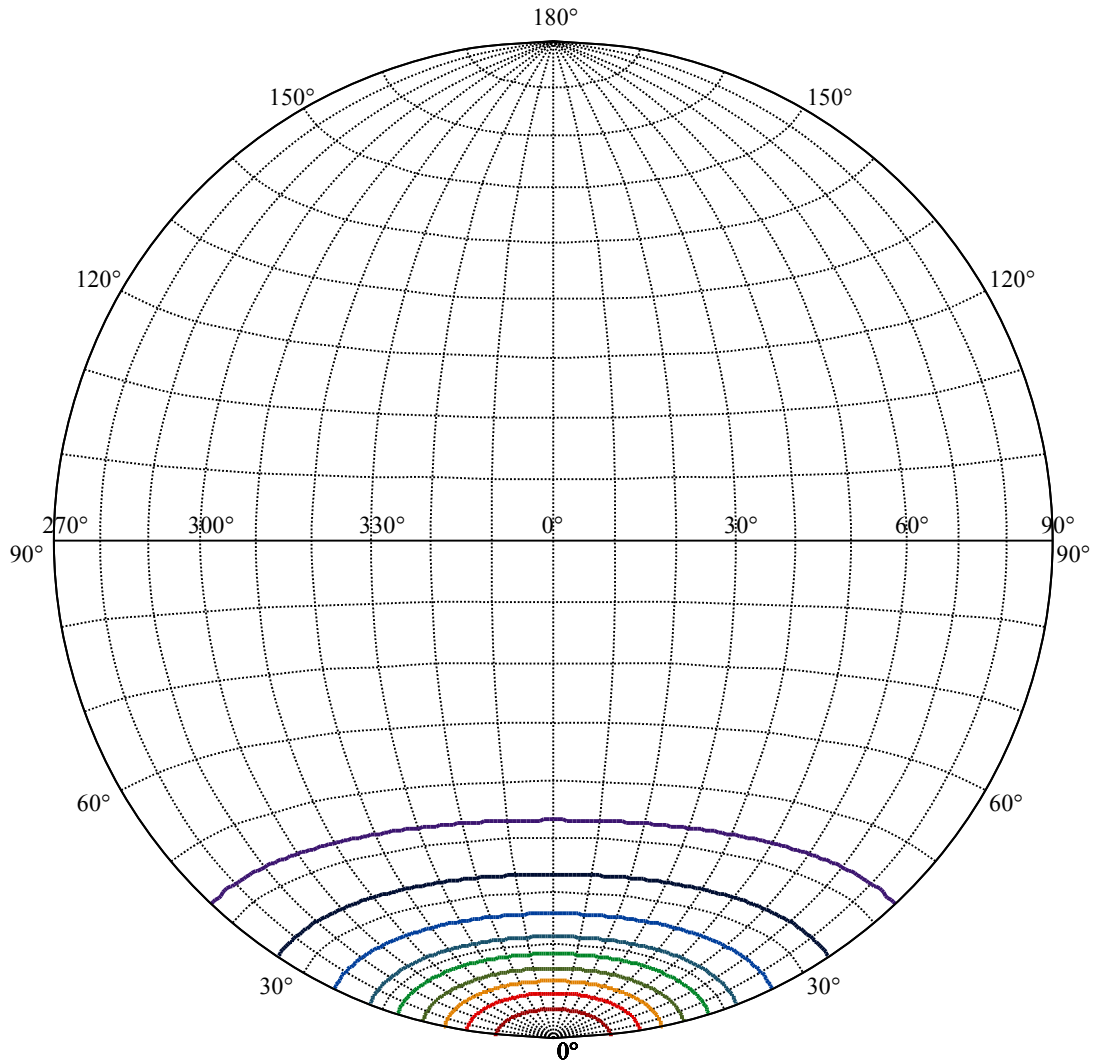
Field angle(10%Imax):C0/180Left:43.2 Right:43.2
:C90/270Left:43.2 Right:43.2

Beam Angle(50%Imax):C0/180Left:18.2 Right:18.2
:C90/270Left:18.2 Right:18.2





(10%Imax) 116.353	—
(20%Imax) 232.706	—
(30%Imax) 349.059	—
(40%Imax) 465.413	—
(50%Imax) 581.766	—
(60%Imax) 698.119	—
(70%Imax) 814.472	—
(80%Imax) 930.825	—
(90%Imax) 1047.18	—



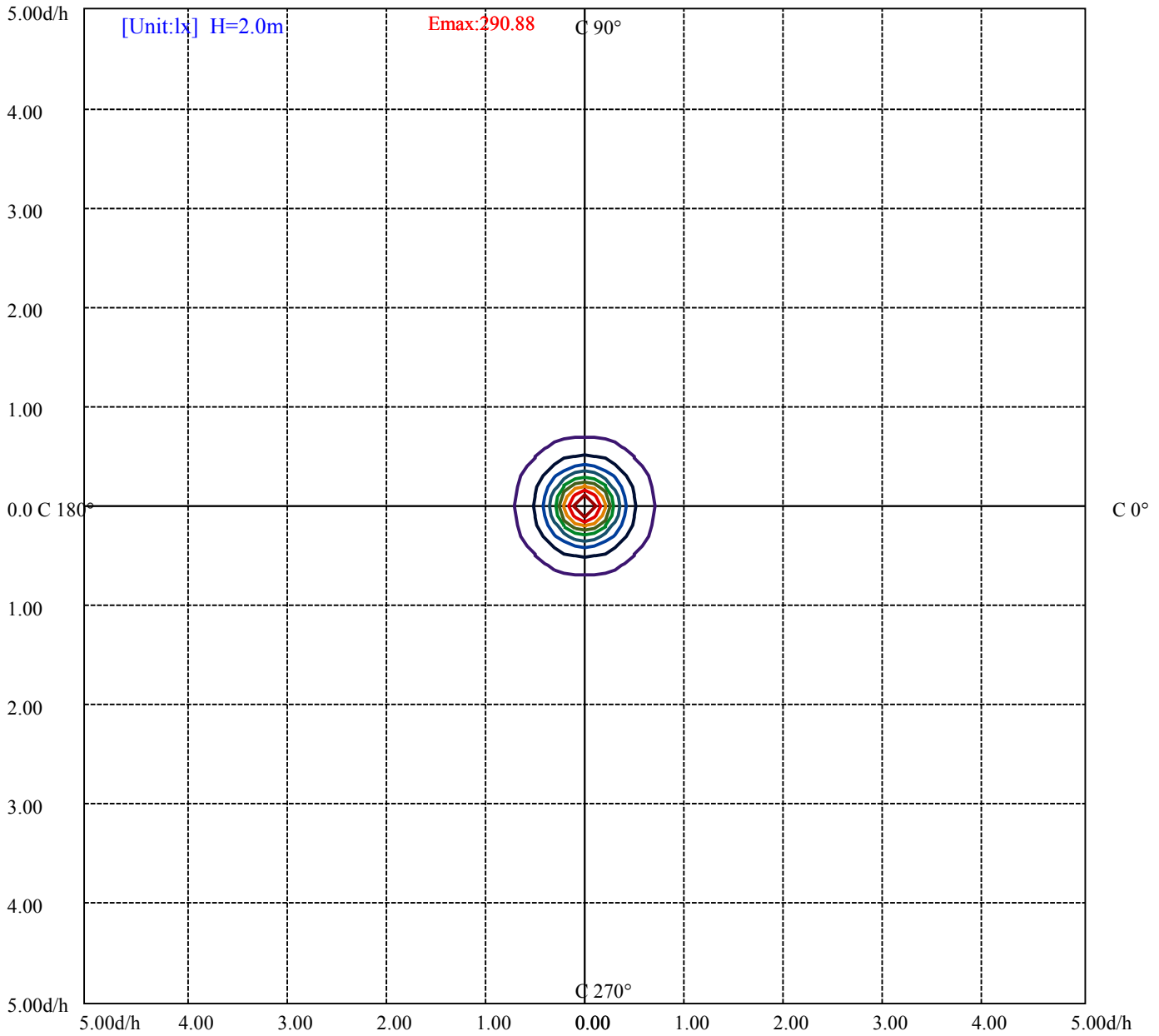
House

[Unit:cd]

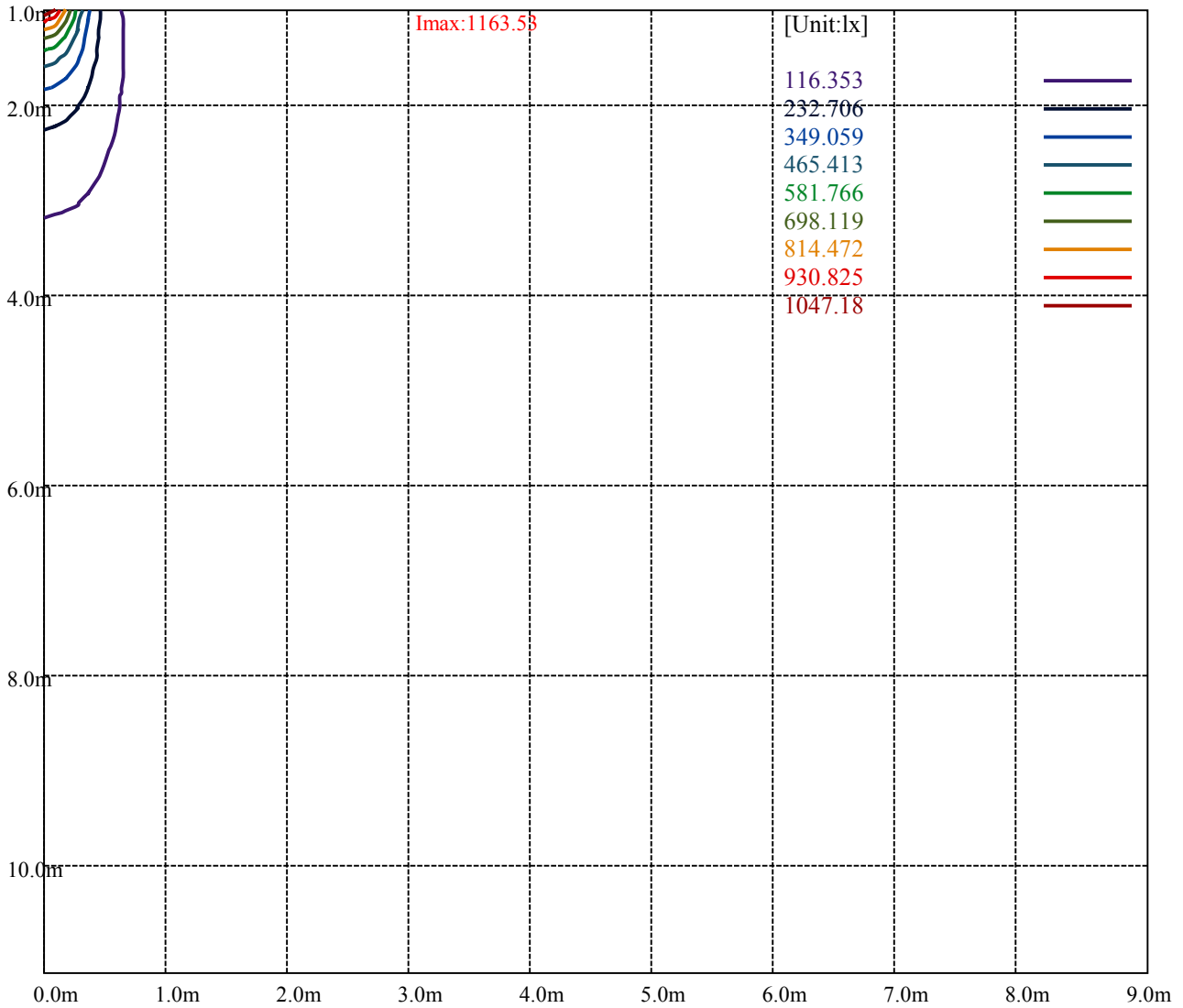
Road

Imax:1163.53

(10%Imax)	116.353	—
(20%Imax)	232.706	—
(30%Imax)	349.059	—
(40%Imax)	465.413	—
(50%Imax)	581.766	—
(60%Imax)	698.119	—
(70%Imax)	814.472	—
(80%Imax)	930.825	—
(90%Imax)	1047.18	—



- (10%Emax) 29.08825
- (20%Emax) 58.1765
- (30%Emax) 87.26475
- (40%Emax) 116.353
- (50%Emax) 145.4413
- (60%Emax) 174.5295
- (70%Emax) 203.6178
- (80%Emax) 232.7057
- (90%Emax) 261.795



Luminance Table

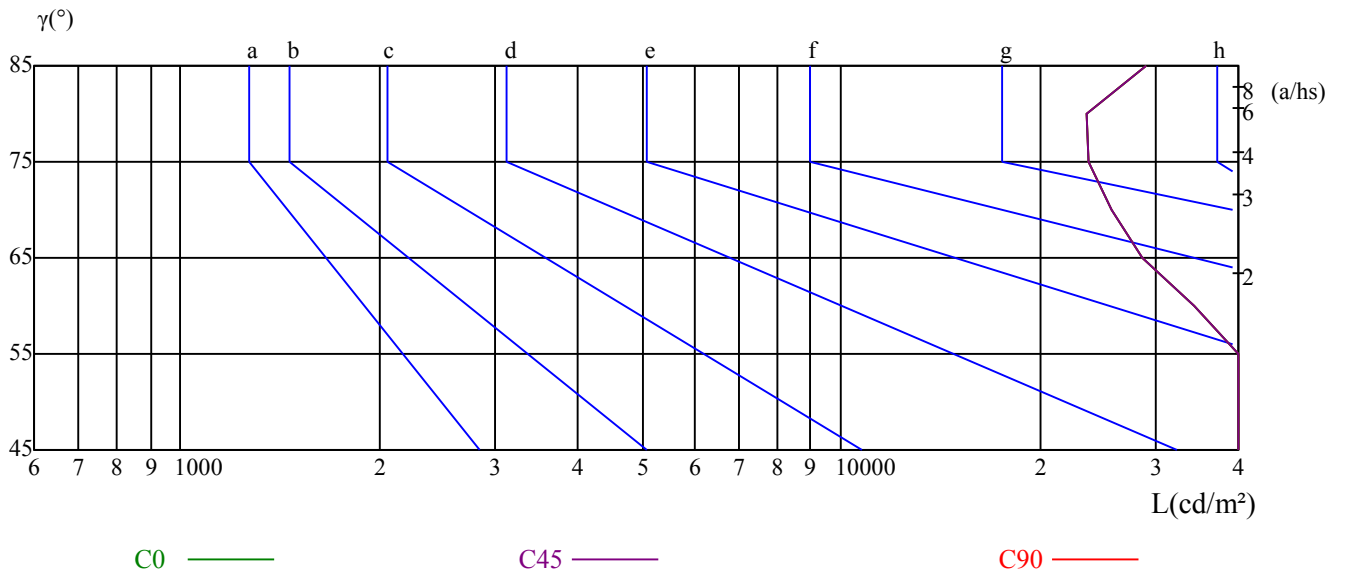
γ	45	50	55	60	65	70	75	80	85
C0	90114	61785	43465	34357	28527	25667	23648	23640	28907
C45	90114	61785	43465	34357	28527	25667	23648	23640	28907
C90	90114	61785	43465	34357	28527	25667	23648	23640	28907

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
28527	28527	28527	23648	23648	23648	28907	28907	28907

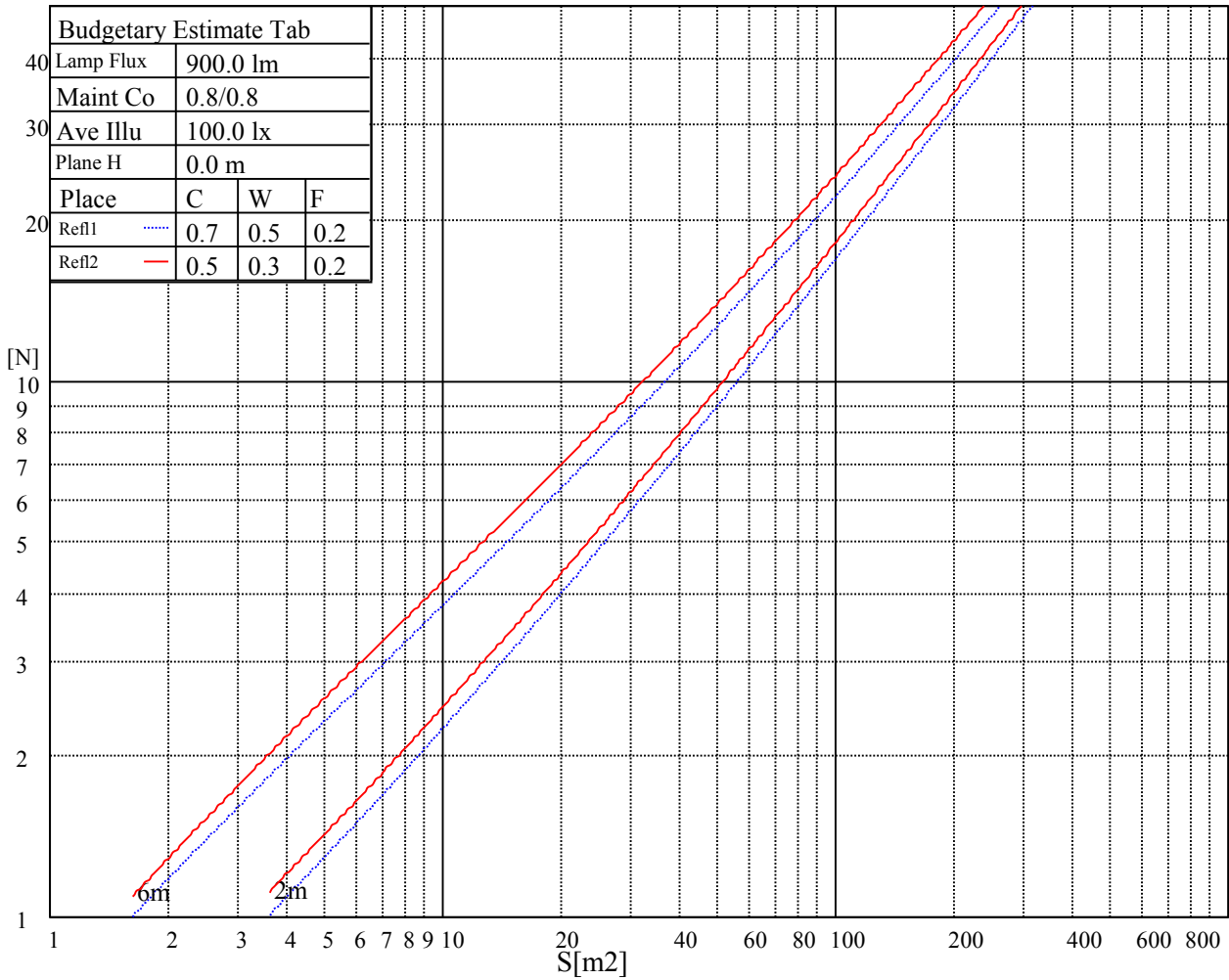
Glare Table

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

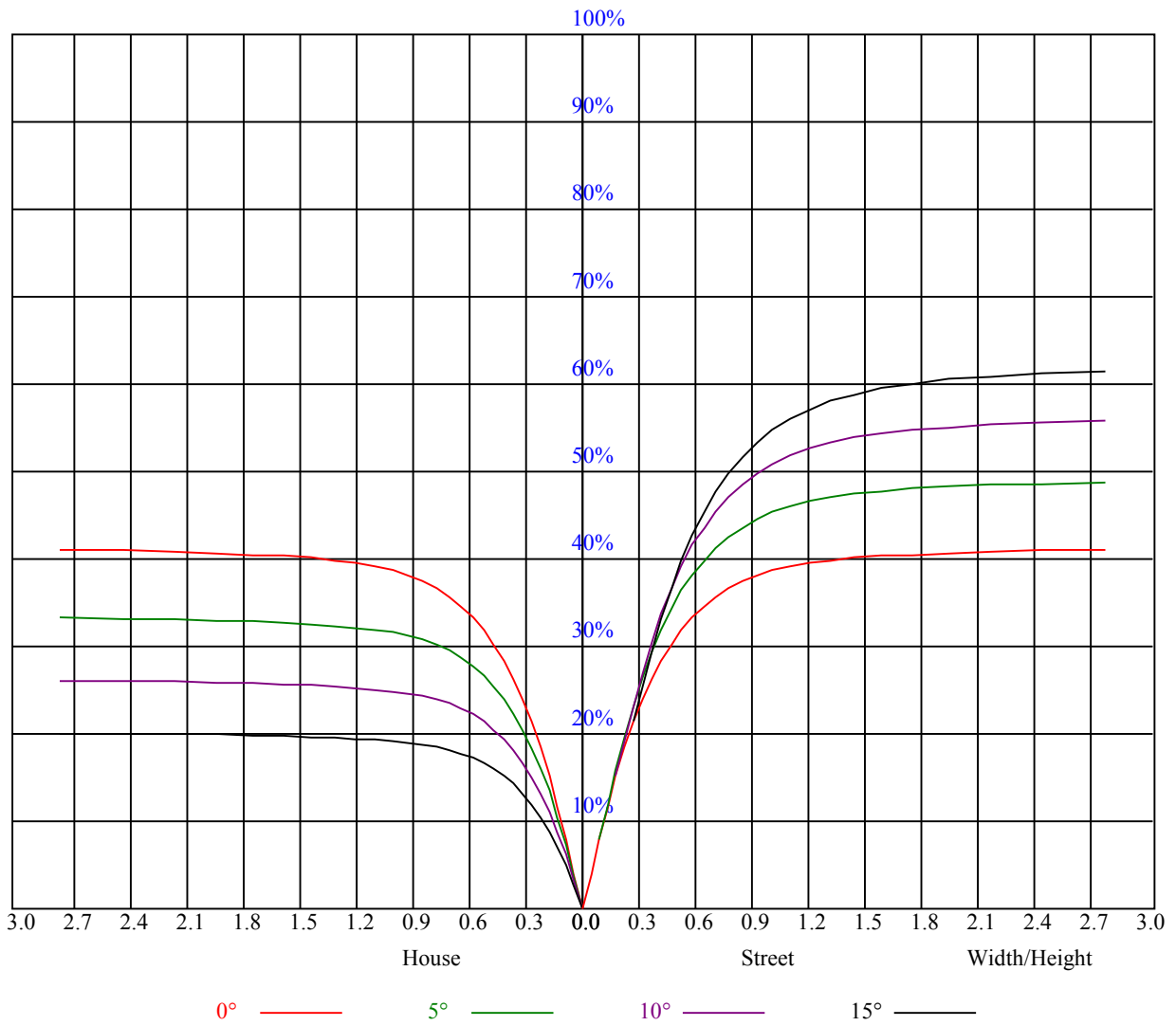
Luminance Limiting Curve



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	21.80	22.95	22.16	23.26	23.58	21.86	23.01	22.22	23.32	23.63
	3H	22.83	23.85	23.21	24.18	24.55	22.91	23.93	23.29	24.26	24.63
	4H	23.24	24.19	23.65	24.54	24.93	23.33	24.28	23.74	24.63	25.02
	6H	23.60	24.47	24.02	24.84	25.24	23.70	24.57	24.12	24.94	25.34
	8H	23.76	24.57	24.19	24.97	25.37	23.86	24.68	24.29	25.07	25.48
	12H	24.03	24.81	24.46	25.20	25.63	24.12	24.90	24.55	25.28	25.71
4H	2H	22.06	23.01	22.47	23.36	23.75	22.11	23.06	22.52	23.41	23.80
	3H	23.32	24.10	23.74	24.50	24.91	23.39	24.16	23.81	24.57	24.98
	4H	23.86	24.55	24.30	24.97	25.42	23.94	24.63	24.38	25.05	25.50
	6H	24.28	24.87	24.75	25.32	25.79	24.37	24.97	24.84	25.41	25.88
	8H	24.51	25.06	24.98	25.51	25.98	24.60	25.15	25.07	25.60	26.07
	12H	24.83	25.31	25.32	25.80	26.28	24.90	25.39	25.39	25.87	26.35
8H	4H	24.03	24.58	24.50	25.03	25.50	24.10	24.65	24.57	25.10	25.58
	6H	24.60	25.05	25.11	25.55	26.03	24.68	25.13	25.19	25.63	26.11
	8H	24.93	25.33	25.46	25.85	26.35	25.01	25.41	25.54	25.93	26.43
	12H	25.75	26.10	26.27	26.59	27.17	25.82	26.17	26.34	26.66	27.24
12H	4H	24.03	24.51	24.52	25.00	25.48	24.10	24.58	24.59	25.07	25.55
	6H	25.08	25.05	25.18	25.52	26.07	25.16	25.13	25.26	25.60	26.15
	8H	25.05	25.40	25.57	25.90	26.47	25.13	25.48	25.65	25.98	26.55
Variation with the observer position at spacings:											
S = 1.0H	1.2/-2.0					1.2/-2.0					
S = 1.5H	2.6/-2.5					2.6/-2.5					
S = 2.0H	4.4/-2.6					4.4/-2.6					
Standard tables:	BK2					BK2					
Uncorrected UGR	7.3					7.3					



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	0.99	0.99	0.99	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.85	0.85	0.85	0.83
1	0.91	0.89	0.86	0.89	0.87	0.85	0.86	0.84	0.82	0.83	0.81	0.80	0.80	0.79	0.78	0.76
2	0.84	0.81	0.77	0.83	0.80	0.77	0.80	0.77	0.75	0.78	0.75	0.73	0.75	0.73	0.72	0.70
3	0.79	0.74	0.70	0.77	0.73	0.70	0.75	0.72	0.69	0.73	0.70	0.68	0.71	0.69	0.67	0.65
4	0.73	0.69	0.65	0.72	0.68	0.64	0.71	0.67	0.64	0.69	0.66	0.63	0.67	0.65	0.62	0.61
5	0.69	0.64	0.60	0.68	0.63	0.60	0.67	0.62	0.59	0.65	0.62	0.59	0.64	0.61	0.58	0.57
6	0.65	0.60	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.55	0.61	0.57	0.55	0.54
7	0.61	0.56	0.53	0.61	0.56	0.53	0.60	0.55	0.52	0.59	0.55	0.52	0.58	0.54	0.52	0.51
8	0.58	0.53	0.50	0.58	0.53	0.50	0.57	0.52	0.49	0.56	0.52	0.49	0.55	0.52	0.49	0.48
9	0.55	0.50	0.47	0.55	0.50	0.47	0.54	0.50	0.47	0.53	0.49	0.47	0.53	0.49	0.47	0.45
10	0.53	0.48	0.45	0.52	0.48	0.45	0.52	0.47	0.45	0.51	0.47	0.44	0.50	0.47	0.44	0.43



NATA 1406-N

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	1161.56	1109.81	963.56	734.06	529.88	379.69	290.81	216.51	157.44
45.0	1164.38	1134.56	993.94	766.13	556.88	403.31	304.88	228.88	170.83
90.0	1167.75	1116.79	958.28	727.26	529.93	378.00	286.76	221.63	162.28
135.0	1159.88	1128.94	981.00	761.06	546.19	383.06	297.56	221.34	164.59
180.0	1161.56	1083.49	905.63	672.53	478.91	351.06	267.81	201.77	144.06
225.0	1164.38	1070.89	861.98	651.99	467.72	339.98	265.61	198.90	138.71
270.0	1168.88	1090.69	914.63	680.06	499.50	361.69	284.63	208.74	145.18
315.0	1159.88	1065.32	881.33	647.10	470.64	336.32	252.90	186.13	131.96
360.0	1161.56	1109.81	963.56	734.06	529.88	379.69	290.81	216.51	157.44

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	100.91	62.33	39.09	27.51	19.29	14.01	9.84	6.64	3.94
45.0	110.14	68.79	43.43	28.86	19.86	14.46	10.13	6.86	4.16
90.0	104.01	66.38	41.06	28.01	19.41	14.18	9.84	6.58	4.05
135.0	108.68	67.50	42.19	28.86	20.48	14.79	10.35	7.09	4.11
180.0	93.26	58.05	36.73	25.93	18.11	13.05	9.17	6.02	3.60
225.0	87.24	52.88	33.02	22.78	16.31	11.70	7.99	5.34	3.32
270.0	89.55	57.09	34.65	23.85	16.71	12.38	8.61	5.68	3.71
315.0	81.56	50.23	33.19	23.23	16.54	12.26	8.55	5.74	3.77
360.0	100.91	62.33	39.09	27.51	19.29	14.01	9.84	6.64	3.94

C/γ(°)	90.0
0.0	2.81
45.0	2.70
90.0	2.70
135.0	2.81
180.0	2.76
225.0	2.70
270.0	2.76
315.0	2.76
360.0	2.81