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NATA

LumCAT: 3-2054-A
Luminaire: 99.02.73.173+92.76.365.00

Report No: NATA0100	Voltage(V): 49.3000
Test No: GC2018101007	Current(A): 0.5000
LampCAT: BRIDGELUX V22B	Power (W): 24.6500
Lamp flux(lm): 3728.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 78	Width(mm): 78
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 3305.94
Efficiency(%): 88.68%
Lumens(lm)/Power(W): 134.58
Central intensity(cd): 12488.910
Maximum intensity(cd): 12488.910
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=22.9
[C90/270]Total=22.9
Field angle(10%Imax): [C0/180]Total=59.7
[C90/270]Total=59.7
Maximum s/h(1/2): C0_180=0.39 C90_270=0.39
Maximum s/h(1/4): C0_180=0.39 C90_270=0.39
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 88.99%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.326%

Equipment:	Date: 2018/10/10	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.50

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	12488.906	11.951	11.951	.321%	.362%
2.0	12385.547	94.798	106.749	2.543%	3.229%
4.0	11951.930	182.847	289.596	4.905%	8.760%
6.0	11023.313	252.704	542.3	6.779%	16.404%
8.0	9565.734	291.970	834.271	7.832%	25.236%
10.0	7618.430	290.136	1124.406	7.783%	34.012%
12.0	5736.094	261.553	1385.96	7.016%	41.923%
14.0	4153.711	220.382	1606.342	5.912%	48.590%
16.0	3144.516	190.089	1796.431	5.099%	54.339%
18.0	2508.328	169.993	1966.424	4.560%	59.482%
20.0	2112.328	158.445	2124.869	4.250%	64.274%
22.0	1830.656	150.400	2275.269	4.034%	68.824%
24.0	1630.336	145.431	2420.699	3.901%	73.223%
26.0	1496.180	143.844	2564.543	3.858%	77.574%
28.0	1383.750	142.473	2707.016	3.822%	81.883%
30.0	1236.030	135.539	2842.555	3.636%	85.983%
32.0	1041.933	121.092	2963.647	3.248%	89.646%
34.0	832.809	102.134	3065.781	2.740%	92.736%
36.0	605.391	78.040	3143.822	2.093%	95.096%
38.0	394.369	53.249	3197.07	1.428%	96.707%
40.0	211.486	29.814	3226.884	.800%	97.609%
42.0	69.848	10.250	3237.134	.275%	97.919%
44.0	22.845	3.480	3240.615	.093%	98.024%
46.0	16.460	2.597	3243.211	.070%	98.103%
48.0	15.863	2.585	3245.797	.069%	98.181%
50.0	15.448	2.595	3248.392	.070%	98.259%
52.0	15.173	2.622	3251.014	.070%	98.339%
54.0	14.977	2.657	3253.671	.071%	98.419%
56.0	14.808	2.692	3256.364	.072%	98.500%
58.0	14.646	2.724	3259.088	.073%	98.583%
60.0	14.520	2.758	3261.846	.074%	98.666%
62.0	14.484	2.805	3264.65	.075%	98.751%
64.0	14.597	2.877	3267.528	.077%	98.838%
66.0	14.709	2.947	3270.475	.079%	98.927%
68.0	14.780	3.005	3273.48	.081%	99.018%
70.0	14.822	3.055	3276.535	.082%	99.111%
72.0	14.843	3.096	3279.631	.083%	99.204%
74.0	14.815	3.123	3282.754	.084%	99.299%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	14.773	3.144	3285.897	.084%	99.394%
78.0	14.702	3.154	3289.051	.085%	99.489%
80.0	14.562	3.145	3292.196	.084%	99.584%
82.0	14.435	3.135	3295.331	.084%	99.679%
84.0	14.280	3.115	3298.446	.084%	99.773%
86.0	14.013	3.066	3301.512	.082%	99.866%
88.0	13.479	2.954	3304.466	.079%	99.955%
90.0	13.444	1.474	3305.94	.040%	100.000%

Zonal flux distribution table

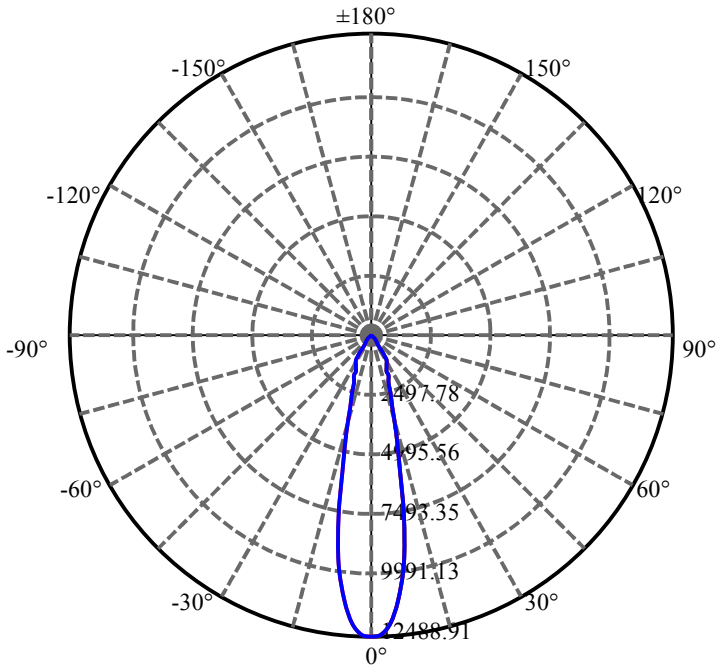
ZONAL LUMEN SUMMARY

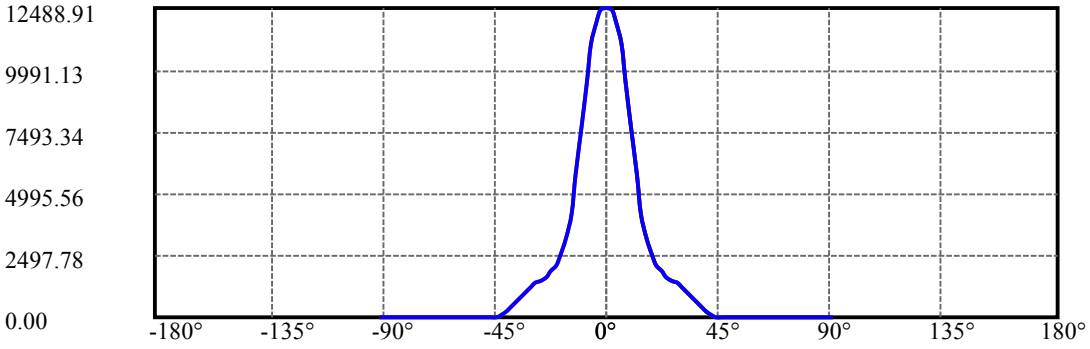
Zone	Lumens	%Lamp	%Fixt
0-30	2842.56	76.25%	85.98%
0-40	3226.88	86.56%	97.61%
0-60	3261.85	87.50%	98.67%
0-90	3304.47	88.64%	99.96%
0-120	3304.47	88.64%	99.96%
0-180	3305.94	88.68%	100.00%
60-90	45.38	1.22%	1.37%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.13	2644.75	70.94%	80.00%

ZONAL LUMEN SUMMARY

0-10	1124.41
10-20	1000.46
20-30	717.69
30-40	384.33
40-50	21.51
50-60	13.45
60-70	14.69
70-80	15.66
80-90	12.27
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

Light Distribution Curve [Unit:cd]





C0(Max):

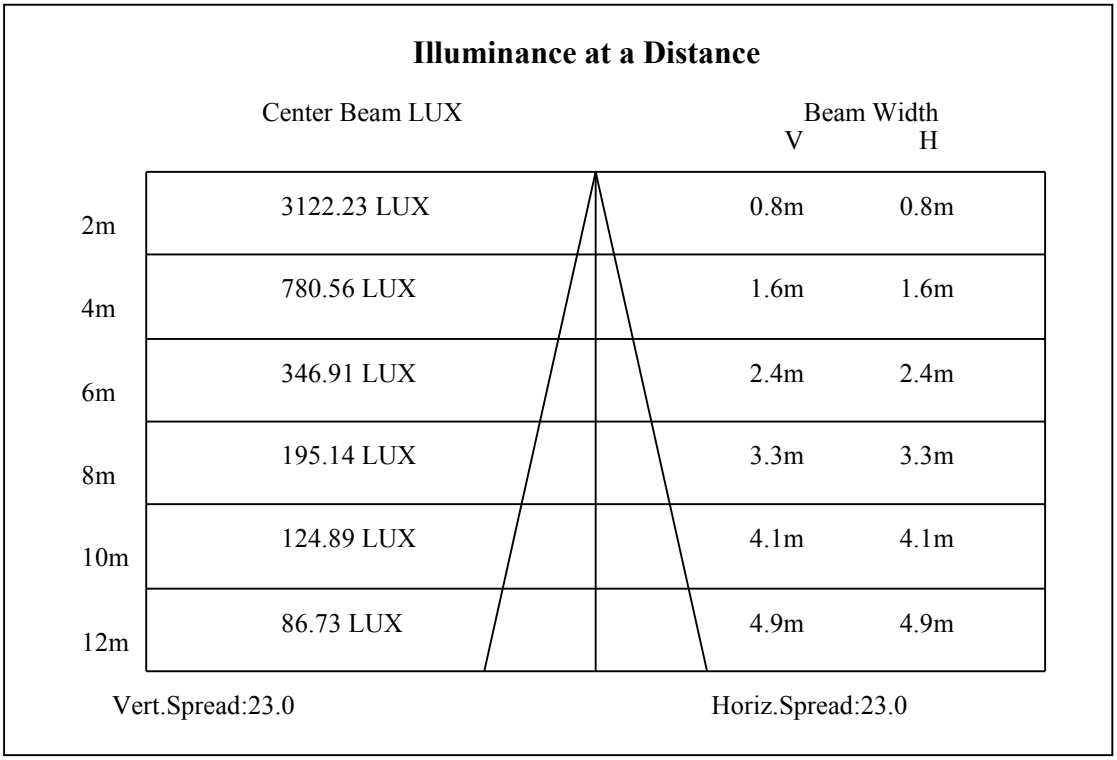
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:29.8 Right:29.8
:C90/270Left:29.8 Right:29.8

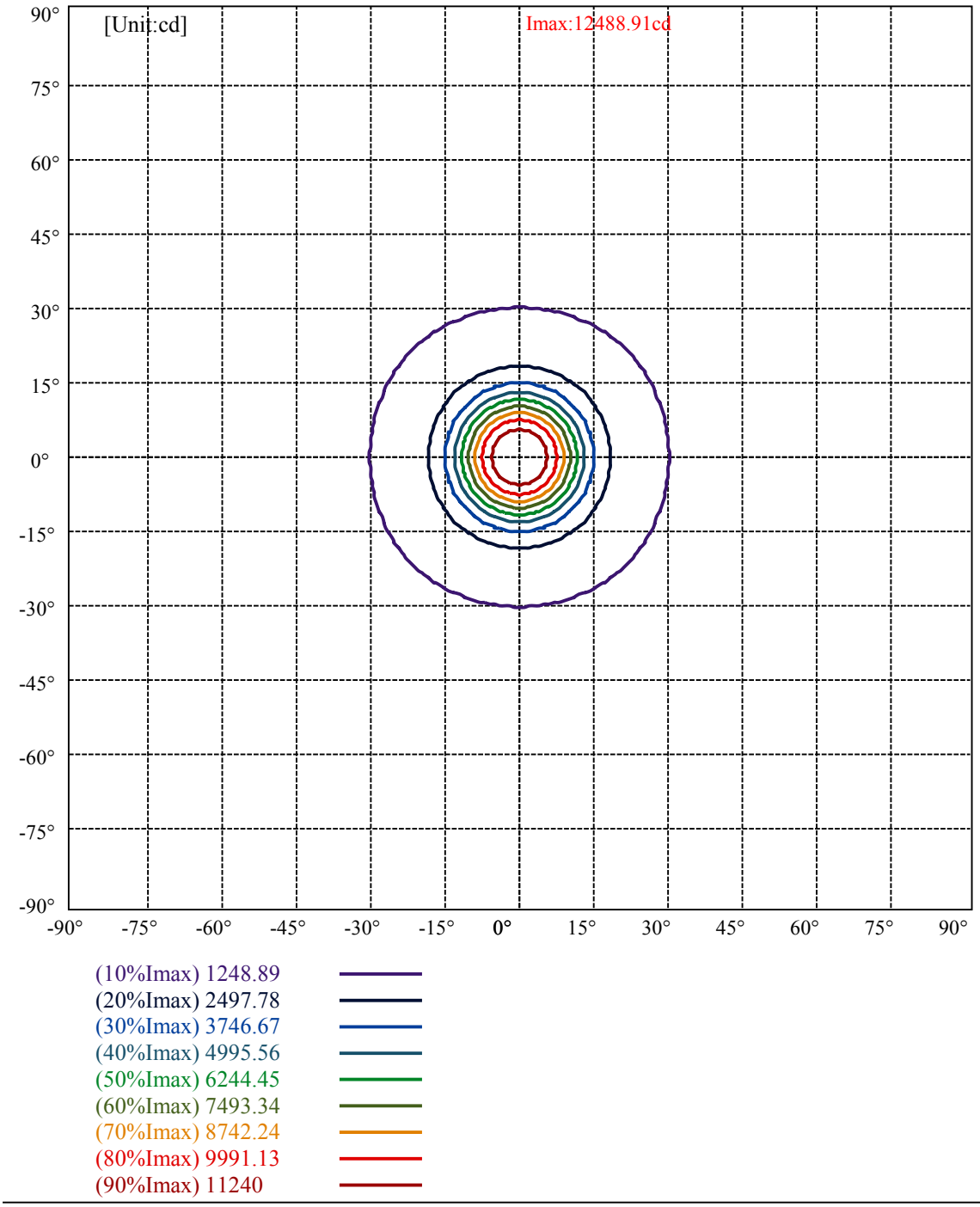
Beam Angle(50%Imax):C0/180Left:11.5 Right:11.5
:C90/270Left:11.5 Right:11.5

Lux distance Curve



Equipment:
Date: 2018/10/10
Operator: NT07
Temperature(°C): 25.0
Humidity(%): 60.0%
Distance(m): 7.50

ISO-Intensity(V-H)

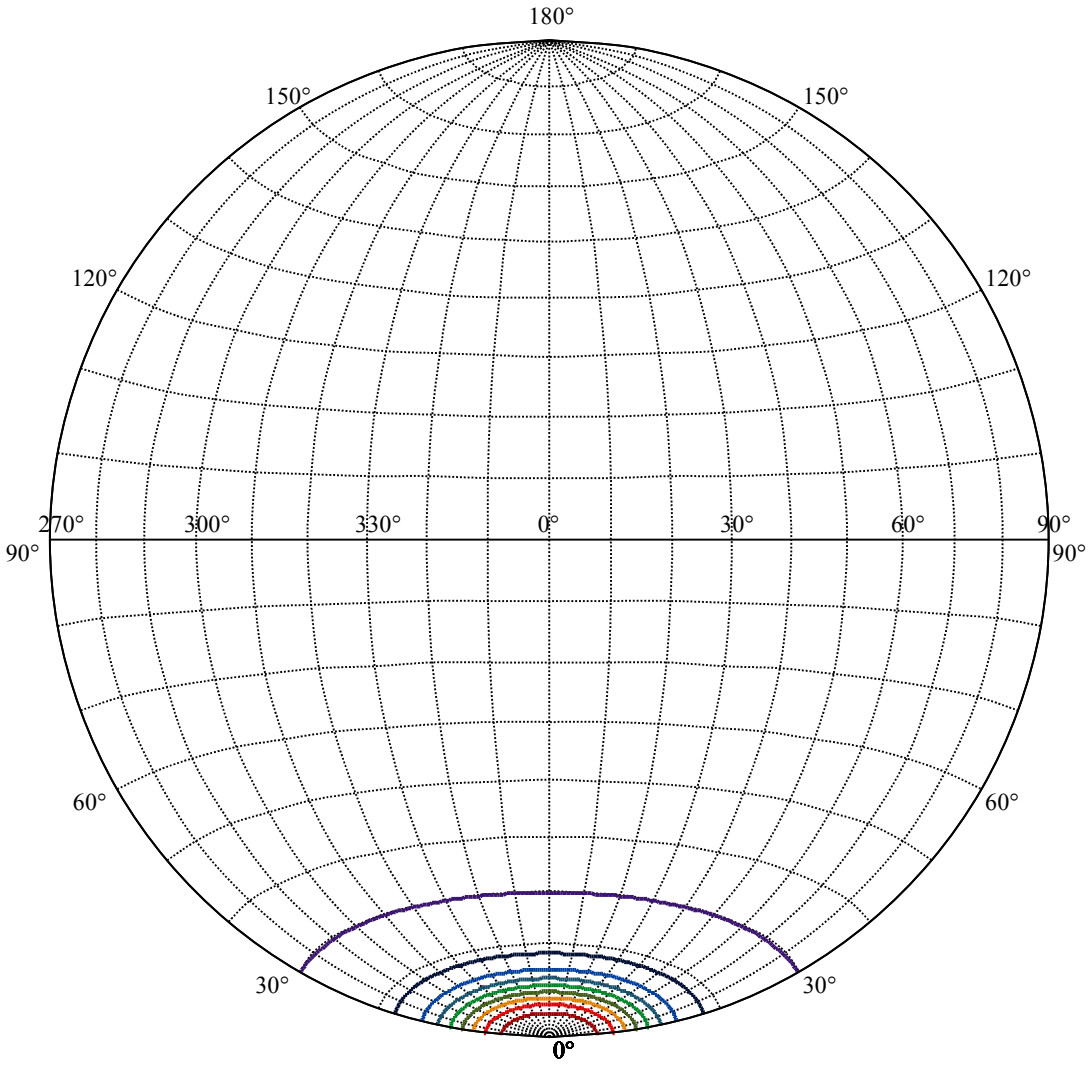


Equipment:
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:12488.91

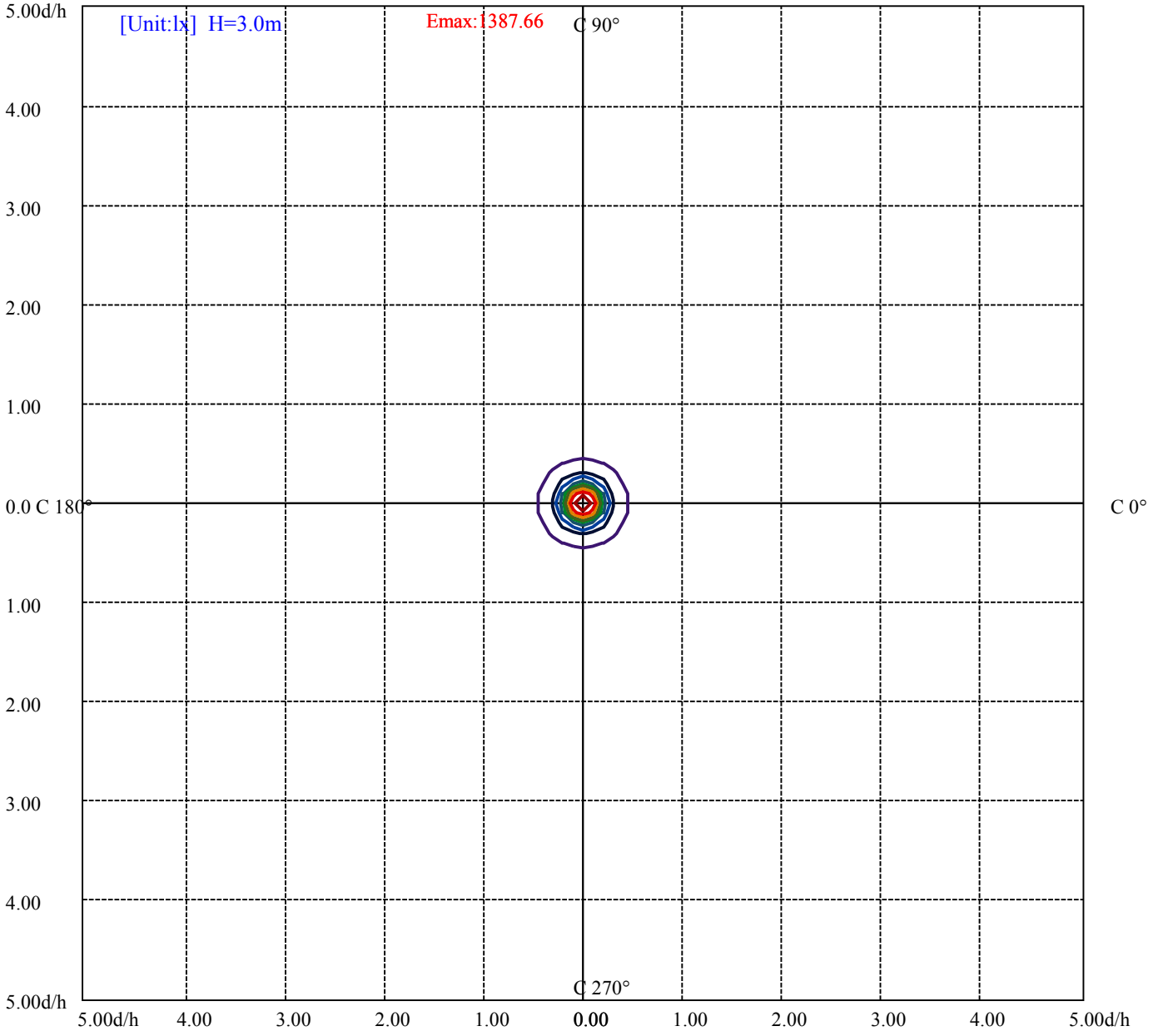
(10%Imax) 1248.89
(20%Imax) 2497.78
(30%Imax) 3746.67
(40%Imax) 4995.56
(50%Imax) 6244.45
(60%Imax) 7493.34
(70%Imax) 8742.24
(80%Imax) 9991.13
(90%Imax) 11240

Equipment:
Temperature(°C): 25.0

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

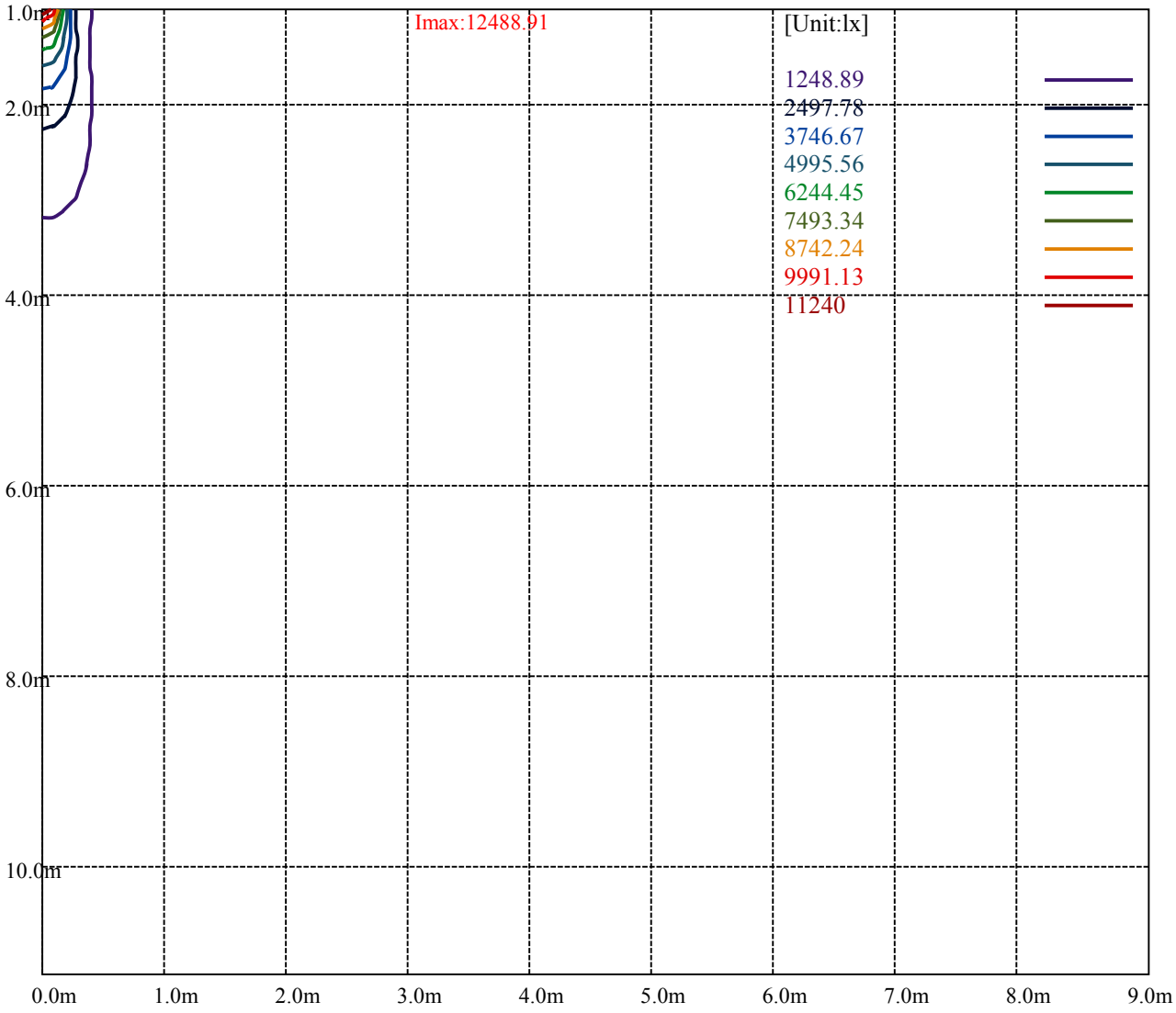
Operator: NT07
Distance(m): 7.50

ISO illuminance diagram



Equipment:
Temperature(°C): 25.0
Date: 2018/10/10
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment:
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

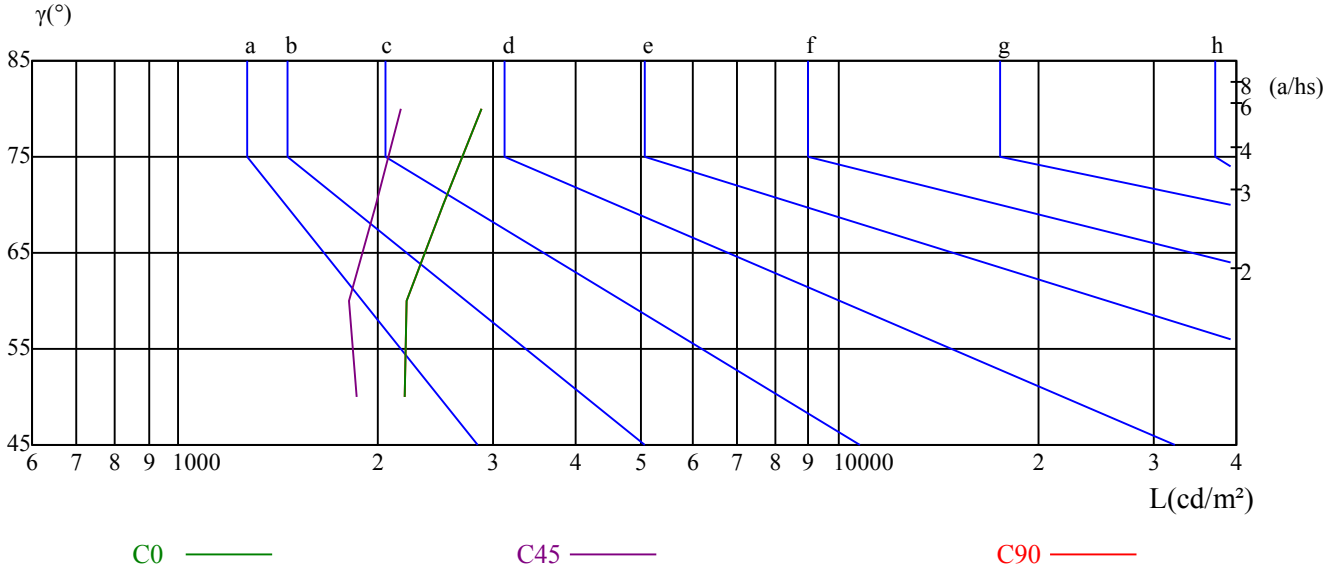
γ	45	50	55	60	65	70	75	80	85
C0	0	2201	0	2215	0	2515	0	2883	0
C45	0	1860	0	1813	0	1984	0	2172	0
C90	0	2201	0	2215	0	2515	0	2883	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5951	5951	5951	9792	9792	9792	27568	27568	27568

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 Limitting Curve

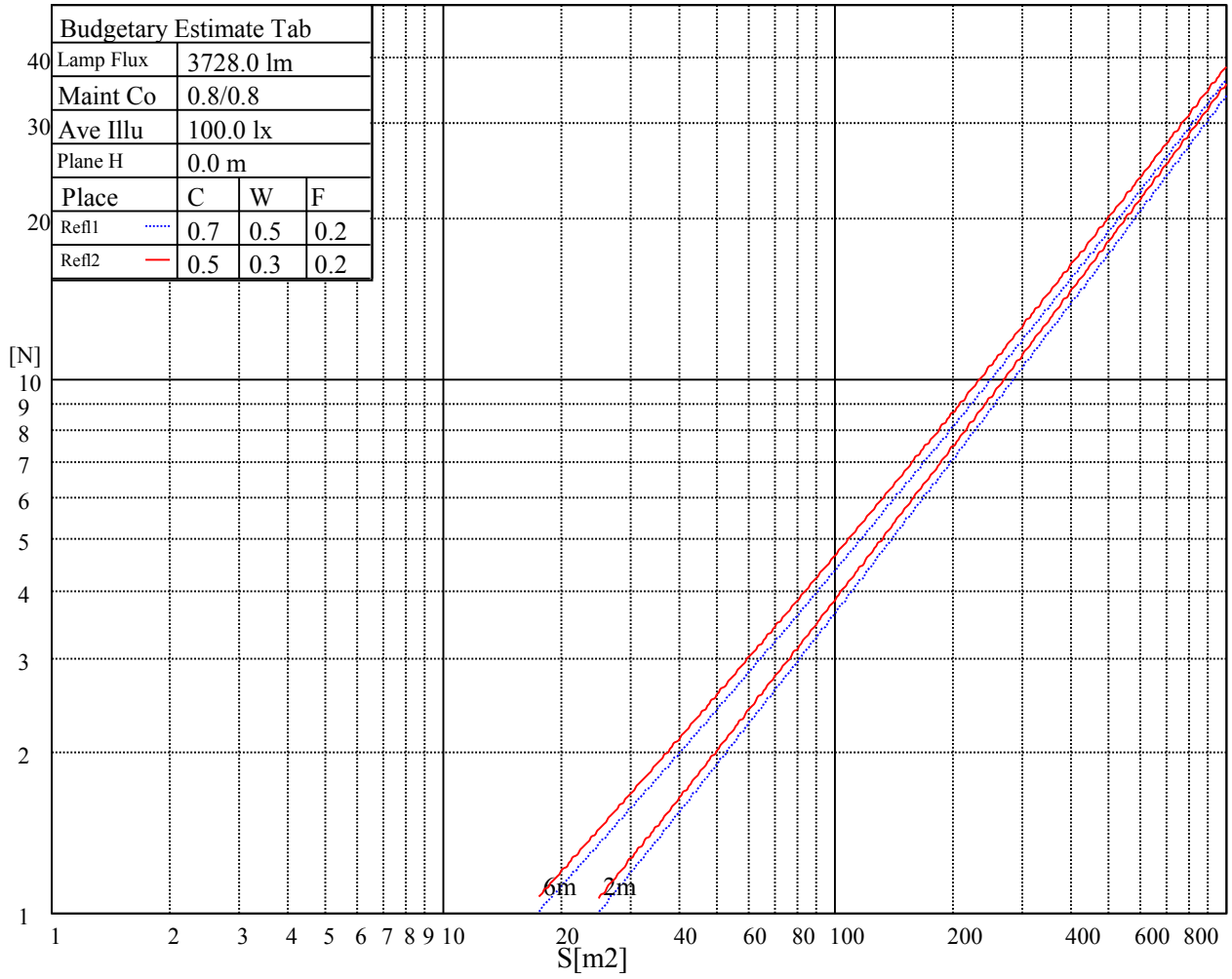


Equipment:
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.50

Budgetary Estimate Table

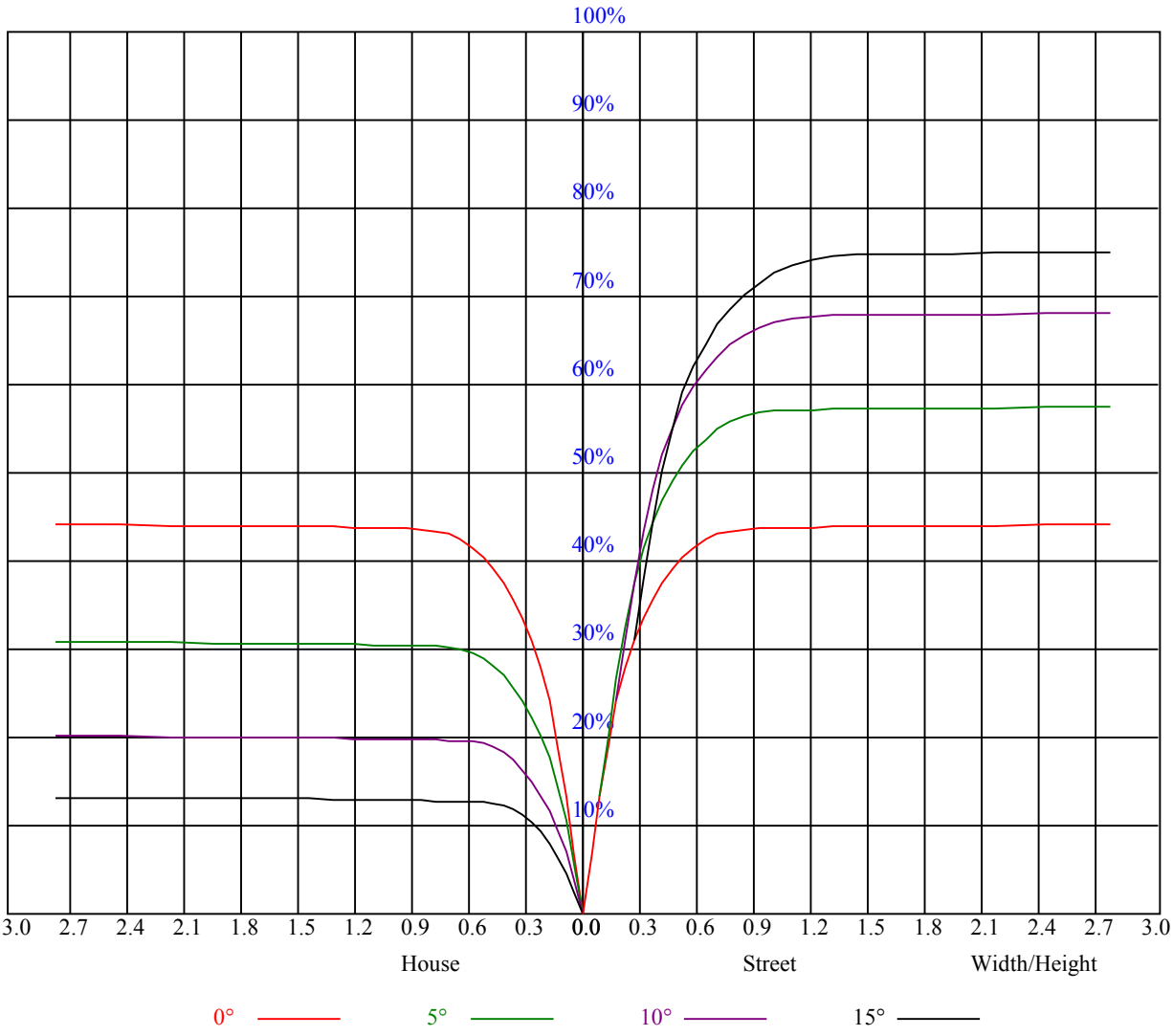


Equipment:	Date: 2018/10/10	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.50

Utilization factor table for indoor luminaire

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	COEFFCIENTS OF UTILIZATION RHOFC=20 CU															
0	1.06	1.06	1.06	1.03	1.03	1.03	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.99	0.97	0.95	0.97	0.96	0.94	0.94	0.92	0.91	0.90	0.89	0.88	0.87	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	0.84	0.85	0.83	0.82	0.80
3	0.89	0.86	0.83	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.81	0.79	0.82	0.80	0.78	0.77
4	0.85	0.81	0.78	0.84	0.81	0.78	0.82	0.79	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.74
5	0.82	0.77	0.74	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
6	0.78	0.74	0.71	0.78	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
7	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
8	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.70	0.67	0.65	0.64
9	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.62	0.62
10	0.68	0.64	0.61	0.67	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.66	0.63	0.61	0.60

Coefficient Utilization Curve



Equipment:
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.50

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	12487.50	12324.38	11840.63	10670.63	8988.75	7048.13	5225.63	3735.00	2885.63
45.0	12498.75	12403.13	12088.13	11176.88	9781.88	7785.00	5872.50	4275.00	3161.25
90.0	12493.13	12403.13	12076.88	11170.69	9759.38	7875.56	5985.00	4293.00	3263.63
135.0	12476.25	12476.25	12301.88	11711.25	10541.25	8831.25	6851.25	4961.25	3628.13
180.0	12487.50	12436.88	12189.38	11181.94	10157.06	8168.06	6214.50	4546.13	3395.25
225.0	12498.75	12397.50	11998.13	11059.88	9387.56	7431.19	5529.94	3948.75	3063.94
270.0	12493.13	12391.88	11958.75	10878.75	9365.63	7329.38	5473.13	3976.88	3020.63
315.0	12476.25	12251.25	11161.69	10336.50	8544.38	6478.88	4736.81	3493.69	2737.69
360.0	12487.50	12324.38	11840.63	10670.63	8988.75	7048.13	5225.63	3735.00	2885.63

C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	2366.44	2013.19	1774.13	1591.31	1467.00	1350.00	1182.38	974.25	767.25
45.0	2529.56	2151.00	1830.38	1634.06	1505.25	1392.75	1249.31	1053.56	834.19
90.0	2547.00	2122.88	1837.69	1630.13	1497.94	1398.94	1265.63	1066.84	867.83
135.0	2857.50	2290.50	1972.13	1720.69	1554.19	1437.75	1332.00	1152.56	953.44
180.0	2655.00	2236.50	1912.50	1684.69	1531.69	1408.50	1281.94	1093.61	891.23
225.0	2455.88	2089.69	1824.75	1625.63	1486.69	1386.56	1233.56	1024.76	824.96
270.0	2414.81	2055.94	1792.69	1606.50	1488.38	1375.88	1230.19	1036.69	814.50
315.0	2240.44	1938.94	1701.00	1549.69	1438.31	1319.63	1113.24	933.19	709.09
360.0	2366.44	2013.19	1774.13	1591.31	1467.00	1350.00	1182.38	974.25	767.25

C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	552.94	328.50	156.94	39.83	19.74	16.82	16.31	15.69	15.41
45.0	614.81	405.00	285.19	65.53	21.94	16.48	15.75	15.36	15.19
90.0	634.39	417.54	214.71	75.66	21.83	16.37	15.92	15.58	15.36
135.0	734.06	501.19	304.31	125.44	31.67	16.99	16.03	15.81	15.24
180.0	668.08	470.93	259.59	107.27	26.78	16.14	15.53	15.19	14.96
225.0	590.40	379.74	192.77	67.05	22.56	16.37	15.75	15.13	14.91
270.0	577.13	372.94	167.85	49.84	21.32	16.43	15.92	15.36	15.13
315.0	471.32	279.11	110.53	28.18	16.93	16.09	15.69	15.47	15.19
360.0	552.94	328.50	156.94	39.83	19.74	16.82	16.31	15.69	15.41

C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	15.19	14.96	14.74	14.57	14.46	14.57	14.79	15.02	15.08
45.0	15.02	14.85	14.79	14.74	14.68	14.85	14.96	14.96	15.08
90.0	15.19	14.96	14.79	14.57	14.68	14.79	14.96	15.02	15.02
135.0	15.02	14.85	14.74	14.63	14.57	14.74	14.85	14.85	14.85
180.0	14.79	14.63	14.46	14.34	14.29	14.23	14.23	14.29	14.29
225.0	14.68	14.57	14.40	14.34	14.29	14.23	14.23	14.29	14.34
270.0	14.91	14.74	14.57	14.46	14.40	14.51	14.63	14.74	14.85
315.0	15.02	14.91	14.68	14.51	14.51	14.85	15.02	15.08	15.08
360.0	15.19	14.96	14.74	14.57	14.46	14.57	14.79	15.02	15.08

C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	15.13	15.13	15.13	15.02	14.79	14.57	14.34	14.06	13.39
45.0	15.13	15.19	15.13	15.08	14.91	14.68	14.51	14.23	13.56
90.0	15.02	14.96	14.91	14.85	14.74	14.68	14.51	14.29	13.50
135.0	14.85	14.85	14.85	14.74	14.57	14.51	14.40	14.23	13.56
180.0	14.29	14.29	14.29	14.29	14.23	14.12	14.06	13.89	13.39
225.0	14.46	14.46	14.46	14.40	14.29	14.18	14.01	13.67	13.50
270.0	14.85	14.74	14.63	14.57	14.46	14.34	14.23	13.73	13.50
315.0	15.02	14.91	14.79	14.68	14.51	14.40	14.18	14.01	13.44
360.0	15.13	15.13	15.13	15.02	14.79	14.57	14.34	14.06	13.39

Intensity data(cd)

C/γ(°)	90.0
0.0	13.39
45.0	13.50
90.0	13.44
135.0	13.44
180.0	13.39
225.0	13.44
270.0	13.50
315.0	13.44
360.0	13.39