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NATA

LumCAT: 2-1701-E
Luminaire: 99.02.73.173+92.76.365.00
Report No: NATA0100
Test No: GC2018101004
LampCAT: BRIDGELUX V22B
Lamp flux(lm): 3728.0
Number of Lamps: 1
Length(mm): 71
Phm Type: C

Voltage(V): 49.3000
Current(A): 0.5000
Power (W): 24.6500
PF: 1.0000
Ballast type: DC
Width(mm): 71
Height(mm): 0

Photometric Results

Lumens(lm): 3327.85
Efficiency(%): 89.27%
Lumens(lm)/Power(W): 135.37
Central intensity(cd): 9952.875
Maximum intensity(cd): 9952.875
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=25.9
 [C90/270]Total=25.9
Field angle(10%Imax): [C0/180]Total=66.8
 [C90/270]Total=66.8
Maximum s/h(1/2): C0_180=0.44 C90_270=0.44
Maximum s/h(1/4): C0_180=0.44 C90_270=0.44
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.51%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.386%

Equipment:
Temperature(°C): 25.0

Date: 2018/10/10
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9952.875	9.524	9.524	.255%	.286%
2.0	9932.344	76.021	85.546	2.039%	2.571%
4.0	9803.531	149.980	235.526	4.023%	7.077%
6.0	9366.961	214.733	450.258	5.760%	13.530%
8.0	8465.836	258.399	708.657	6.931%	21.295%
10.0	7070.133	269.255	977.912	7.222%	29.386%
12.0	5604.750	255.564	1233.476	6.855%	37.065%
14.0	4250.953	225.542	1459.018	6.050%	43.843%
16.0	3291.117	198.951	1657.969	5.337%	49.821%
18.0	2639.250	178.866	1836.835	4.798%	55.196%
20.0	2203.594	165.291	2002.126	4.434%	60.163%
22.0	1898.508	155.974	2158.1	4.184%	64.850%
24.0	1688.625	150.630	2308.73	4.041%	69.376%
26.0	1534.852	147.562	2456.292	3.958%	73.810%
28.0	1410.398	145.217	2601.508	3.895%	78.174%
30.0	1278.415	140.187	2741.695	3.760%	82.386%
32.0	1115.487	129.640	2871.335	3.477%	86.282%
34.0	945.373	115.939	2987.274	3.110%	89.766%
36.0	750.136	96.699	3083.974	2.594%	92.672%
38.0	561.340	75.794	3159.767	2.033%	94.949%
40.0	370.997	52.300	3212.067	1.403%	96.521%
42.0	220.317	32.331	3244.399	.867%	97.492%
44.0	85.809	13.073	3257.472	.351%	97.885%
46.0	31.120	4.910	3262.381	.132%	98.033%
48.0	19.976	3.256	3265.637	.087%	98.131%
50.0	17.402	2.924	3268.561	.078%	98.218%
52.0	16.748	2.894	3271.455	.078%	98.305%
54.0	16.200	2.874	3274.329	.077%	98.392%
56.0	15.820	2.876	3277.206	.077%	98.478%
58.0	15.532	2.889	3280.095	.077%	98.565%
60.0	15.391	2.923	3283.018	.078%	98.653%
62.0	15.363	2.975	3285.993	.080%	98.742%
64.0	15.328	3.021	3289.014	.081%	98.833%
66.0	15.293	3.064	3292.078	.082%	98.925%
68.0	15.272	3.105	3295.184	.083%	99.018%
70.0	15.202	3.133	3298.317	.084%	99.113%
72.0	15.124	3.155	3301.471	.085%	99.207%
74.0	15.033	3.169	3304.64	.085%	99.303%

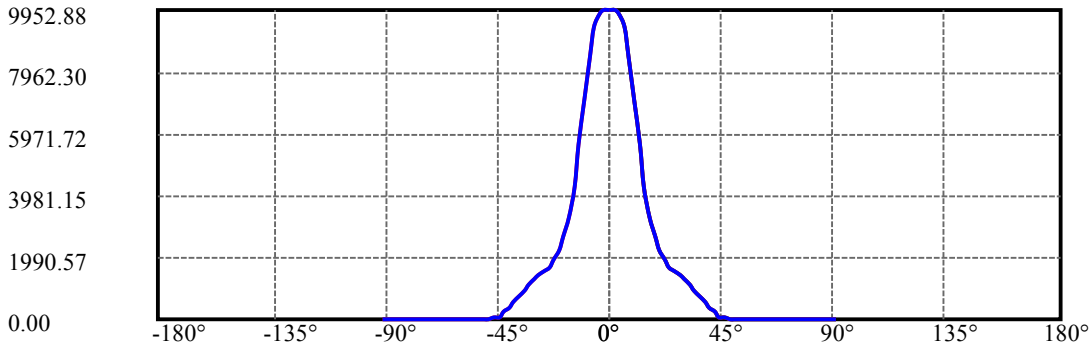
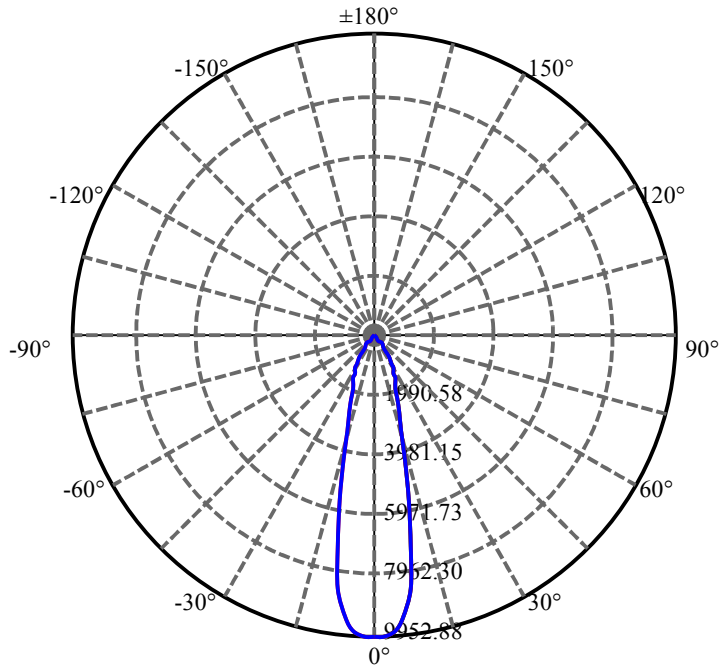
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	14.920	3.175	3307.815	.085%	99.398%
78.0	14.815	3.178	3310.994	.085%	99.493%
80.0	14.639	3.162	3314.155	.085%	99.588%
82.0	14.470	3.143	3317.298	.084%	99.683%
84.0	14.273	3.113	3320.411	.084%	99.776%
86.0	13.957	3.054	3323.465	.082%	99.868%
88.0	13.345	2.925	3326.39	.078%	99.956%
90.0	13.324	1.461	3327.851	.039%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2741.70	73.54%	82.39%
0-40	3212.07	86.16%	96.52%
0-60	3283.02	88.06%	98.65%
0-90	3326.39	89.23%	99.96%
0-120	3326.39	89.23%	99.96%
0-180	3327.85	89.27%	100.00%
60-90	46.30	1.24%	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%
0-28.87	2662.28	71.41%	80.00%

ZONAL LUMEN SUMMARY

0-10	977.91
10-20	1024.21
20-30	739.57
30-40	470.37
40-50	56.49
50-60	14.46
60-70	15.30
70-80	15.84
80-90	12.23
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: —————

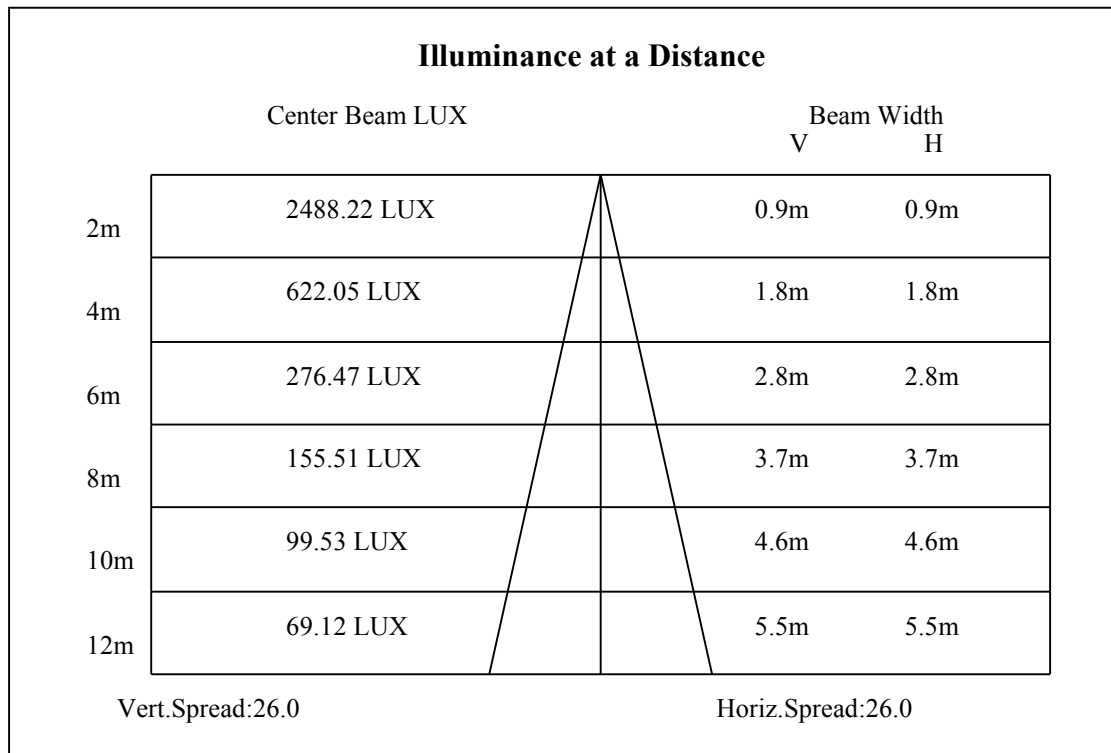
C90/C270: —————

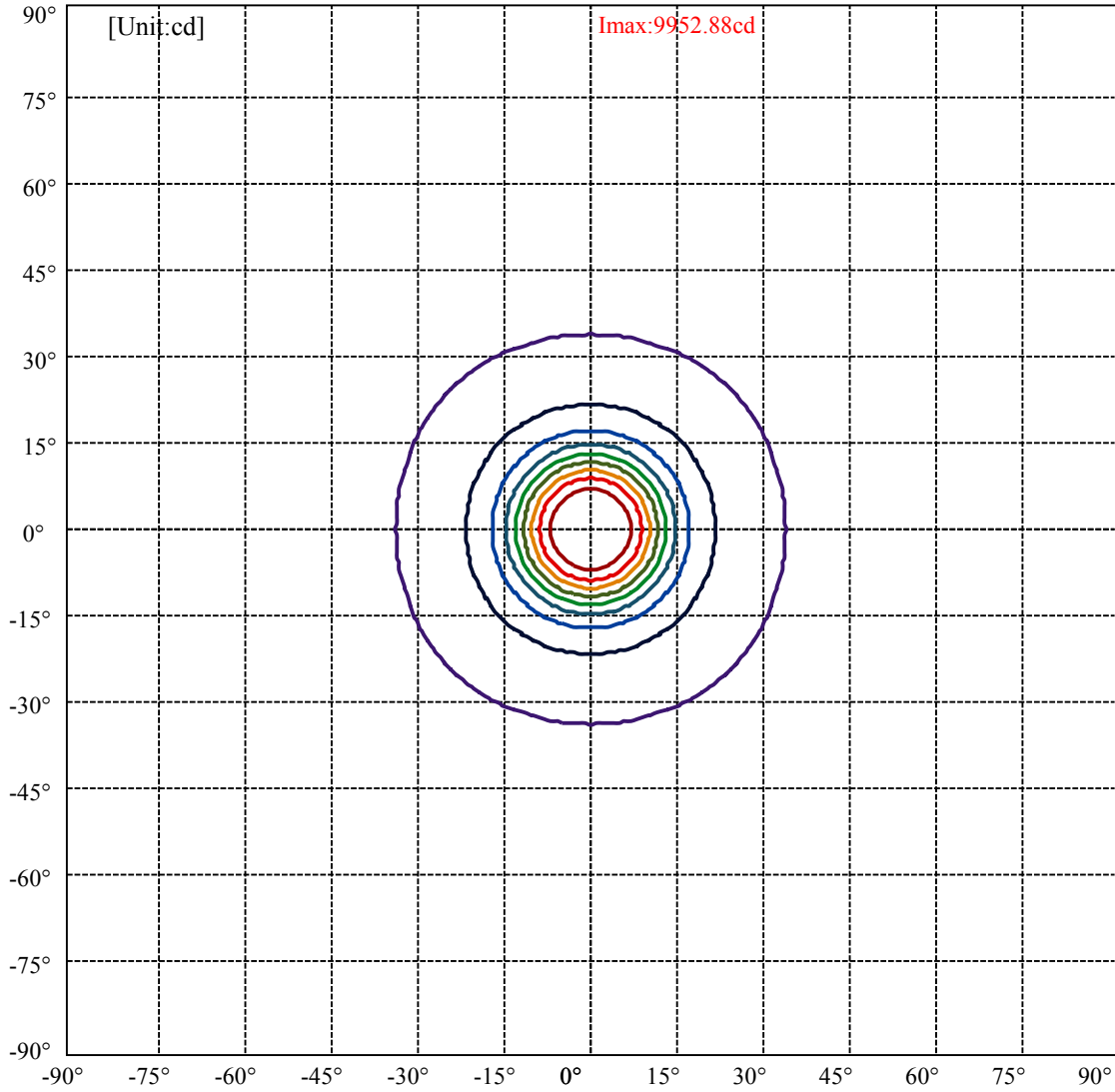
Field angle(10%Imax):C0/180Left:33.4 Right:33.4

:C90/270Left:33.4 Right:33.4

Beam Angle(50%Imax):C0/180Left:12.9 Right:12.9

:C90/270Left:12.9 Right:12.9



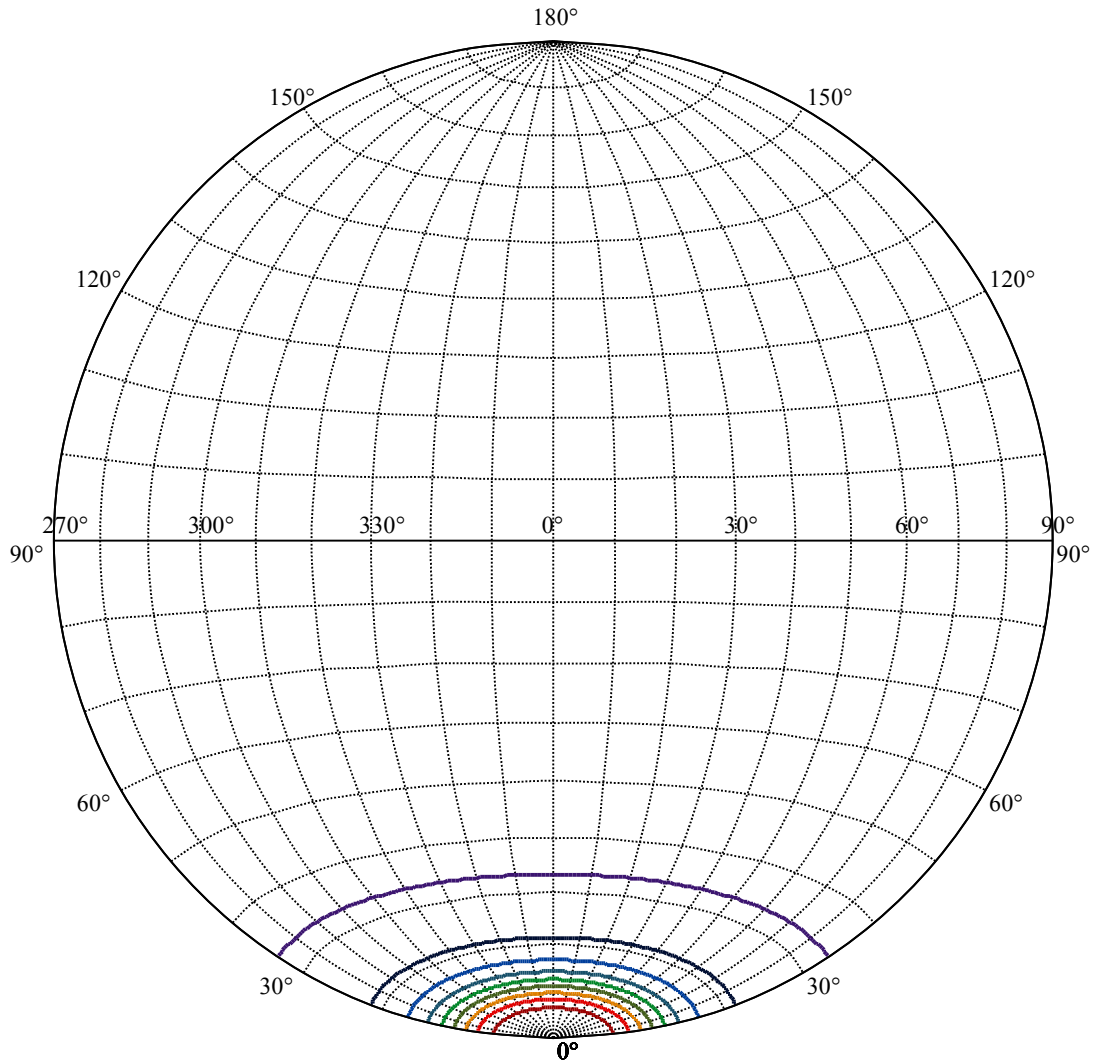


(10%Imax) 995.287	—
(20%Imax) 1990.57	—
(30%Imax) 2985.86	—
(40%Imax) 3981.15	—
(50%Imax) 4976.44	—
(60%Imax) 5971.73	—
(70%Imax) 6967.01	—
(80%Imax) 7962.3	—
(90%Imax) 8957.59	—

Equipment:
Temperature(°C): 25.0

Date: 2018/10/10
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50



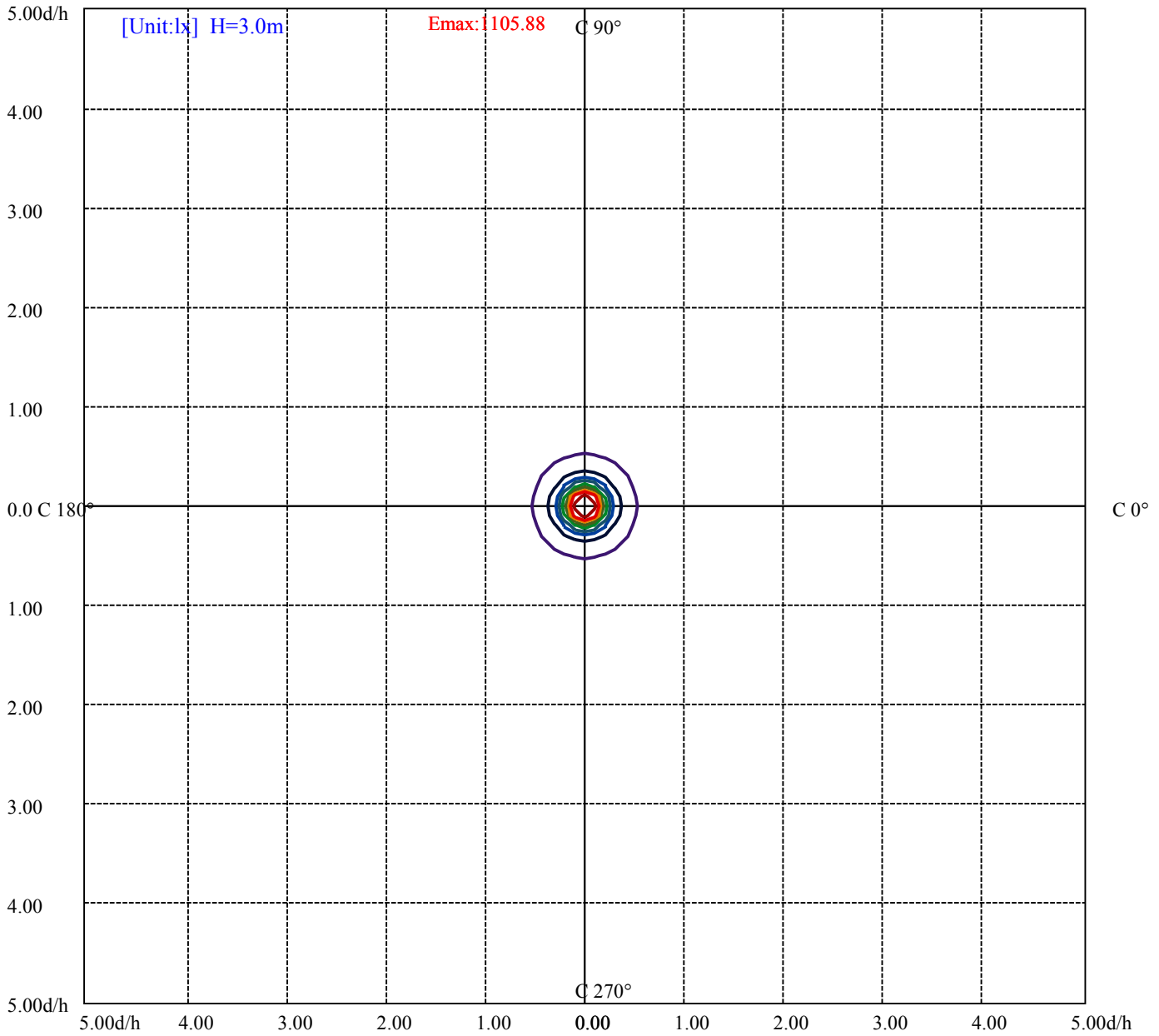
House

[Unit:cd]

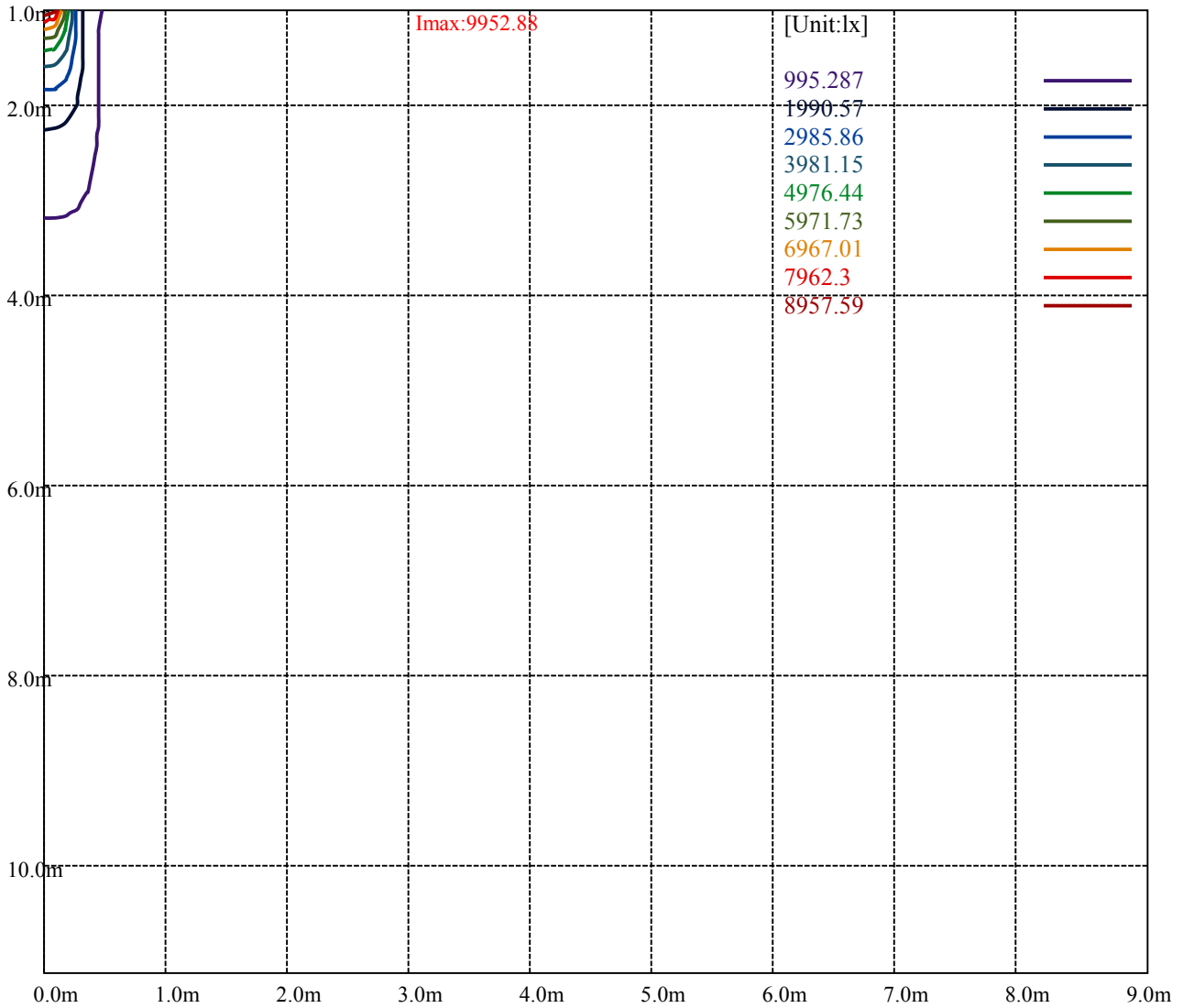
Road

Imax:9952.88

(10%Imax) 995.287	—
(20%Imax) 1990.57	—
(30%Imax) 2985.86	—
(40%Imax) 3981.15	—
(50%Imax) 4976.44	—
(60%Imax) 5971.73	—
(70%Imax) 6967.01	—
(80%Imax) 7962.3	—
(90%Imax) 8957.59	—



- (10%Emax) 110.5874
- (20%Emax) 221.1744
- (30%Emax) 331.7622
- (40%Emax) 442.35
- (50%Emax) 552.9377
- (60%Emax) 663.5245
- (70%Emax) 774.1122
- (80%Emax) 884.7
- (90%Emax) 995.2878



Luminance Table

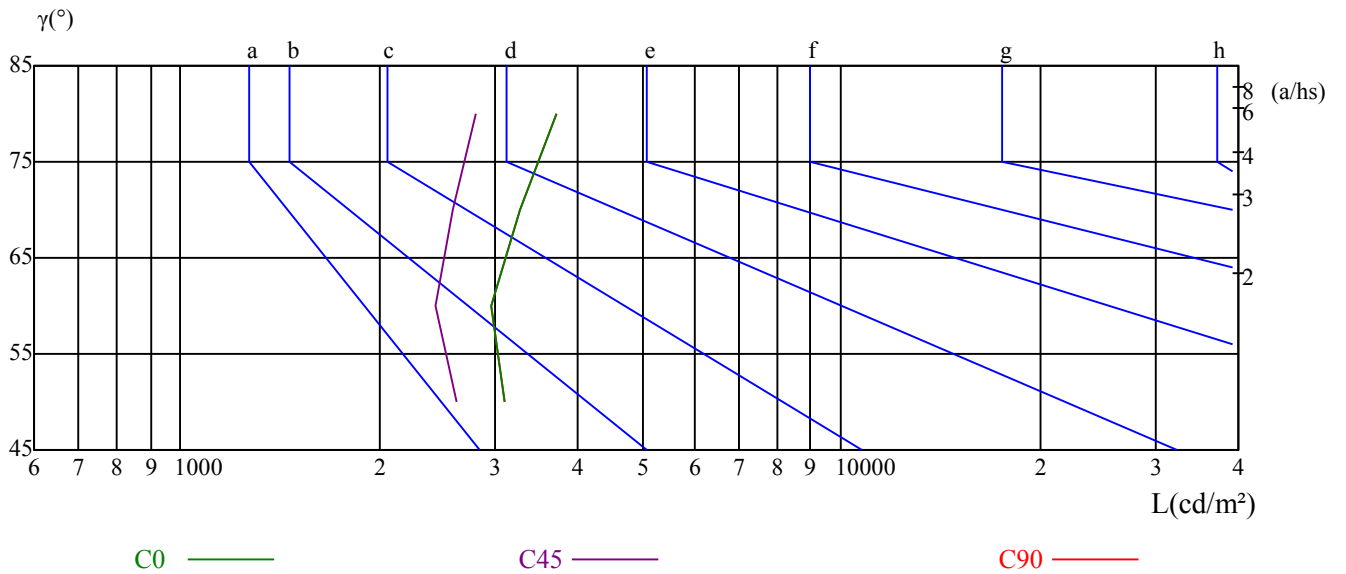
γ	45	50	55	60	65	70	75	80	85
C0	0	3089	0	2945	0	3262	0	3704	0
C45	0	2627	0	2425	0	2587	0	2801	0
C90	0	3089	0	2945	0	3262	0	3704	0

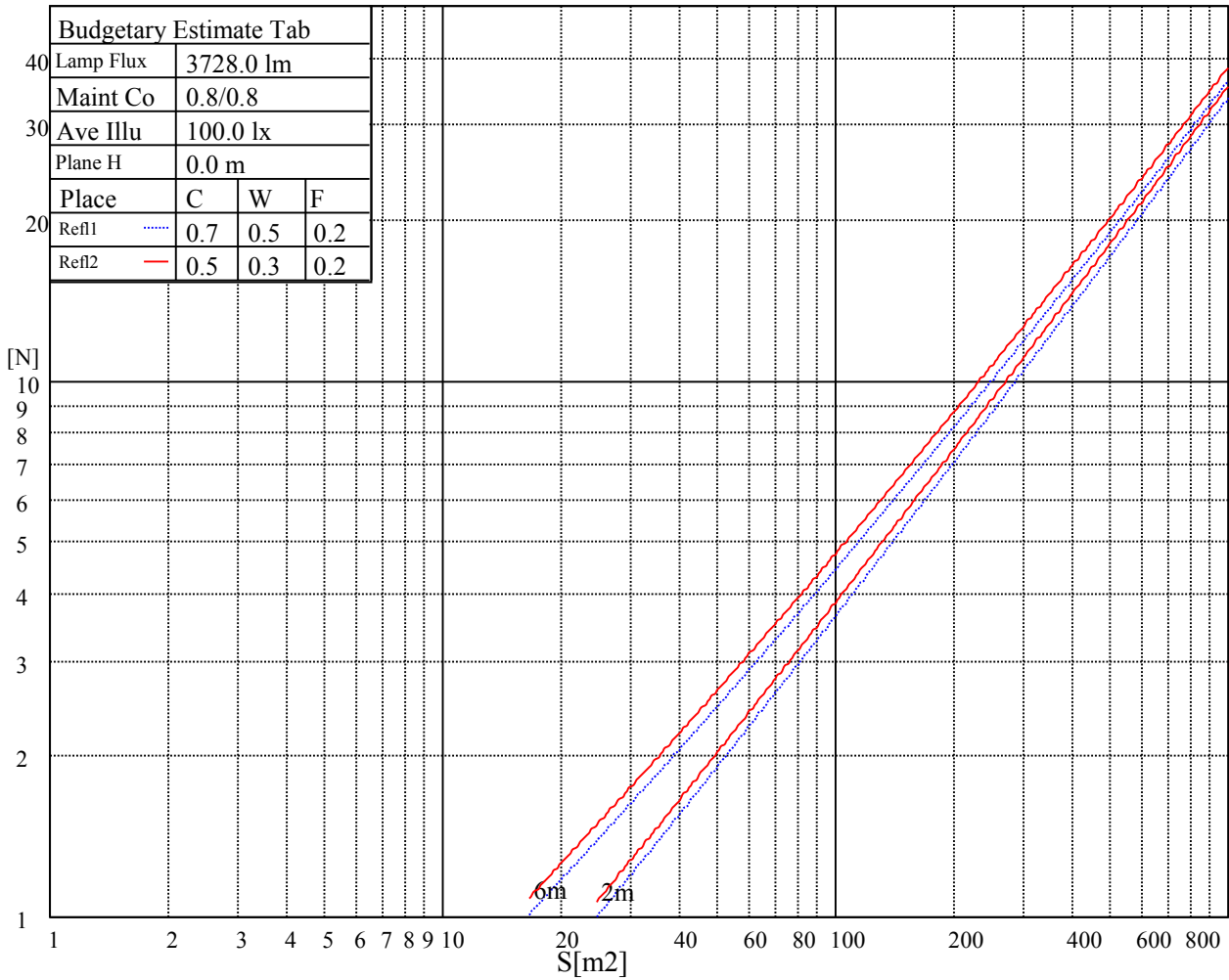
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
7056	7056	7056	11759	11759	11759	32872	32872	32872

Glare Table

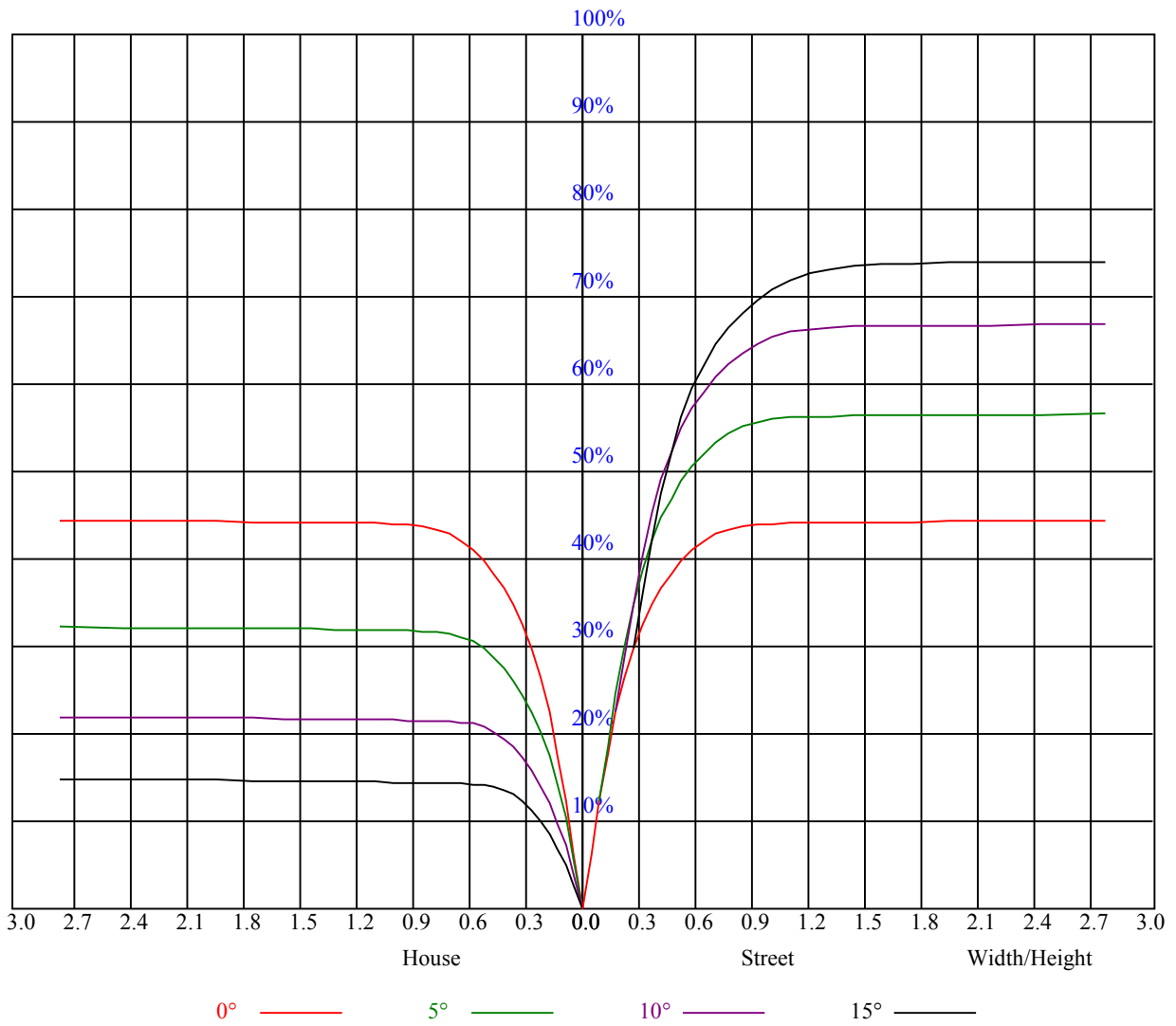
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.07	1.07	1.07	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.90
1	1.00	0.98	0.96	0.98	0.96	0.94	0.94	0.93	0.91	0.91	0.90	0.89	0.88	0.87	0.86	0.84
2	0.94	0.91	0.88	0.92	0.90	0.87	0.90	0.87	0.85	0.87	0.85	0.83	0.85	0.83	0.82	0.80
3	0.89	0.85	0.82	0.88	0.84	0.81	0.86	0.83	0.80	0.83	0.81	0.79	0.81	0.79	0.78	0.76
4	0.85	0.80	0.77	0.84	0.80	0.77	0.82	0.78	0.76	0.80	0.77	0.75	0.78	0.76	0.74	0.73
5	0.81	0.76	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.70
6	0.77	0.73	0.69	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
7	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
8	0.71	0.66	0.63	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.62
9	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.66	0.63	0.60	0.59
10	0.66	0.61	0.59	0.65	0.61	0.59	0.65	0.61	0.58	0.64	0.61	0.58	0.64	0.60	0.58	0.57



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	9946.69	9960.75	9938.25	9768.38	9199.69	8012.25	6612.75	4995.00	3727.69
45.0	9959.63	9969.75	9948.38	9759.38	9177.75	7929.56	6378.75	4842.00	3621.38
90.0	9957.94	9940.50	9790.31	9321.19	8290.13	6746.06	5293.13	3953.81	3084.75
135.0	9947.25	9921.38	9768.94	9177.75	8078.63	6626.81	5095.13	3841.31	3065.63
180.0	9946.69	9888.19	9630.56	8892.56	7665.19	6054.19	4656.38	3616.31	2885.63
225.0	9959.63	9893.25	9636.19	8990.44	7781.06	6224.06	4853.81	3697.88	2903.63
270.0	9957.94	9941.06	9832.50	9456.75	8698.50	7378.31	5868.56	4474.13	3450.94
315.0	9947.25	9943.88	9883.13	9569.25	8835.75	7589.81	6079.50	4587.19	3589.31
360.0	9946.69	9960.75	9938.25	9768.38	9199.69	8012.25	6612.75	4995.00	3727.69
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	2975.63	2406.38	2059.31	1809.56	1619.44	1475.44	1375.31	1221.75	1042.31
45.0	2838.94	2336.63	1998.56	1769.63	1607.63	1454.06	1344.38	1183.50	998.44
90.0	2493.56	2100.94	1815.19	1628.44	1492.88	1380.94	1260.56	1079.27	902.36
135.0	2474.44	2110.50	1817.44	1622.25	1487.25	1382.06	1247.63	1080.00	898.31
180.0	2367.56	2032.31	1761.75	1577.25	1452.38	1344.38	1115.94	1014.36	837.11
225.0	2437.88	2075.63	1791.56	1632.94	1485.56	1370.25	1224.00	1039.56	867.66
270.0	2723.06	2273.06	1949.06	1716.19	1569.38	1441.69	1330.88	1184.63	1011.38
315.0	2802.94	2293.31	1995.19	1752.75	1564.31	1434.38	1328.63	1120.84	1005.41
360.0	2975.63	2406.38	2059.31	1809.56	1619.44	1475.44	1375.31	1221.75	1042.31
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	867.94	665.44	476.44	301.50	150.13	51.13	24.75	17.83	17.10
45.0	813.94	624.38	437.06	289.13	123.98	38.48	22.89	17.55	16.88
90.0	695.25	505.74	320.40	164.53	57.99	25.48	17.83	17.04	16.37
135.0	695.25	530.44	322.31	164.19	59.18	24.41	17.66	16.93	16.43
180.0	654.58	472.84	285.86	150.86	47.53	22.89	18.06	17.33	16.43
225.0	664.99	475.20	294.64	148.39	44.78	22.95	18.00	16.88	16.37
270.0	803.81	615.38	410.06	302.63	99.39	29.81	19.91	17.89	17.16
315.0	805.33	601.31	421.20	241.31	103.50	33.81	20.70	17.78	17.27
360.0	867.94	665.44	476.44	301.50	150.13	51.13	24.75	17.83	17.10
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	16.48	16.03	15.69	15.41	15.19	15.08	15.08	15.02	14.91
45.0	16.20	15.75	15.47	15.19	15.02	14.91	14.79	14.74	14.74
90.0	15.92	15.58	15.30	15.19	15.13	15.02	14.96	14.91	14.79
135.0	15.98	15.69	15.41	15.41	15.41	15.41	15.36	15.30	15.19
180.0	16.03	15.69	15.41	15.41	15.47	15.53	15.53	15.53	15.47
225.0	15.98	15.64	15.47	15.36	15.41	15.36	15.36	15.41	15.47
270.0	16.59	16.14	15.81	15.69	15.64	15.69	15.75	15.75	15.64
315.0	16.43	16.03	15.69	15.47	15.64	15.64	15.53	15.53	15.41
360.0	16.48	16.03	15.69	15.41	15.19	15.08	15.08	15.02	14.91
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	14.79	14.79	14.74	14.68	14.57	14.46	14.29	14.12	13.39
45.0	14.68	14.63	14.51	14.46	14.34	14.18	14.01	13.56	13.33
90.0	14.68	14.57	14.46	14.40	14.29	14.18	14.06	13.56	13.33
135.0	15.08	14.96	14.79	14.68	14.46	14.29	14.12	13.89	13.33
180.0	15.41	15.30	15.24	15.13	14.85	14.63	14.29	14.01	13.39
225.0	15.47	15.41	15.24	15.02	14.79	14.57	14.29	14.01	13.33
270.0	15.53	15.36	15.24	15.13	14.96	14.79	14.63	14.29	13.33
315.0	15.36	15.24	15.13	15.02	14.85	14.68	14.51	14.23	13.33
360.0	14.79	14.79	14.74	14.68	14.57	14.46	14.29	14.12	13.39

Intensity data(cd)

C/ γ (°)	90.0
0.0	13.39
45.0	13.33
90.0	13.28
135.0	13.33
180.0	13.39
225.0	13.28
270.0	13.28
315.0	13.33
360.0	13.39