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Nata

LumCAT: 1709-M	
Luminaire: 92.70.122.00	
Report No: NATA0100	Voltage(V): 37.6000
Test No: GC2018080210	Current(A): 0.2000
LampCAT: BRIDGELUX V4 HD	Power (W): 7.5200
Lamp flux(lm): 719.0	PF: 0.0000
Number of Lamps: 1	Ballast type: AC
Length(mm): 46	Width(mm): 46
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 661.21
Efficiency(%): 91.96%
Lumens(lm)/Power(W): 88.59
Central intensity(cd): 5288.993
Maximum intensity(cd): 5288.993
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=10.5
[C90/270]Total=10.5
Field angle(10%Imax): [C0/180]Total=26.6
[C90/270]Total=26.6
Maximum s/h(1/2): C0_180=0.18 C90_270=0.18
Maximum s/h(1/4): C0_180=0.19 C90_270=0.19
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 92.65%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.986%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5288.993	5.061	5.061	.704%	.765%
2.0	4634.648	35.473	40.535	4.934%	6.130%
4.0	3402.141	52.048	92.582	7.239%	14.002%
6.0	2213.474	50.743	143.325	7.057%	21.676%
8.0	1240.090	37.851	181.176	5.264%	27.401%
10.0	827.890	31.529	212.705	4.385%	32.169%
12.0	608.993	27.769	240.473	3.862%	36.369%
14.0	486.389	25.806	266.28	3.589%	40.272%
16.0	418.869	25.321	291.601	3.522%	44.101%
18.0	372.388	25.237	316.838	3.510%	47.918%
20.0	332.486	24.940	341.778	3.469%	51.690%
22.0	297.146	24.412	366.19	3.395%	55.382%
24.0	275.330	24.560	390.75	3.416%	59.096%
26.0	259.515	24.950	415.7	3.470%	62.870%
28.0	250.300	25.771	441.471	3.584%	66.767%
30.0	241.608	26.494	467.965	3.685%	70.774%
32.0	233.625	27.152	495.117	3.776%	74.880%
34.0	226.227	27.744	522.861	3.859%	79.076%
36.0	217.879	28.087	550.948	3.906%	83.324%
38.0	208.196	28.111	579.059	3.910%	87.575%
40.0	199.490	28.122	607.181	3.911%	91.829%
42.0	160.366	23.534	630.715	3.273%	95.388%
44.0	79.440	12.102	642.817	1.683%	97.218%
46.0	19.146	3.020	645.838	.420%	97.675%
48.0	10.268	1.673	647.511	.233%	97.928%
50.0	7.907	1.328	648.84	.185%	98.129%
52.0	5.808	1.004	649.844	.140%	98.281%
54.0	4.542	0.806	650.649	.112%	98.403%
56.0	4.054	0.737	651.386	.103%	98.514%
58.0	3.730	0.694	652.08	.096%	98.619%
60.0	3.537	0.672	652.752	.093%	98.721%
62.0	3.345	0.648	653.4	.090%	98.819%
64.0	3.207	0.632	654.032	.088%	98.914%
66.0	3.056	0.612	654.644	.085%	99.007%
68.0	2.932	0.596	655.24	.083%	99.097%
70.0	2.849	0.587	655.827	.082%	99.186%
72.0	2.773	0.578	656.406	.080%	99.273%
74.0	2.725	0.575	656.98	.080%	99.360%

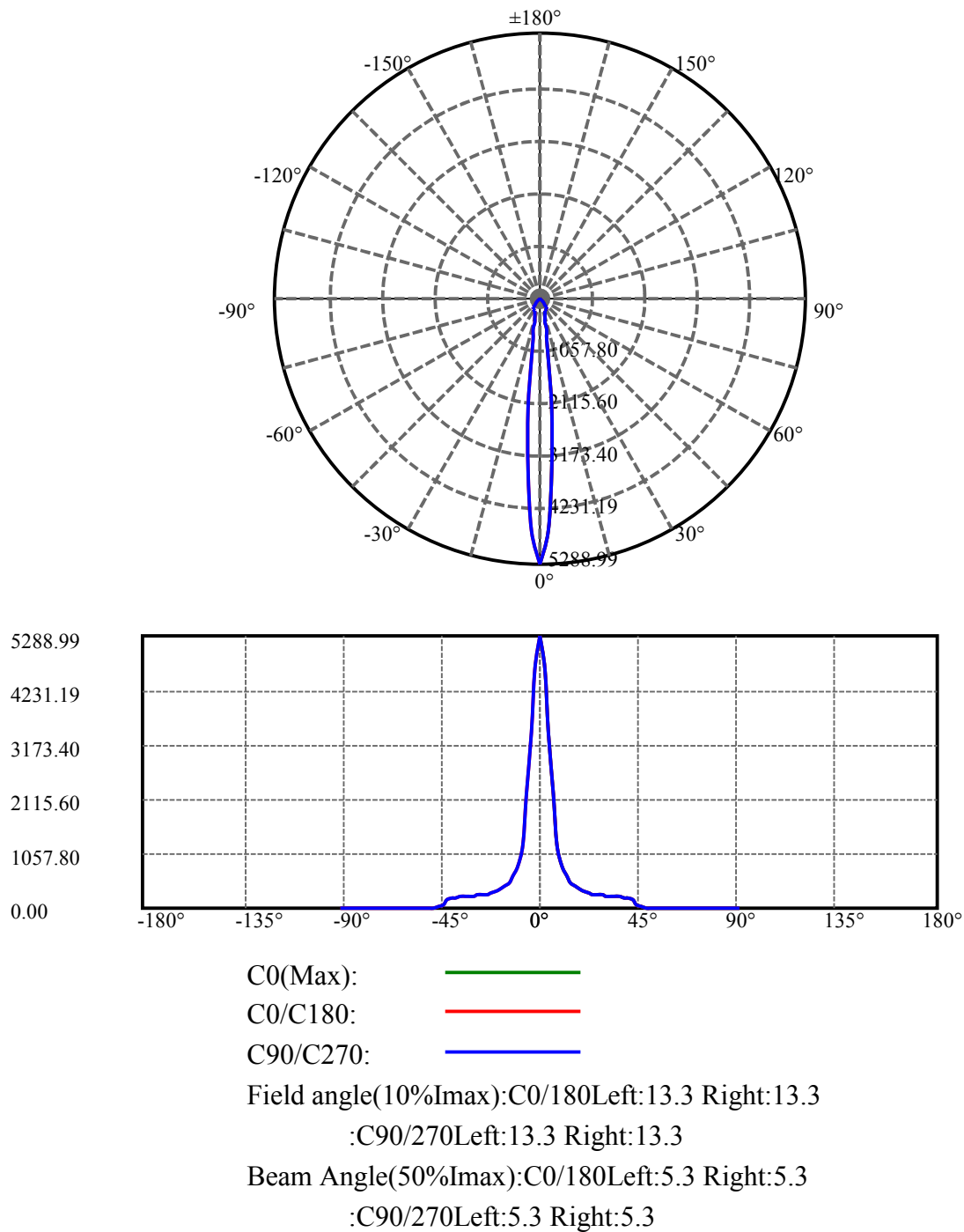
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	2.670	0.568	657.549	.079%	99.446%
78.0	2.650	0.568	658.117	.079%	99.532%
80.0	2.622	0.566	658.683	.079%	99.618%
82.0	2.588	0.562	659.245	.078%	99.703%
84.0	2.595	0.566	659.811	.079%	99.788%
86.0	2.567	0.562	660.373	.078%	99.873%
88.0	2.553	0.560	660.932	.078%	99.958%
90.0	2.539	0.278	661.211	.039%	100.000%

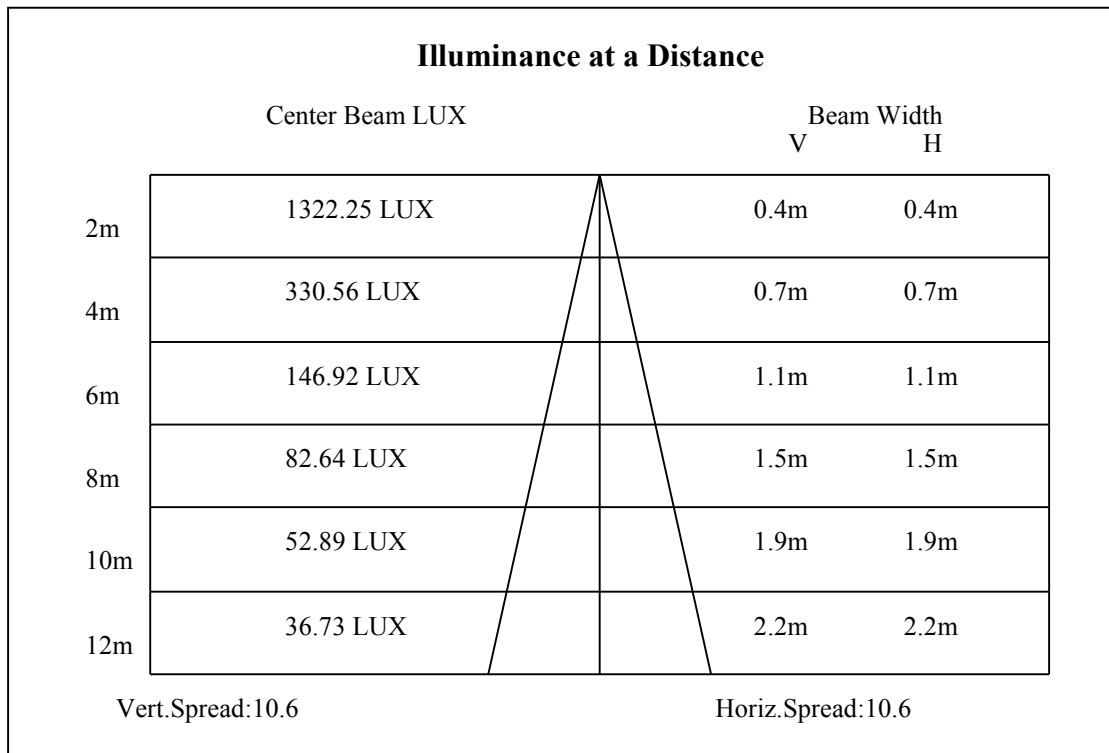
ZONAL LUMEN SUMMARY

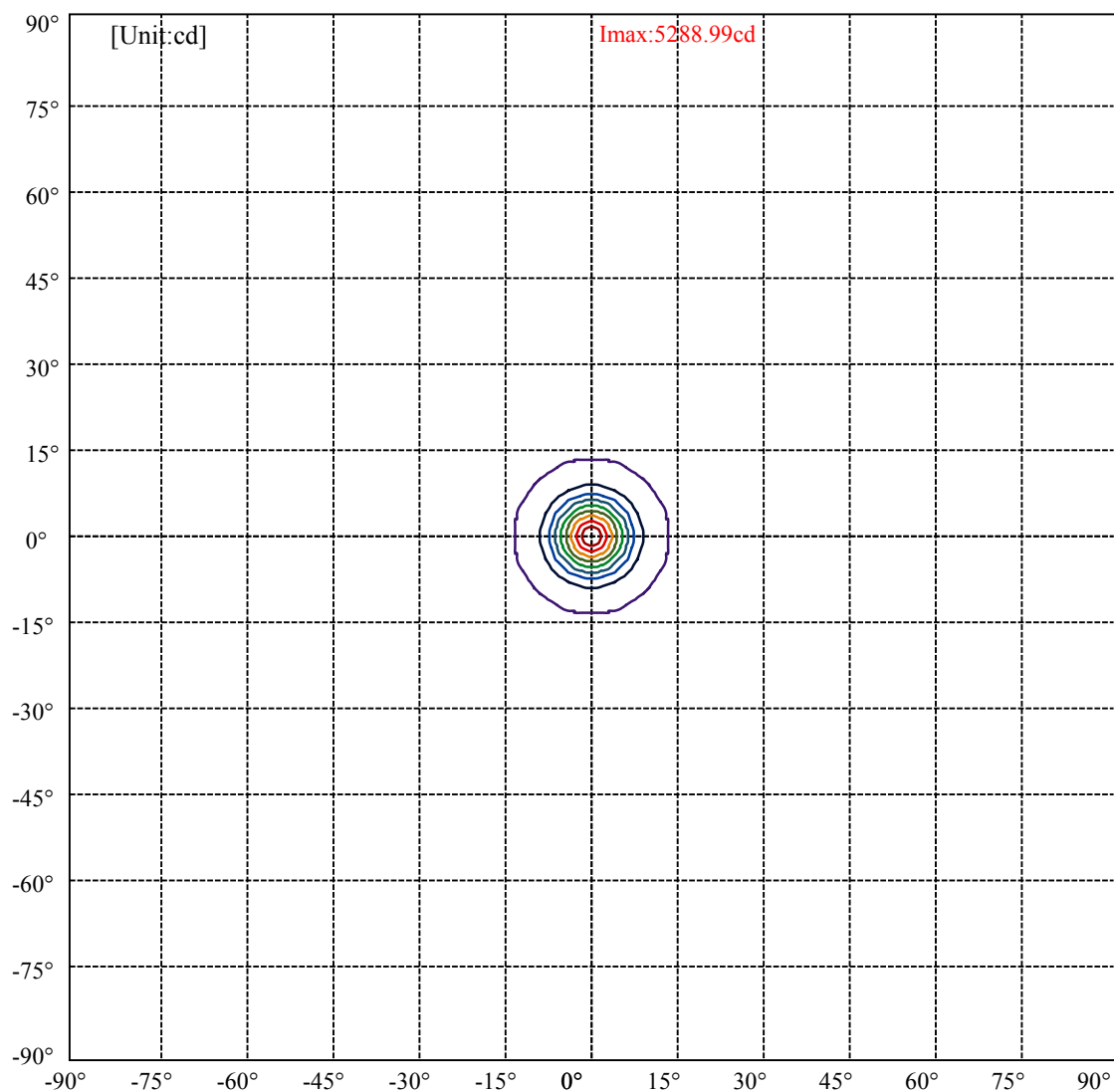
Zone	Lumens	%Lamp	%Fixt
0-30	467.97	65.09%	70.77%
0-40	607.18	84.45%	91.83%
0-60	652.75	90.79%	98.72%
0-90	660.93	91.92%	99.96%
0-120	660.93	91.92%	99.96%
0-180	661.21	91.96%	100.00%
60-90	8.85	1.23%	1.34%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-34.43	528.97	73.57%	80.00%

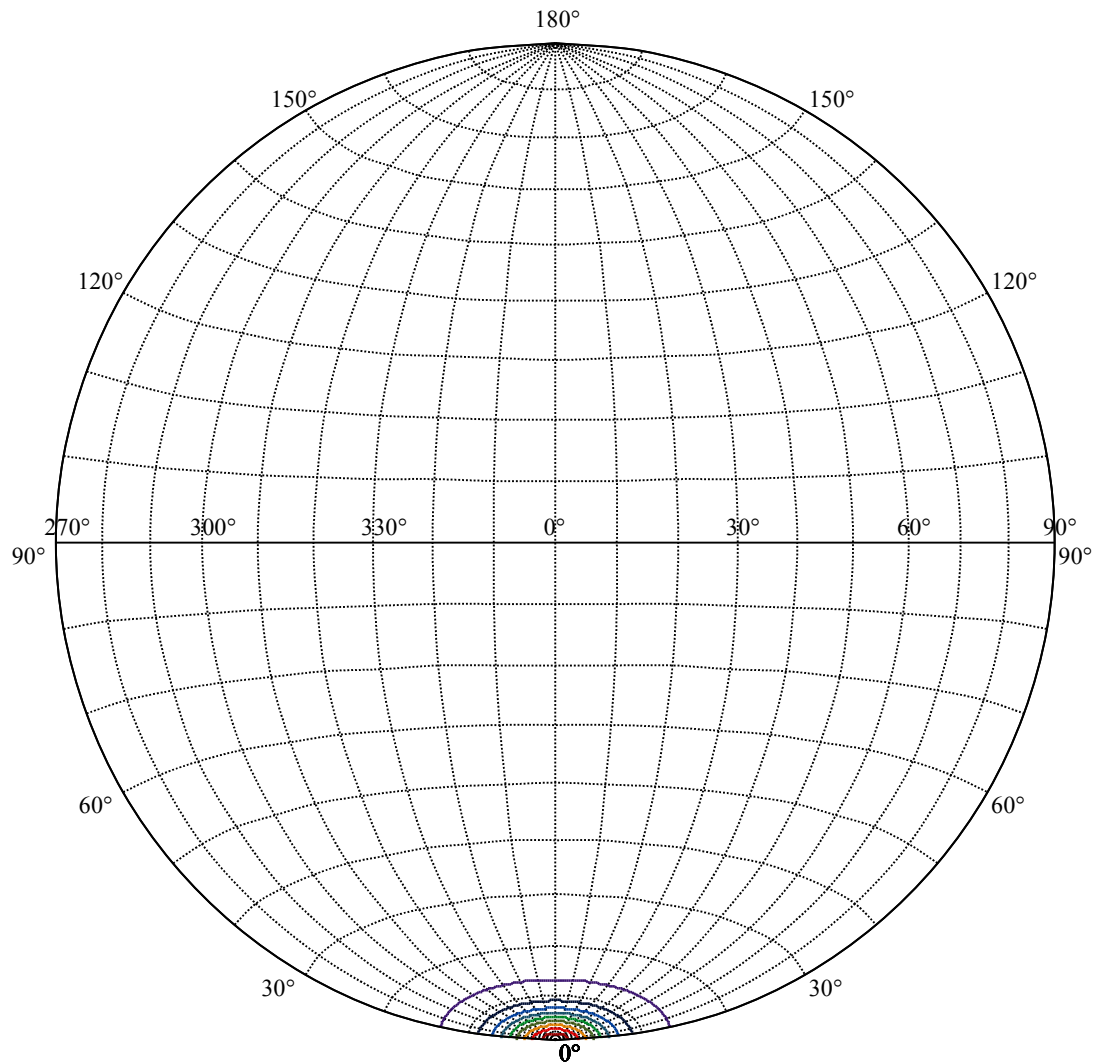
ZONAL LUMEN SUMMARY

0-10	212.70
10-20	129.07
20-30	126.19
30-40	139.22
40-50	41.66
50-60	3.91
60-70	3.08
70-80	2.86
80-90	2.25
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









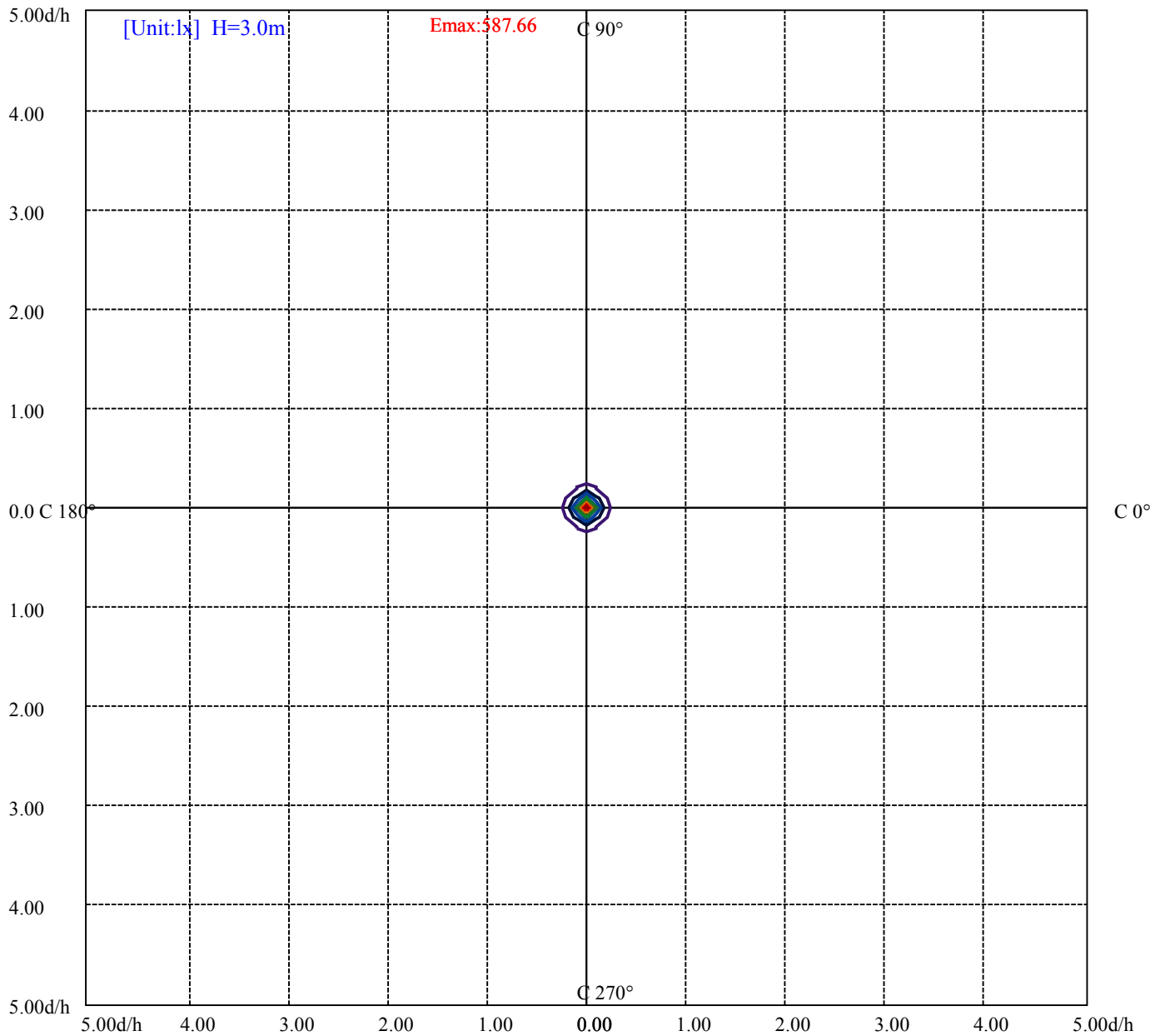
House

[Unit:cd]

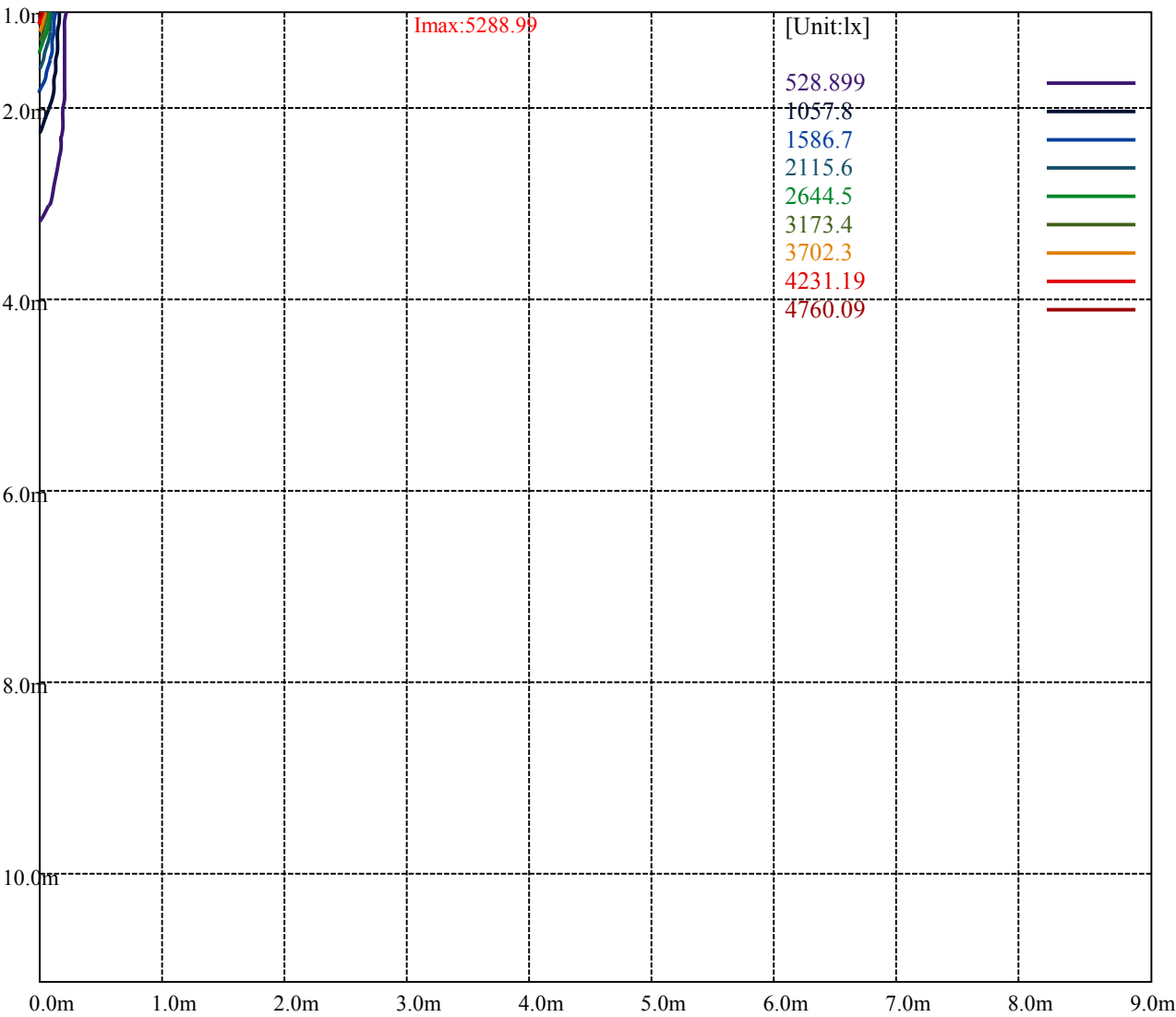
Road

Imax:5288.99

(10%Imax)	528.899	—
(20%Imax)	1057.8	—
(30%Imax)	1586.7	—
(40%Imax)	2115.6	—
(50%Imax)	2644.5	—
(60%Imax)	3173.4	—
(70%Imax)	3702.3	—
(80%Imax)	4231.19	—
(90%Imax)	4760.09	—



(10%Emax) 58.766	—
(20%Emax) 117.5322	—
(30%Emax) 176.2978	—
(40%Emax) 235.0645	—
(50%Emax) 293.83	—
(60%Emax) 352.5967	—
(70%Emax) 411.3622	—
(80%Emax) 470.1289	—
(90%Emax) 528.8944	—



Luminance Table

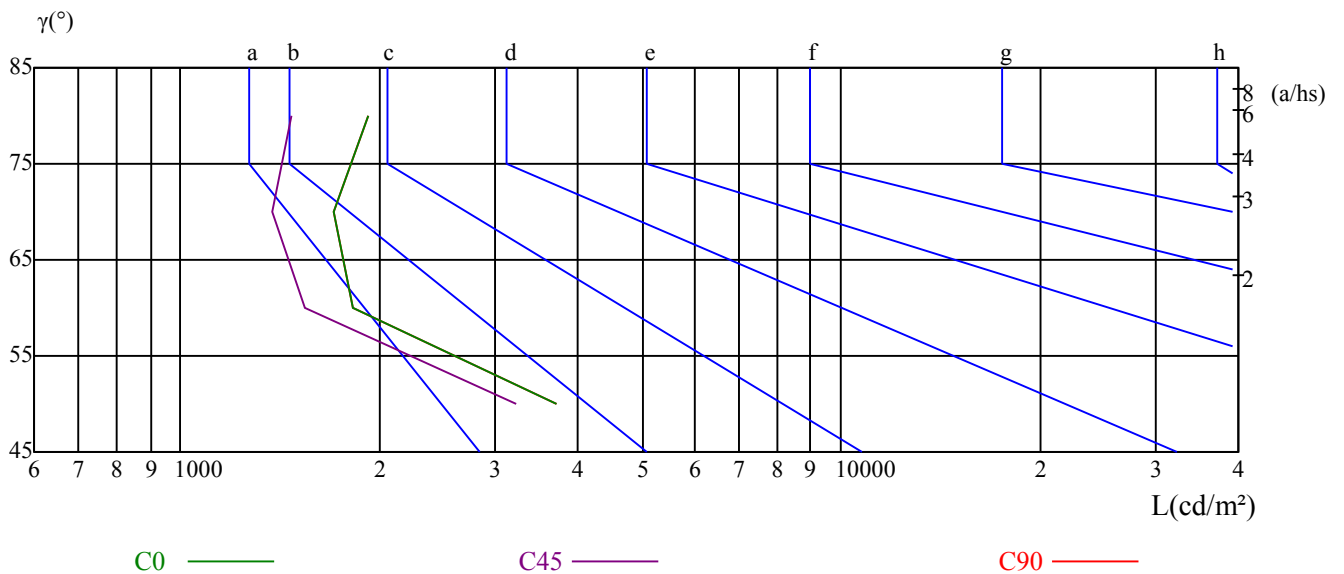
γ	45	50	55	60	65	70	75	80	85
C0	0	3703	0	1829	0	1701	0	1922	0
C45	0	3219	0	1540	0	1377	0	1476	0
C90	0	3703	0	1829	0	1701	0	1922	0

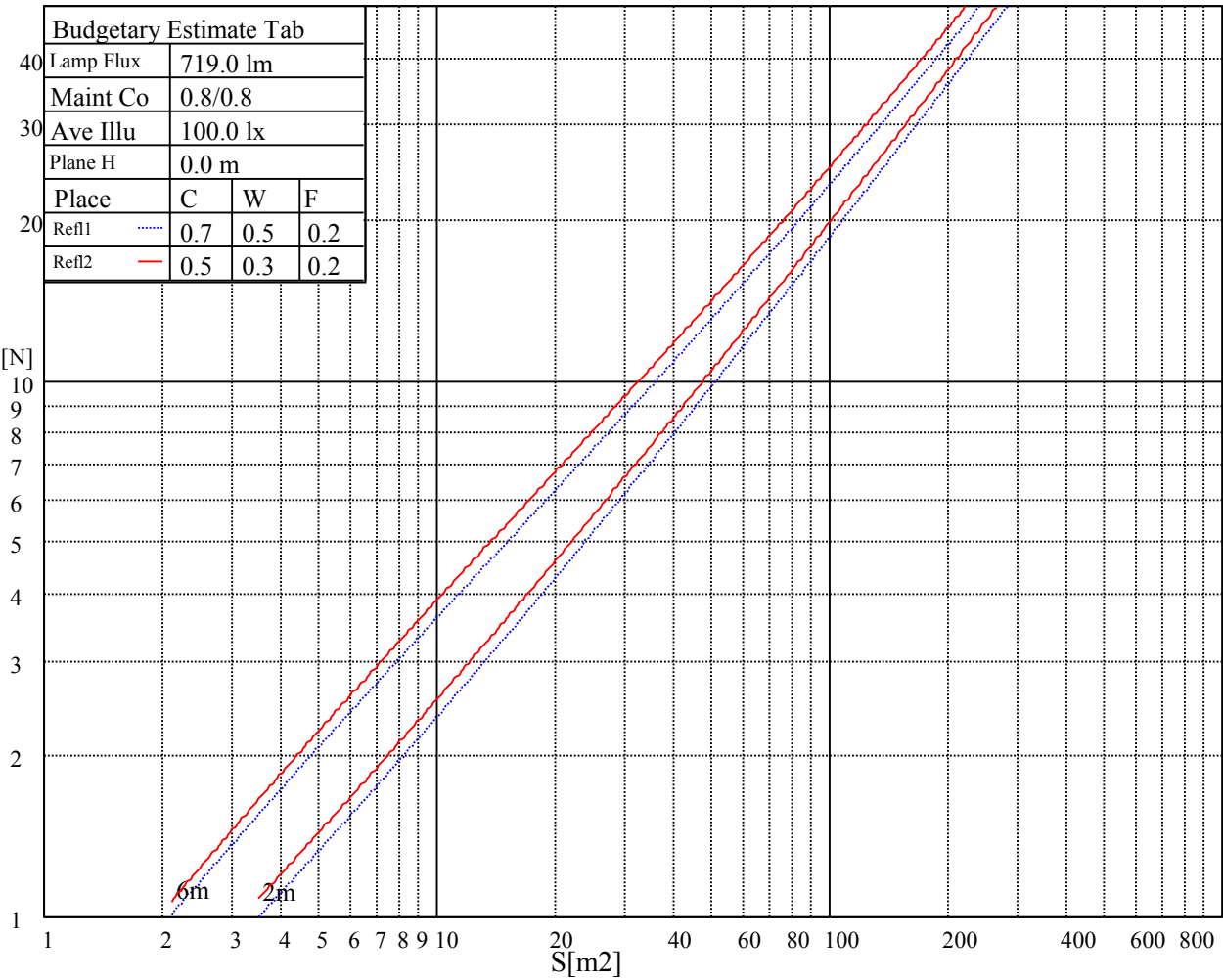
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

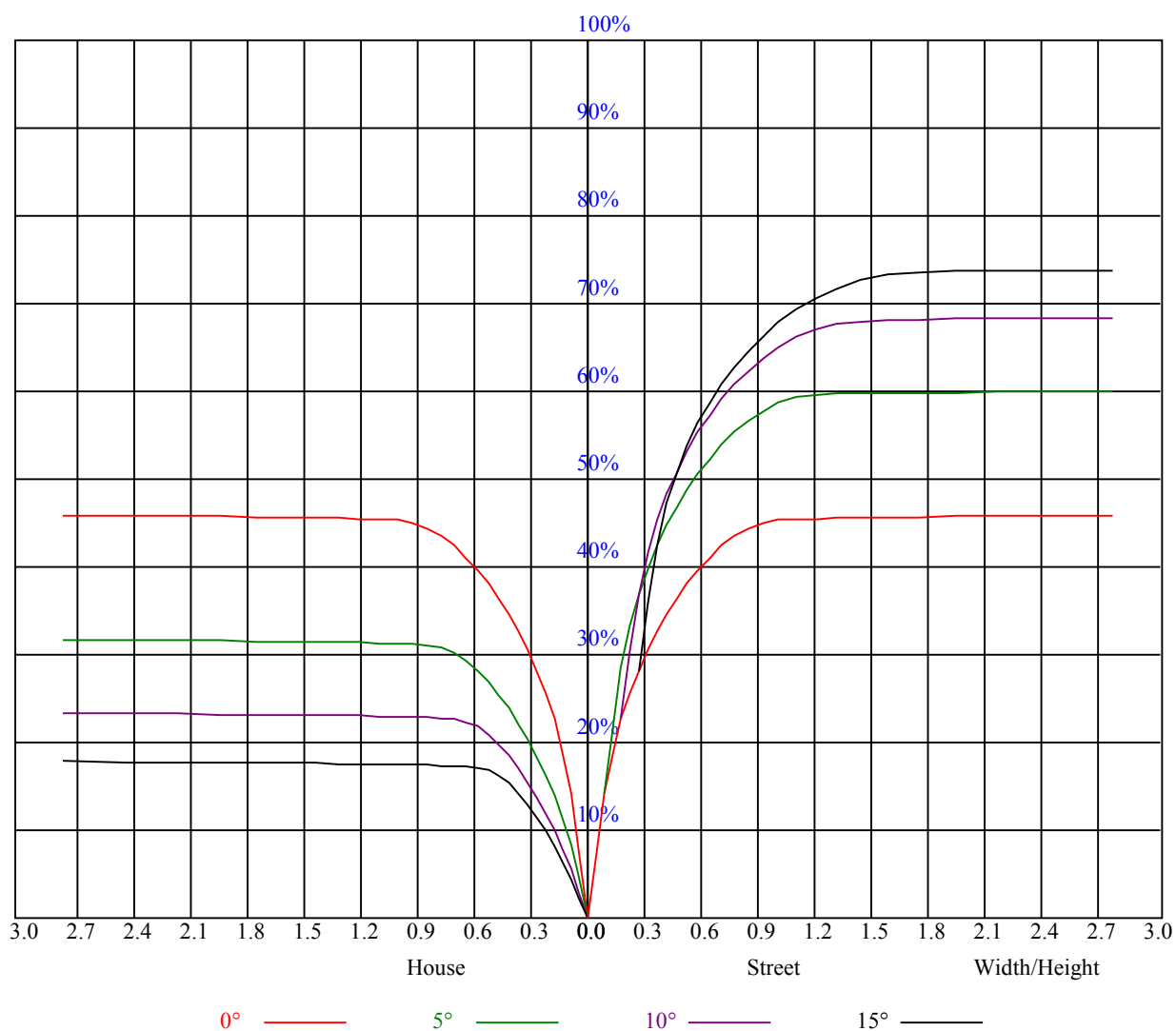
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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 RHOF=20 CU															
0	1.10	1.10	1.10	1.08	1.08	1.08	1.03	1.03	1.03	0.99	0.99	0.99	0.95	0.95	0.95	0.93
1	1.02	1.00	0.98	1.00	0.98	0.96	0.96	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.88	0.86
2	0.96	0.92	0.89	0.94	0.91	0.88	0.91	0.89	0.86	0.89	0.86	0.84	0.86	0.84	0.83	0.81
3	0.90	0.86	0.82	0.89	0.85	0.82	0.87	0.83	0.80	0.84	0.82	0.79	0.82	0.80	0.78	0.77
4	0.85	0.80	0.77	0.84	0.80	0.76	0.82	0.78	0.76	0.80	0.77	0.75	0.79	0.76	0.74	0.72
5	0.81	0.76	0.72	0.80	0.75	0.72	0.78	0.74	0.71	0.77	0.73	0.71	0.75	0.72	0.70	0.69
6	0.77	0.72	0.68	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.67	0.72	0.69	0.67	0.65
7	0.73	0.68	0.65	0.73	0.68	0.65	0.72	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.62
8	0.70	0.65	0.62	0.70	0.65	0.62	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.60
9	0.67	0.62	0.59	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.57
10	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.56	0.63	0.59	0.56	0.62	0.59	0.56	0.55



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	5343.22	4494.80	3192.17	2124.08	1256.39	800.52	600.67	484.50	419.53
45.0	5315.70	4325.78	3207.04	1975.97	1201.88	808.23	597.91	475.69	414.57
90.0	5230.36	4304.31	2987.36	1886.78	1075.69	751.13	569.39	467.81	405.60
135.0	5266.70	4790.46	3612.80	2405.96	1429.81	862.73	625.44	491.65	420.08
180.0	5343.22	4842.76	3577.56	2338.80	1086.87	816.93	599.89	470.90	408.57
225.0	5315.70	4897.82	3726.22	2455.52	1263.54	864.33	616.63	489.56	422.17
270.0	5230.36	4962.78	3787.88	2519.38	1525.61	929.90	673.89	525.24	445.96
315.0	5266.70	4458.47	3126.10	2001.30	1080.92	789.34	588.11	485.76	414.46
360.0	5343.22	4494.80	3192.17	2124.08	1256.39	800.52	600.67	484.50	419.53
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	373.28	327.59	294.00	278.03	261.46	252.16	244.23	236.19	228.32
45.0	368.88	324.28	292.90	272.20	259.04	248.91	240.93	232.39	225.62
90.0	357.65	323.13	288.88	268.79	257.06	247.53	239.11	231.35	223.97
135.0	378.24	337.50	299.51	279.14	255.13	247.20	238.17	230.08	222.37
180.0	367.89	332.43	296.97	274.02	260.31	251.17	242.25	234.15	226.83
225.0	376.42	340.25	300.28	272.09	255.46	245.72	236.08	228.81	221.55
270.0	394.75	350.71	312.17	284.09	265.04	256.18	247.09	239.44	231.79
315.0	362.00	324.01	292.46	274.29	262.62	253.53	245.00	236.58	229.36
360.0	373.28	327.59	294.00	278.03	261.46	252.16	244.23	236.19	228.32
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	220.83	210.10	202.00	163.96	82.47	18.28	9.91	7.38	5.23
45.0	216.65	206.68	198.37	146.17	61.17	13.60	9.74	7.16	5.23
90.0	214.55	204.70	195.51	131.81	52.08	12.44	9.80	7.43	5.40
135.0	214.89	205.36	197.05	161.54	84.18	20.76	10.79	8.42	6.22
180.0	218.19	208.77	199.19	167.98	85.50	21.31	10.52	8.37	6.28
225.0	213.23	205.20	196.00	168.58	91.78	22.90	10.46	8.42	6.28
270.0	224.08	214.33	205.97	179.15	99.49	26.59	10.79	8.48	6.28
315.0	220.61	210.43	201.84	163.74	78.84	17.29	10.13	7.60	5.56
360.0	220.83	210.10	202.00	163.96	82.47	18.28	9.91	7.38	5.23
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	4.18	3.80	3.63	3.41	3.25	3.08	2.97	2.92	2.81
45.0	4.24	3.74	3.58	3.41	3.25	3.08	3.03	2.86	2.81
90.0	4.57	3.91	3.63	3.47	3.30	3.19	3.03	2.97	2.86
135.0	4.57	4.18	3.96	3.69	3.52	3.36	3.19	3.03	2.92
180.0	4.96	4.46	3.80	3.69	3.47	3.30	3.14	2.97	2.92
225.0	4.73	4.18	3.80	3.58	3.36	3.25	3.08	2.92	2.86
270.0	4.57	4.07	3.85	3.63	3.36	3.25	3.03	2.92	2.81
315.0	4.51	4.07	3.58	3.41	3.25	3.14	2.97	2.86	2.81
360.0	4.18	3.80	3.63	3.41	3.25	3.08	2.97	2.92	2.81
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	2.75	2.70	2.64	2.64	2.64	2.59	2.59	2.59	2.59
45.0	2.75	2.70	2.64	2.64	2.59	2.59	2.59	2.53	2.53
90.0	2.75	2.75	2.70	2.64	2.64	2.59	2.59	2.53	2.53
135.0	2.86	2.81	2.70	2.64	2.64	2.59	2.59	2.59	2.59
180.0	2.81	2.75	2.70	2.70	2.64	2.59	2.59	2.59	2.53
225.0	2.75	2.70	2.64	2.64	2.59	2.59	2.59	2.53	2.53
270.0	2.75	2.70	2.70	2.64	2.64	2.59	2.64	2.59	2.59
315.0	2.75	2.70	2.64	2.64	2.59	2.59	2.59	2.59	2.53
360.0	2.75	2.70	2.64	2.64	2.64	2.59	2.59	2.59	2.59

Nata 1709

Intensity data(cd)

Appendix Page: 16 Total:16

C/γ(°)	90.0
0.0	2.53
45.0	2.53
90.0	2.53
135.0	2.53
180.0	2.59
225.0	2.53
270.0	2.53
315.0	2.53
360.0	2.53

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/8/2
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42