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NATA

LumCAT: 3-2040-M	
Luminaire: 92.70.131.00	
Report No: NATA0100	Voltage(V): 34.3600
Test No: GC2019123014	Current(A): 0.6000
LampCAT: LUMINUS CXM-14-AC40	Power (W): 20.6000
Lamp flux(lm): 2608.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2388.05
Efficiency(%): 91.57%
Lumens(lm)/Power(W): 115.92
Central intensity(cd): 9953.719
Maximum intensity(cd): 9953.719
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=22.0
[C90/270]Total=22.0
Field angle(10%Imax): [C0/180]Total=49.1
[C90/270]Total=49.1
Maximum s/h(1/2): C0_180=0.37 C90_270=0.37
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(%): 91.57%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.588%

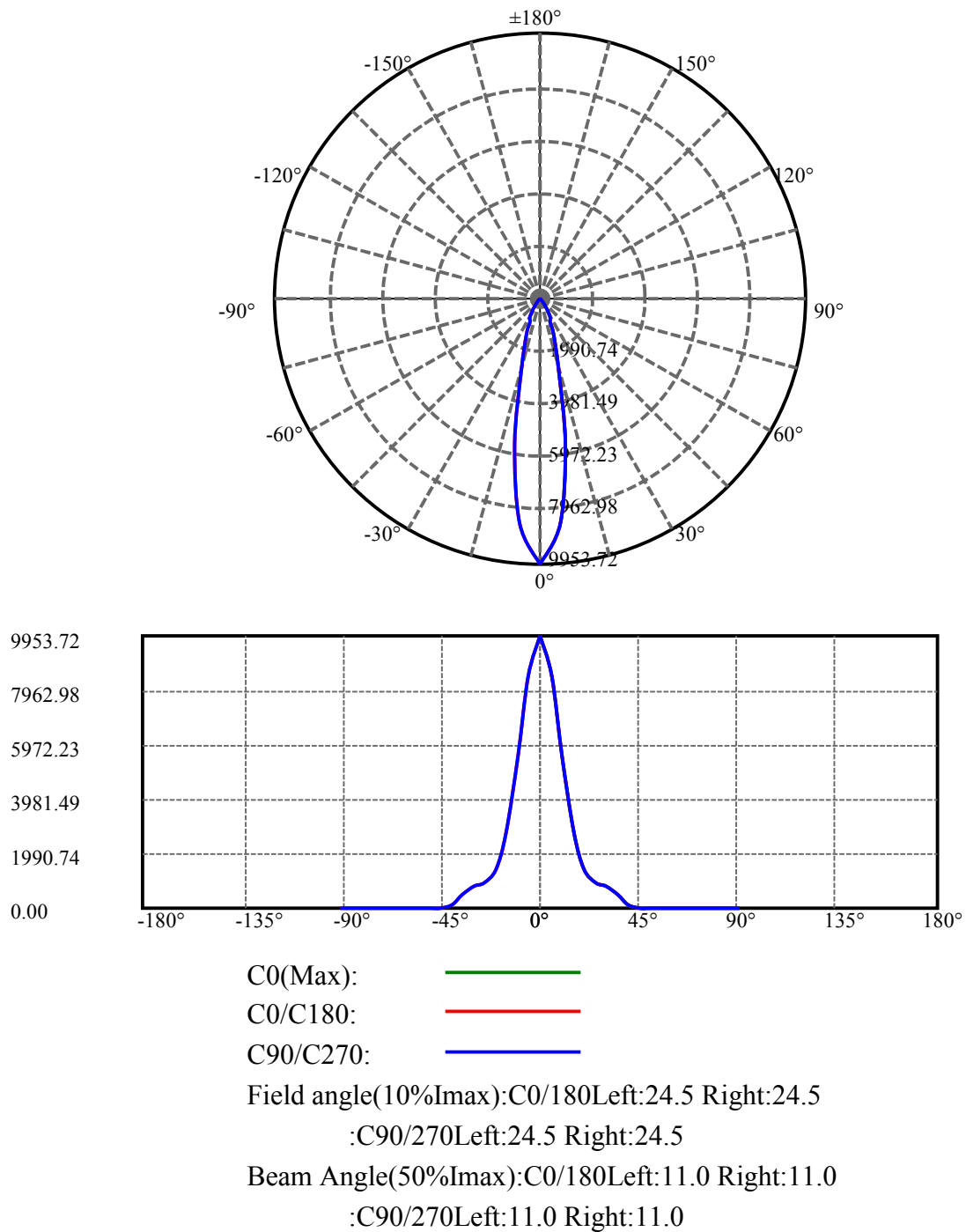
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9953.719	0.000	0	.000%	.000%
5.0	8454.797	220.069	220.069	8.438%	9.215%
10.0	5533.734	500.414	720.482	19.188%	30.170%
15.0	2784.938	493.458	1213.94	18.921%	50.834%
20.0	1413.802	346.035	1559.975	13.268%	65.324%
25.0	953.620	248.299	1808.274	9.521%	75.722%
30.0	806.119	222.696	2030.971	8.539%	85.047%
35.0	469.013	187.772	2218.743	7.200%	92.910%
40.0	110.763	96.731	2315.474	3.709%	96.961%
45.0	14.302	23.157	2338.631	.888%	97.930%
50.0	12.171	5.349	2343.98	.205%	98.154%
55.0	11.475	5.141	2349.121	.197%	98.370%
60.0	11.109	5.220	2354.342	.200%	98.588%
65.0	10.898	5.350	2359.692	.205%	98.812%
70.0	10.779	5.489	2365.181	.210%	99.042%
75.0	10.688	5.611	2370.792	.215%	99.277%
80.0	10.638	5.706	2376.498	.219%	99.516%
85.0	10.596	5.770	2382.268	.221%	99.758%
90.0	10.533	5.785	2388.053	.222%	100.000%

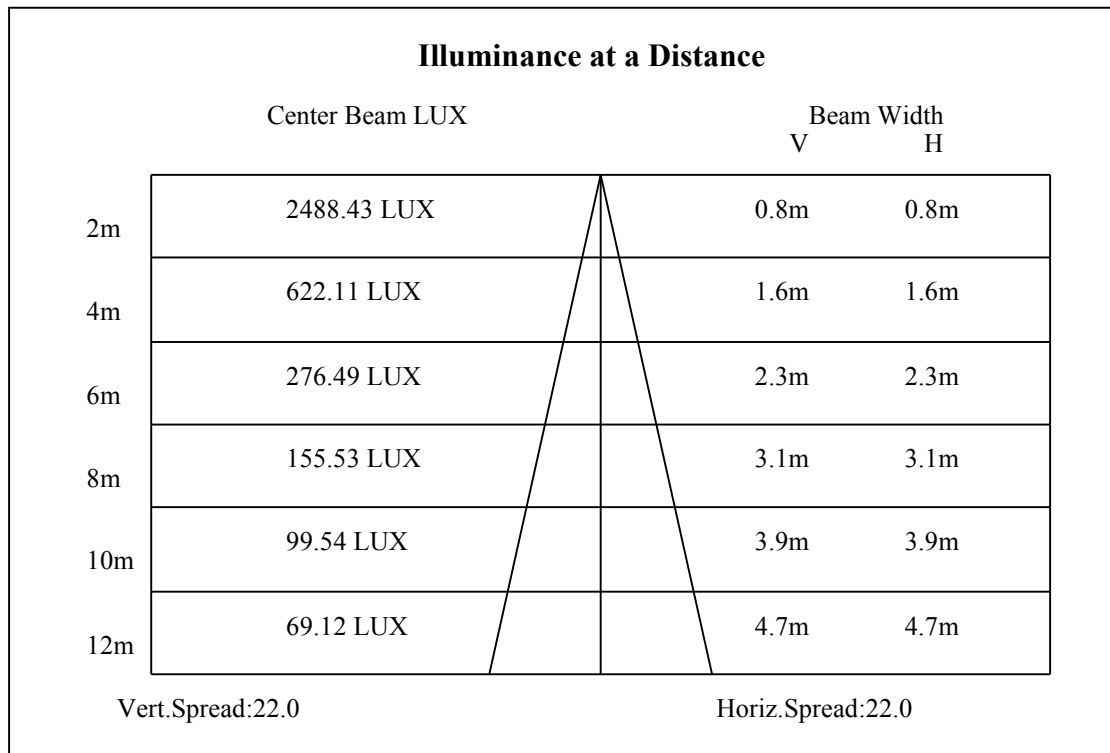
ZONAL LUMEN SUMMARY

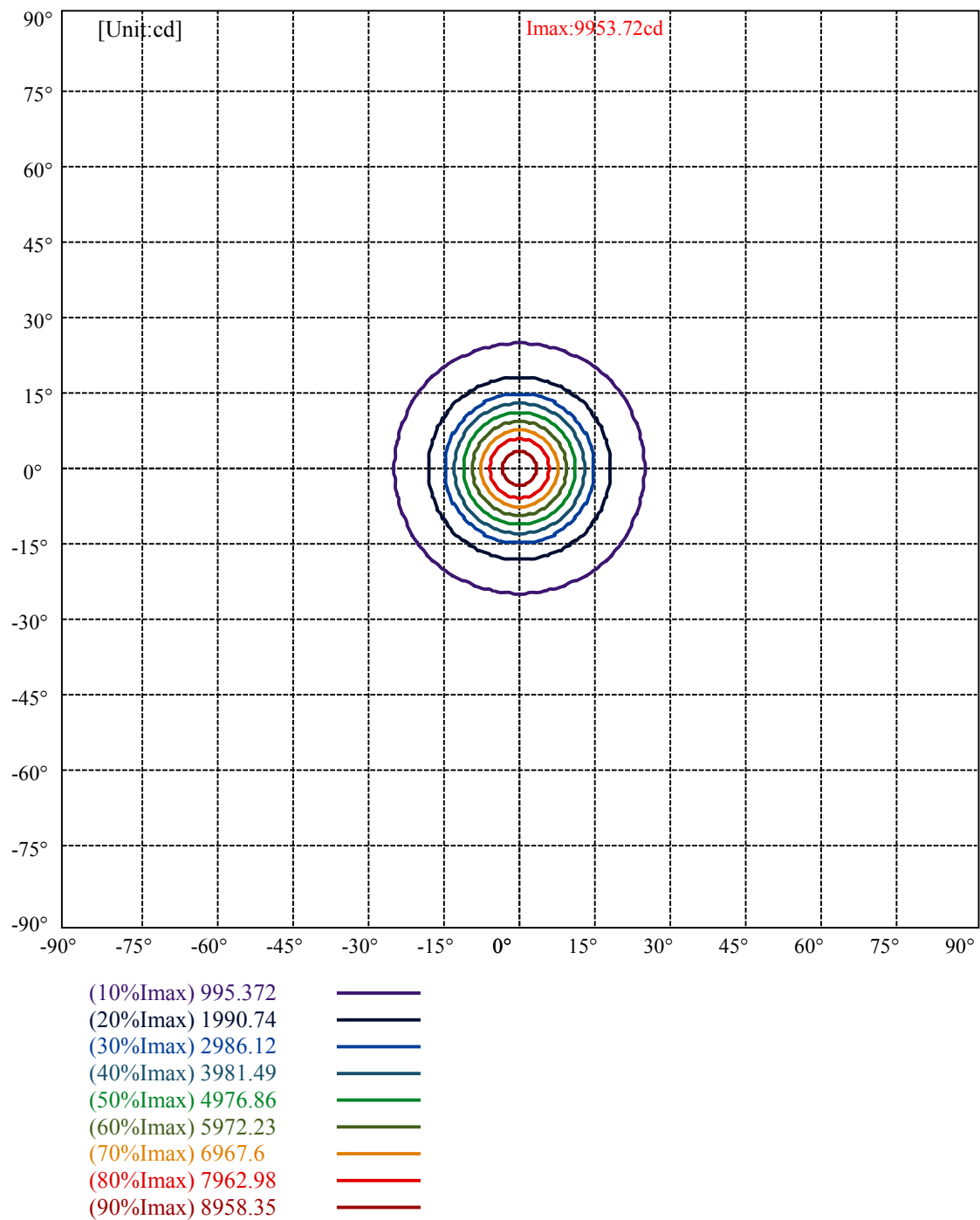
Zone	Lumens	%Lamp	%Fixt
0-30	2030.97	77.87%	85.05%
0-40	2315.47	88.78%	96.96%
0-60	2354.34	90.27%	98.59%
0-90	2382.27	91.34%	99.76%
0-120	2382.27	91.34%	99.76%
0-180	2388.05	91.57%	100.00%
60-90	33.15	1.27%	1.39%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.29	1910.44	73.25%	80.00%

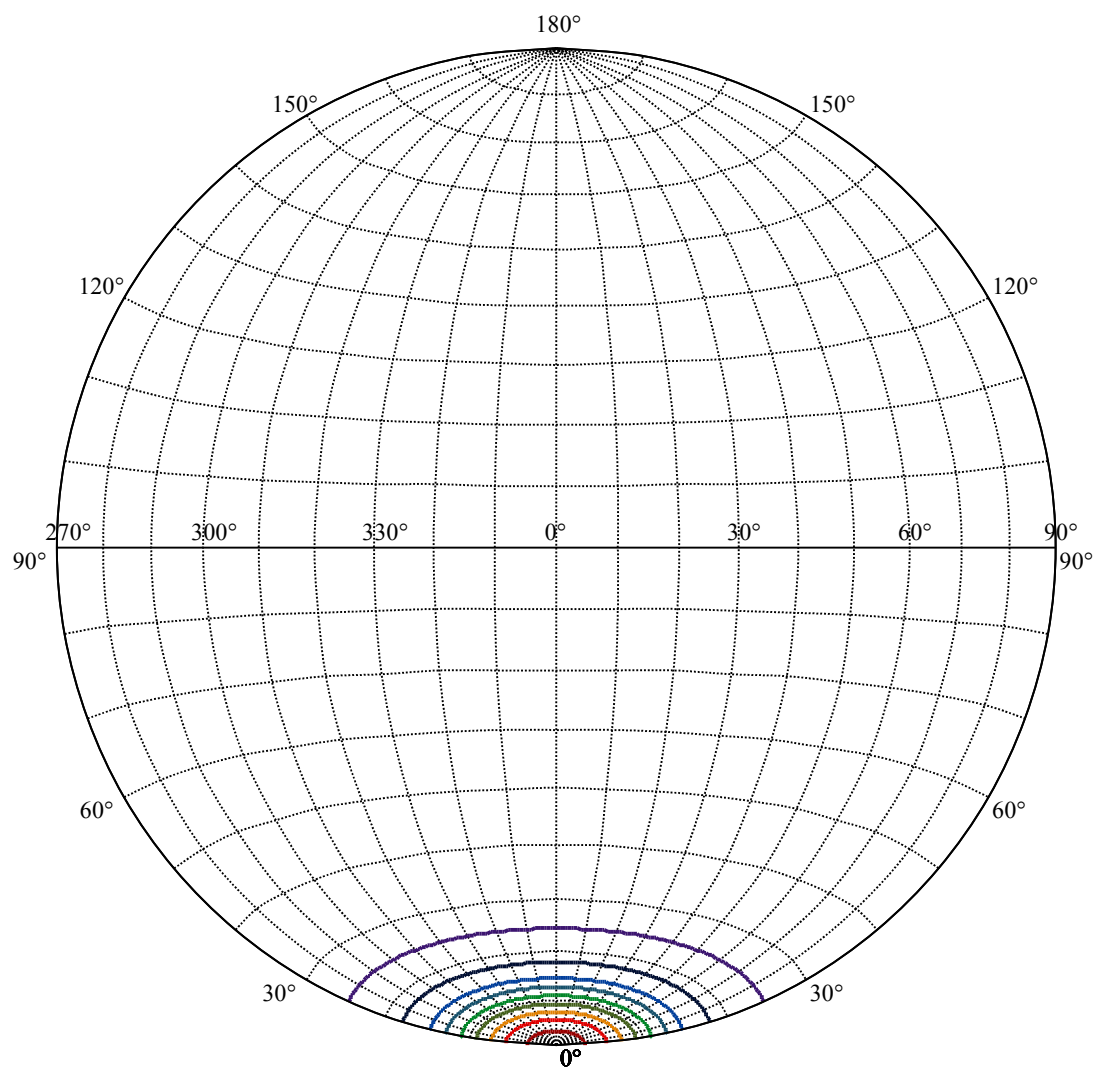
ZONAL LUMEN SUMMARY

0-10	720.48
10-20	839.49
20-30	471.00
30-40	284.50
40-50	28.51
50-60	10.36
60-70	10.84
70-80	11.32
80-90	5.77
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









House

[Unit:cd]

Road

Imax:9953.72

(10%Imax) 995.372

(20%Imax) 1990.74

(30%Imax) 2986.12

(40%Imax) 3981.49

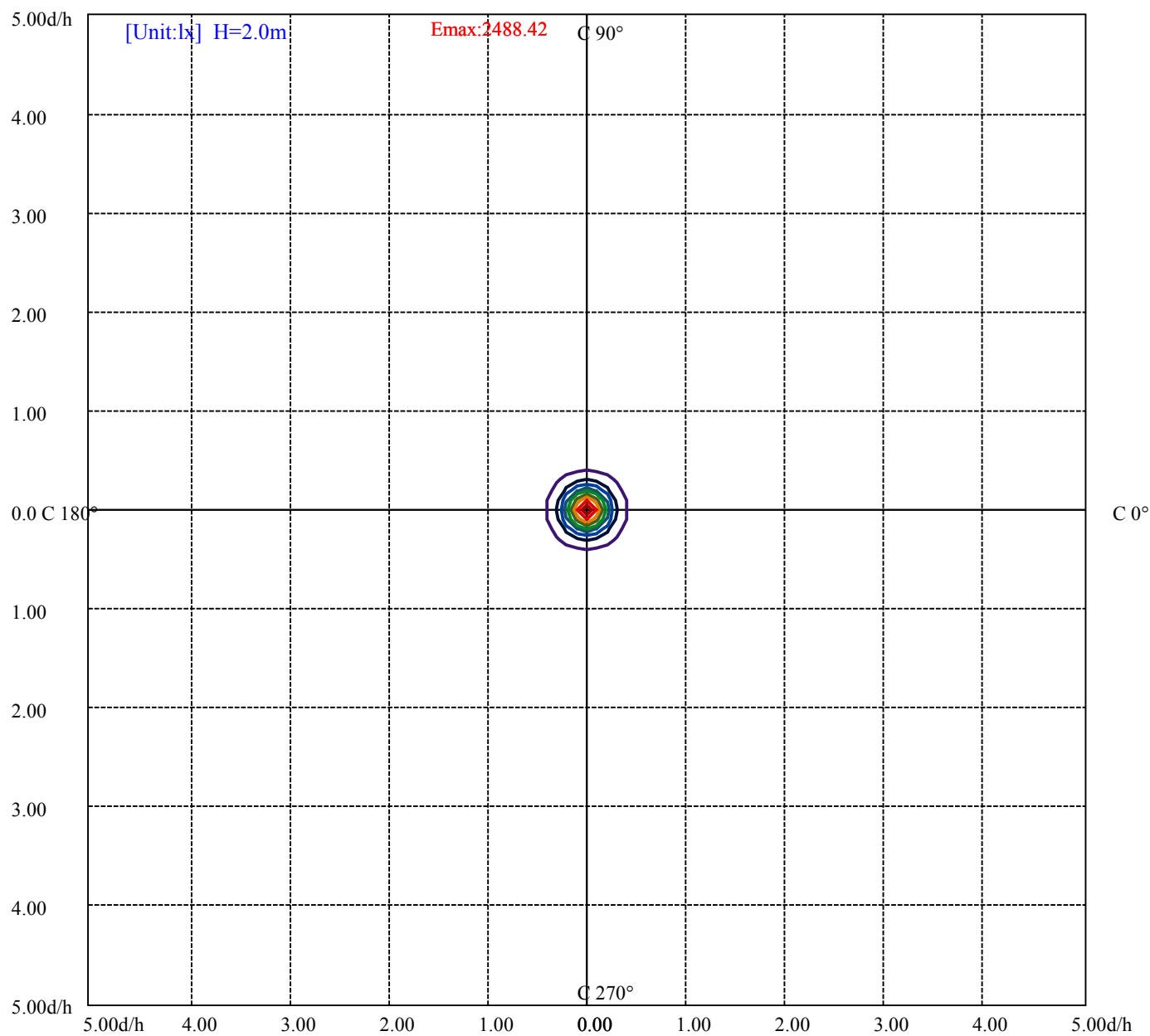
(50%Imax) 4976.86

(60%Imax) 5972.23

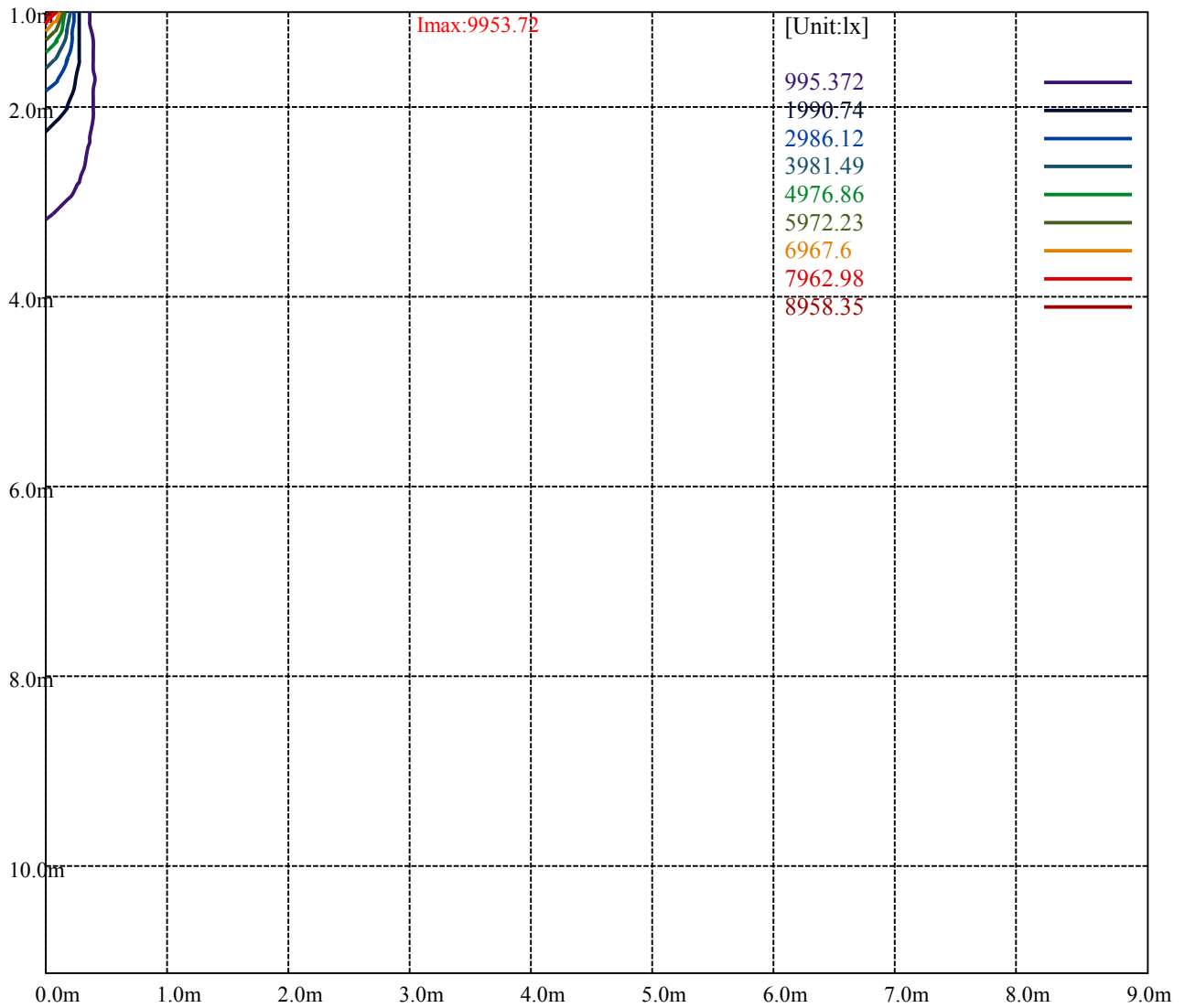
(70%Imax) 6967.6

(80%Imax) 7962.98

(90%Imax) 8958.35



(10%Emax) 248.8418	—
(20%Emax) 497.6825	—
(30%Emax) 746.525	—
(40%Emax) 995.3675	—
(50%Emax) 1244.21	—
(60%Emax) 1493.05	—
(70%Emax) 1741.892	—
(80%Emax) 1990.735	—
(90%Emax) 2239.577	—



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

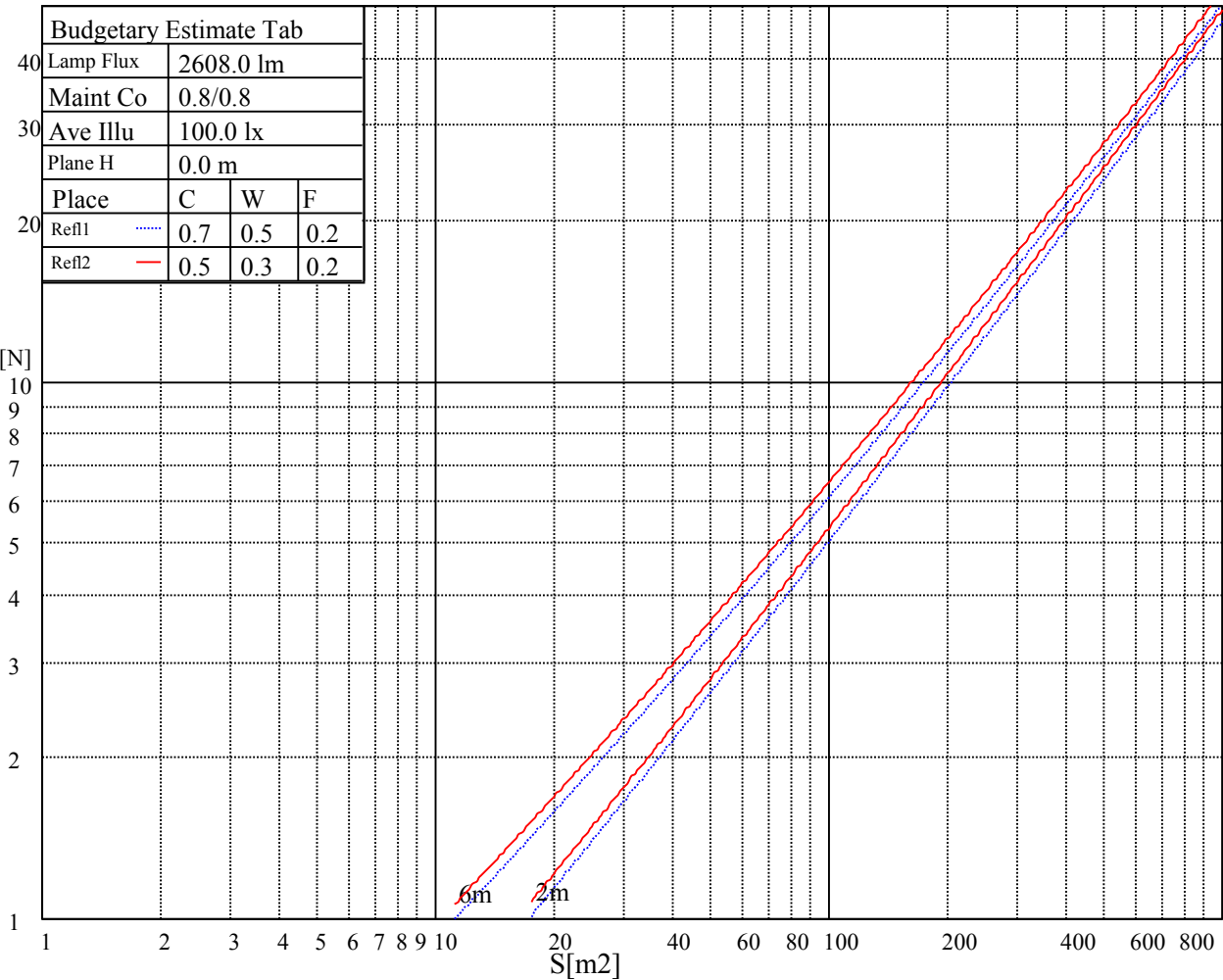
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

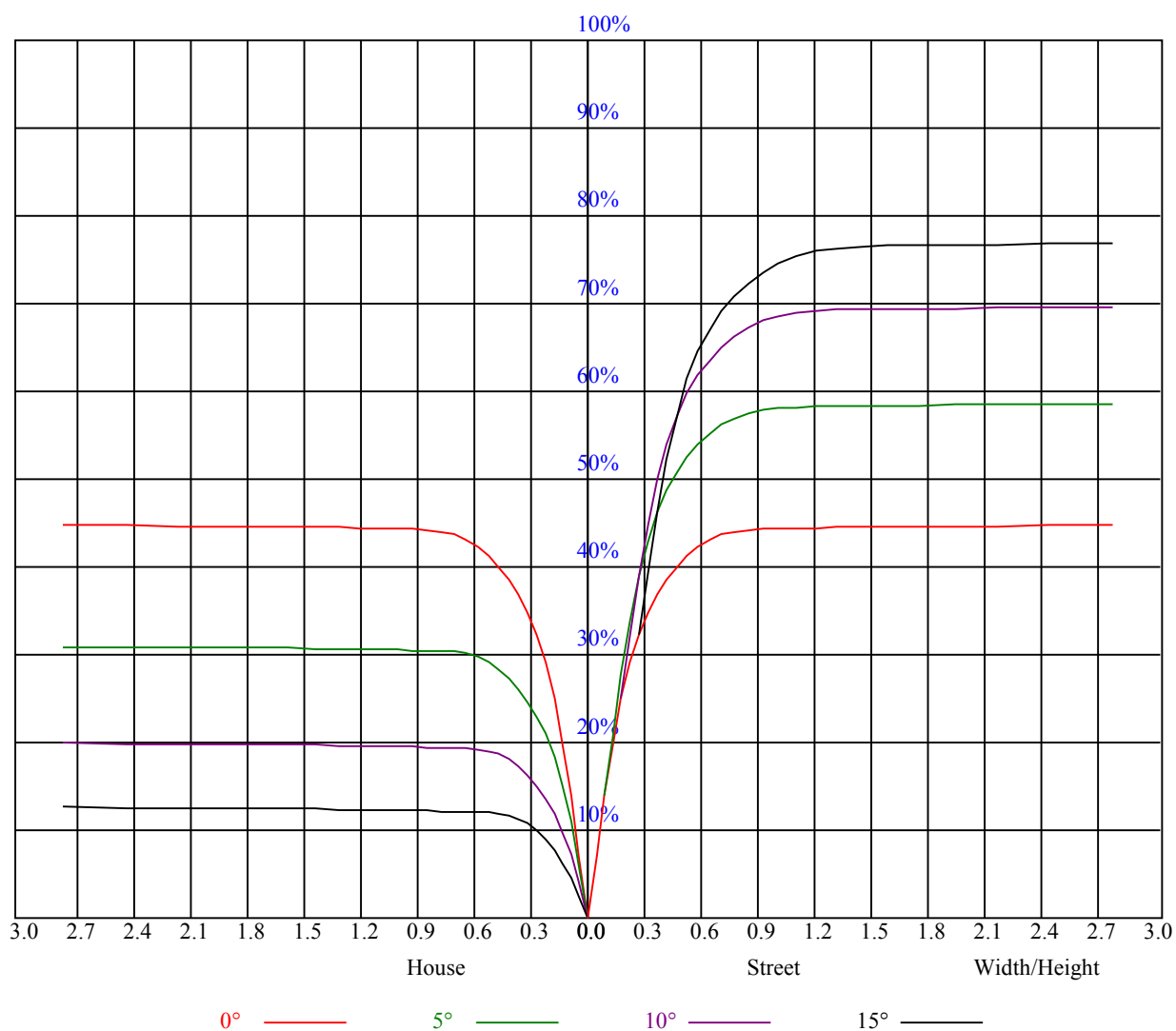
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





RHOC	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	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.92
1	1.02	1.00	0.99	1.00	0.99	0.97	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.87
2	0.97	0.94	0.91	0.95	0.92	0.90	0.92	0.90	0.88	0.90	0.88	0.86	0.87	0.86	0.84	0.83
3	0.92	0.88	0.85	0.91	0.87	0.84	0.88	0.86	0.83	0.86	0.84	0.82	0.84	0.82	0.81	0.79
4	0.88	0.84	0.80	0.87	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.76
5	0.84	0.79	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.79	0.76	0.74	0.73
6	0.80	0.76	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
7	0.77	0.73	0.70	0.77	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.74	0.71	0.68	0.67
8	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
9	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.63
10	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.62	0.61



NATA 3-2040-M

Intensity data(cd)										Appendix Page: 14 Total:14	
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	9816.19	9486.56	6912.00	3716.44	1887.19	1085.63	858.38	686.25	295.31		
45.0	9873.56	9214.31	6539.63	3521.81	1738.69	1039.50	849.94	632.81	297.56		
90.0	10013.63	8210.25	5266.69	2535.75	1122.24	924.19	806.63	425.59	48.99		
135.0	10111.50	8319.94	5227.88	2473.31	1308.94	910.13	799.31	393.19	33.47		
180.0	9816.19	7472.81	4241.81	1968.75	1109.31	856.52	720.96	270.00	21.66		
225.0	9873.56	7682.63	4548.38	2121.19	1111.05	878.57	760.16	297.73	24.24		
270.0	10013.63	8484.19	5695.88	2928.38	1491.75	963.00	824.63	514.69	72.73		
315.0	10111.50	8767.69	5837.63	3013.88	1541.25	971.44	828.96	531.84	92.14		
360.0	9816.19	9486.56	6912.00	3716.44	1887.19	1085.63	858.38	686.25	295.31		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	17.55	12.71	11.81	11.31	11.08	10.91	10.80	10.69	10.69		
45.0	16.43	12.71	11.81	11.31	11.03	10.86	10.69	10.63	10.58		
90.0	13.16	12.15	11.48	11.08	10.86	10.74	10.63	10.63	10.58		
135.0	12.94	12.04	11.36	11.08	10.86	10.74	10.69	10.69	10.63		
180.0	12.54	11.81	11.31	11.03	10.86	10.80	10.69	10.69	10.63		
225.0	12.66	11.76	11.25	10.97	10.80	10.69	10.63	10.58	10.52		
270.0	14.18	12.04	11.36	11.03	10.86	10.74	10.69	10.58	10.58		
315.0	14.96	12.15	11.42	11.08	10.86	10.74	10.69	10.63	10.58		
360.0	17.55	12.71	11.81	11.31	11.08	10.91	10.80	10.69	10.69		
C/γ(°)	90.0										
0.0	10.63										
45.0	10.52										
90.0	10.46										
135.0	10.52										
180.0	10.63										
225.0	10.52										
270.0	10.46										
315.0	10.52										
360.0	10.63										