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Nata

LumCAT: 61.0138.000
Luminaire:

Report No: 210714-B004	Voltage(V): 37.4500
Test No: 210714-C004	Current(A): 0.1320
LampCAT: LUMINUS CXM-3	Power (W): 4.9430
Lamp flux(lm): 414.7	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 570	Width(mm): 45
Phm Type: C	Height(mm): 20

Photometric Results

Lumens(lm): 263.10
Efficiency(%): 63.45%
Lumens(lm)/Power(W): 53.23
Central intensity(cd): 758.841
Maximum intensity(cd): 758.841
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=25.6
[C90/270]Total=25.6
Field angle(10%Imax): [C0/180]Total=55.3
[C90/270]Total=55.3
Maximum s/h(1/2): C0_180=0.43 C90_270=0.43
Maximum s/h(1/4): C0_180=0.45 C90_270=0.45
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 63.45%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 92.662%

Equipment: GMS1980	Date: 2021/7/14	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	758.841	0.000	0	.000%	.000%
1.0	755.655	0.725	0.725	.175%	.275%
2.0	745.355	2.154	2.879	.520%	1.094%
3.0	730.118	3.529	6.408	.851%	2.436%
4.0	708.321	4.815	11.223	1.161%	4.266%
5.0	681.469	5.979	17.202	1.442%	6.538%
6.0	648.042	6.987	24.189	1.685%	9.194%
7.0	612.577	7.825	32.013	1.887%	12.168%
8.0	576.570	8.510	40.524	2.052%	15.402%
9.0	533.897	9.000	49.523	2.170%	18.823%
10.0	491.681	9.281	58.805	2.238%	22.351%
11.0	452.665	9.436	68.24	2.275%	25.937%
12.0	412.629	9.459	77.699	2.281%	29.532%
13.0	371.257	9.303	87.002	2.243%	33.068%
14.0	335.046	9.041	96.043	2.180%	36.504%
15.0	300.705	8.728	104.771	2.105%	39.822%
16.0	269.325	8.353	113.123	2.014%	42.996%
17.0	239.808	7.929	121.052	1.912%	46.010%
18.0	212.590	7.459	128.511	1.799%	48.845%
19.0	190.434	7.012	135.523	1.691%	51.510%
20.0	169.727	6.592	142.115	1.590%	54.015%
21.0	150.666	6.152	148.267	1.484%	56.354%
22.0	135.345	5.747	154.014	1.386%	58.538%
23.0	121.767	5.395	159.409	1.301%	60.589%
24.0	109.083	5.047	164.456	1.217%	62.507%
25.0	98.191	4.713	169.169	1.137%	64.298%
26.0	89.205	4.424	173.593	1.067%	65.980%
27.0	80.873	4.161	177.754	1.003%	67.561%
28.0	73.174	3.900	181.654	.941%	69.044%
29.0	66.741	3.661	185.315	.883%	70.435%
30.0	61.186	3.454	188.769	.833%	71.748%
31.0	55.849	3.257	192.025	.785%	72.986%
32.0	51.427	3.073	195.099	.741%	74.154%
33.0	47.524	2.915	198.014	.703%	75.262%
34.0	43.889	2.766	200.78	.667%	76.313%
35.0	40.676	2.626	203.407	.633%	77.311%
36.0	37.779	2.498	205.905	.602%	78.261%
37.0	35.198	2.380	208.285	.574%	79.166%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	32.934	2.274	210.559	.548%	80.030%
39.0	30.642	2.170	212.729	.523%	80.855%
40.0	28.744	2.071	214.8	.499%	81.642%
41.0	27.127	1.990	216.79	.480%	82.398%
42.0	25.474	1.911	218.701	.461%	83.125%
43.0	23.991	1.832	220.533	.442%	83.821%
44.0	22.795	1.766	222.299	.426%	84.492%
45.0	21.607	1.706	224.005	.412%	85.141%
46.0	20.419	1.644	225.649	.396%	85.765%
47.0	19.448	1.586	227.234	.382%	86.368%
48.0	18.563	1.537	228.771	.371%	86.952%
49.0	17.641	1.487	230.258	.359%	87.517%
50.0	16.798	1.436	231.694	.346%	88.063%
51.0	16.073	1.391	233.084	.335%	88.592%
52.0	15.321	1.347	234.432	.325%	89.104%
53.0	14.667	1.304	235.736	.315%	89.599%
54.0	14.020	1.264	237.001	.305%	90.080%
55.0	13.416	1.225	238.225	.295%	90.545%
56.0	12.881	1.188	239.413	.287%	90.997%
57.0	12.319	1.152	240.566	.278%	91.435%
58.0	11.742	1.113	241.678	.268%	91.858%
59.0	11.264	1.076	242.754	.259%	92.267%
60.0	10.772	1.041	243.795	.251%	92.662%
61.0	10.245	1.003	244.798	.242%	93.044%
62.0	9.795	0.966	245.764	.233%	93.411%
63.0	9.387	0.933	246.696	.225%	93.765%
64.0	8.965	0.901	247.597	.217%	94.107%
65.0	8.571	0.868	248.465	.209%	94.437%
66.0	8.213	0.837	249.302	.202%	94.756%
67.0	7.868	0.809	250.111	.195%	95.063%
68.0	7.530	0.780	250.891	.188%	95.359%
69.0	7.235	0.753	251.644	.182%	95.646%
70.0	6.912	0.727	252.371	.175%	95.922%
71.0	6.630	0.700	253.071	.169%	96.188%
72.0	6.356	0.675	253.746	.163%	96.445%
73.0	6.089	0.651	254.397	.157%	96.692%
74.0	5.843	0.627	255.024	.151%	96.930%
75.0	5.618	0.606	255.629	.146%	97.161%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	5.667	0.599	256.228	.144%	97.388%
77.0	5.948	0.619	256.848	.149%	97.624%
78.0	6.019	0.641	257.488	.154%	97.867%
79.0	5.597	0.624	258.112	.151%	98.104%
80.0	5.203	0.582	258.695	.140%	98.326%
81.0	5.126	0.559	259.253	.135%	98.538%
82.0	5.379	0.570	259.823	.137%	98.754%
83.0	5.295	0.580	260.403	.140%	98.975%
84.0	4.978	0.560	260.963	.135%	99.188%
85.0	4.388	0.511	261.474	.123%	99.382%
86.0	3.234	0.417	261.891	.100%	99.540%
87.0	2.834	0.332	262.223	.080%	99.666%
88.0	2.700	0.303	262.526	.073%	99.782%
89.0	2.602	0.291	262.816	.070%	99.892%
90.0	2.573	0.284	263.1	.068%	100.000%

Zonal flux distribution table

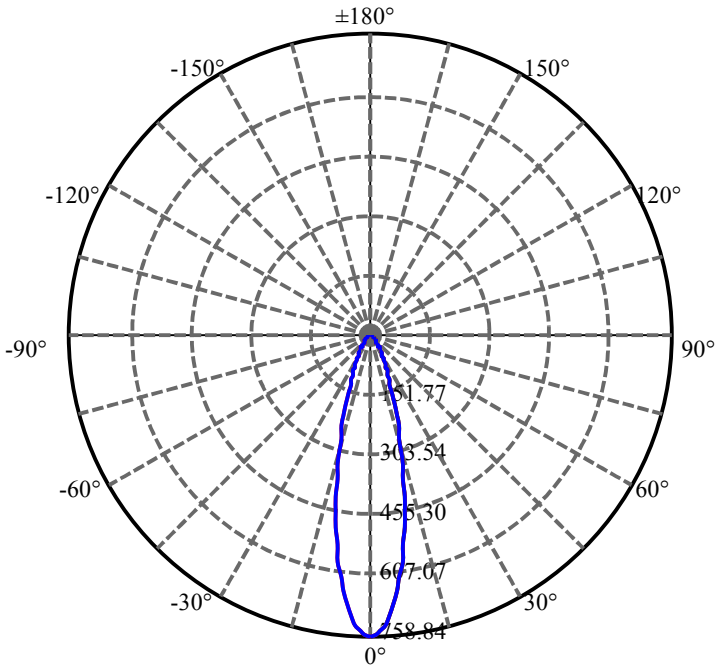
ZONAL LUMEN SUMMARY

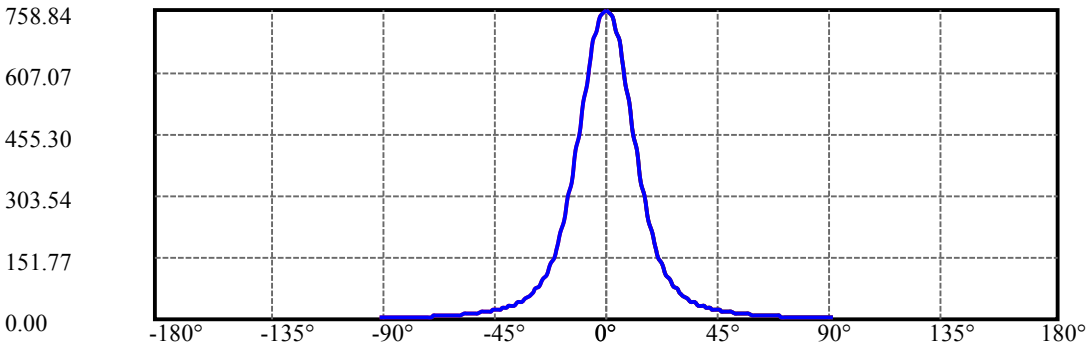
Zone	Lumens	%Lamp	%Fixt
0-30	188.77	45.52%	71.75%
0-40	214.80	51.80%	81.64%
0-60	243.79	58.79%	92.66%
0-90	262.82	63.38%	99.89%
0-120	262.82	63.38%	99.89%
0-180	263.10	63.45%	100.00%
60-90	20.06	4.84%	7.63%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-37.97	210.48	50.76%	80.00%

ZONAL LUMEN SUMMARY

0-10	58.80
10-20	83.31
20-30	46.65
30-40	26.03
40-50	16.89
50-60	12.10
60-70	8.58
70-80	6.32
80-90	4.12
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):

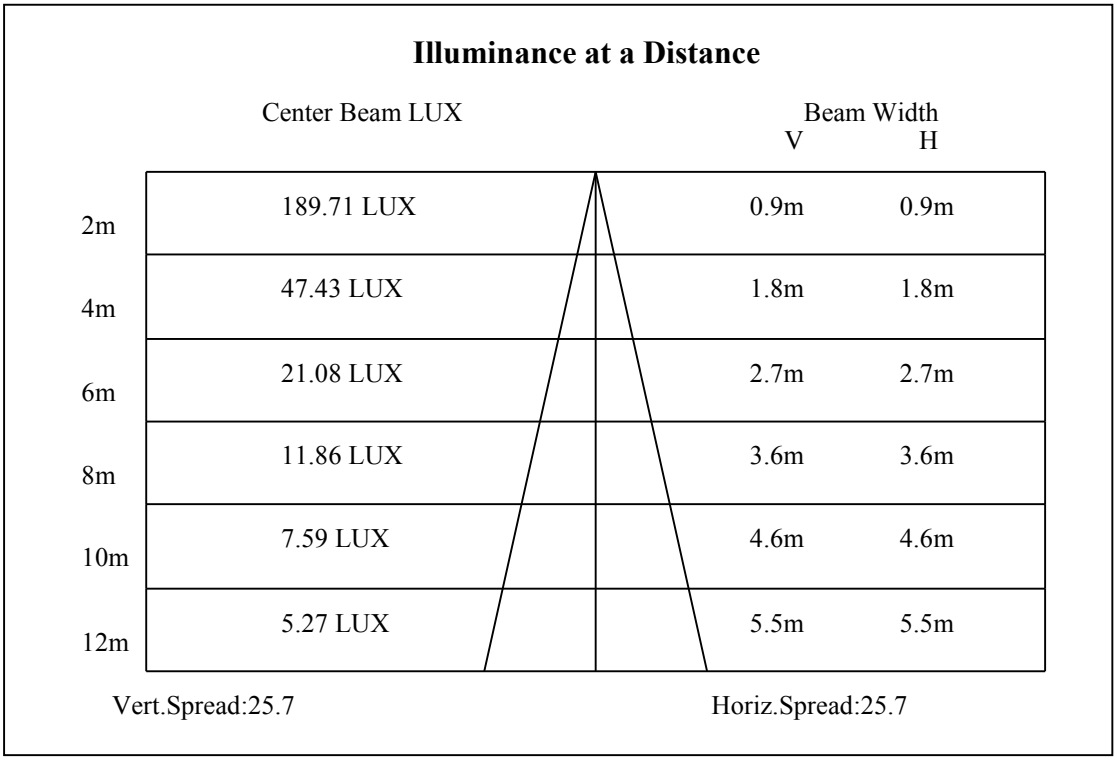
C0/C180:

C90/C270:

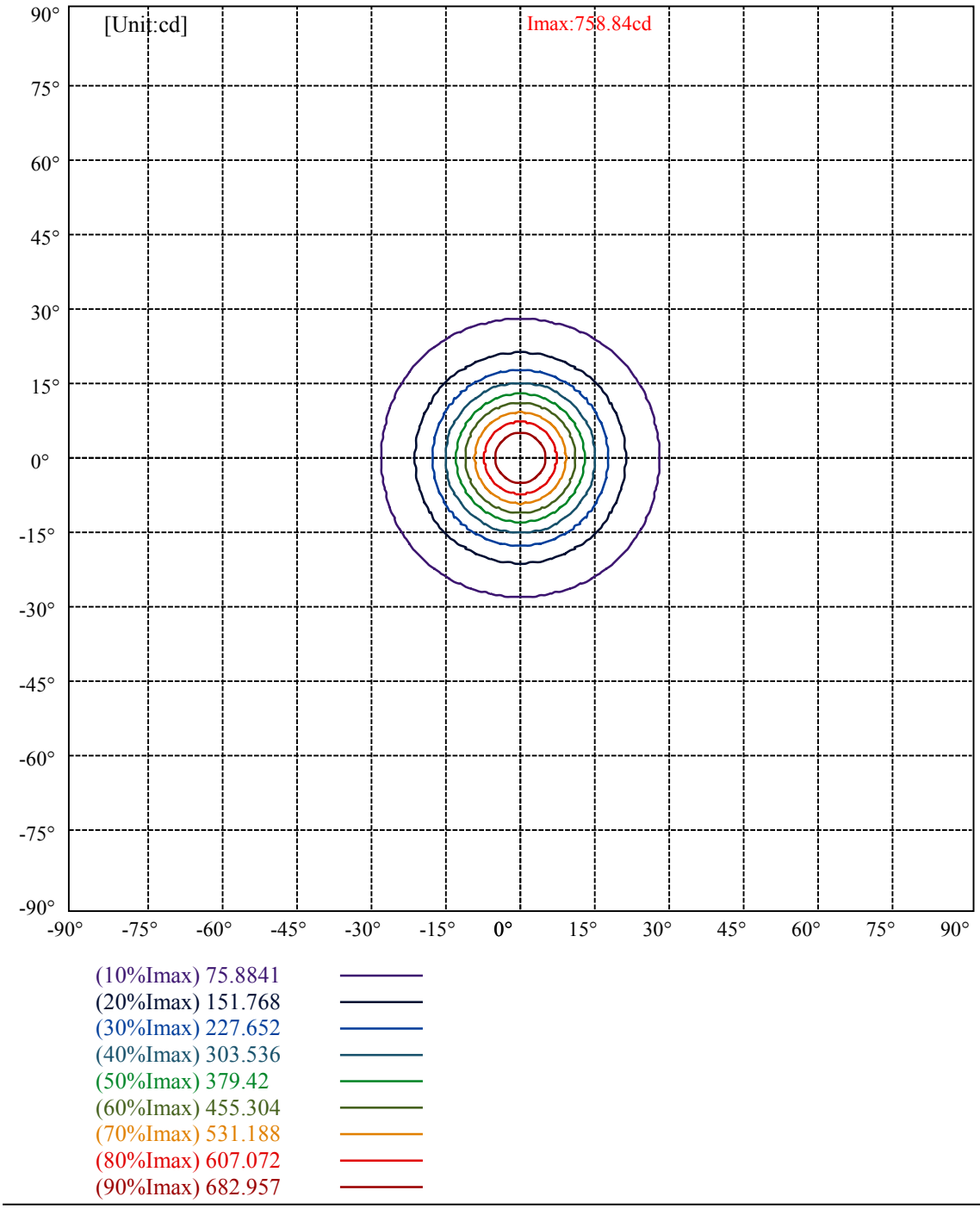
Field angle(10%Imax):C0/180Left:27.6 Right:27.6
:C90/270Left:27.6 Right:27.6

Beam Angle(50%Imax):C0/180Left:12.8 Right:12.8
:C90/270Left:12.8 Right:12.8

Lux distance Curve



ISO-Intensity(V-H)

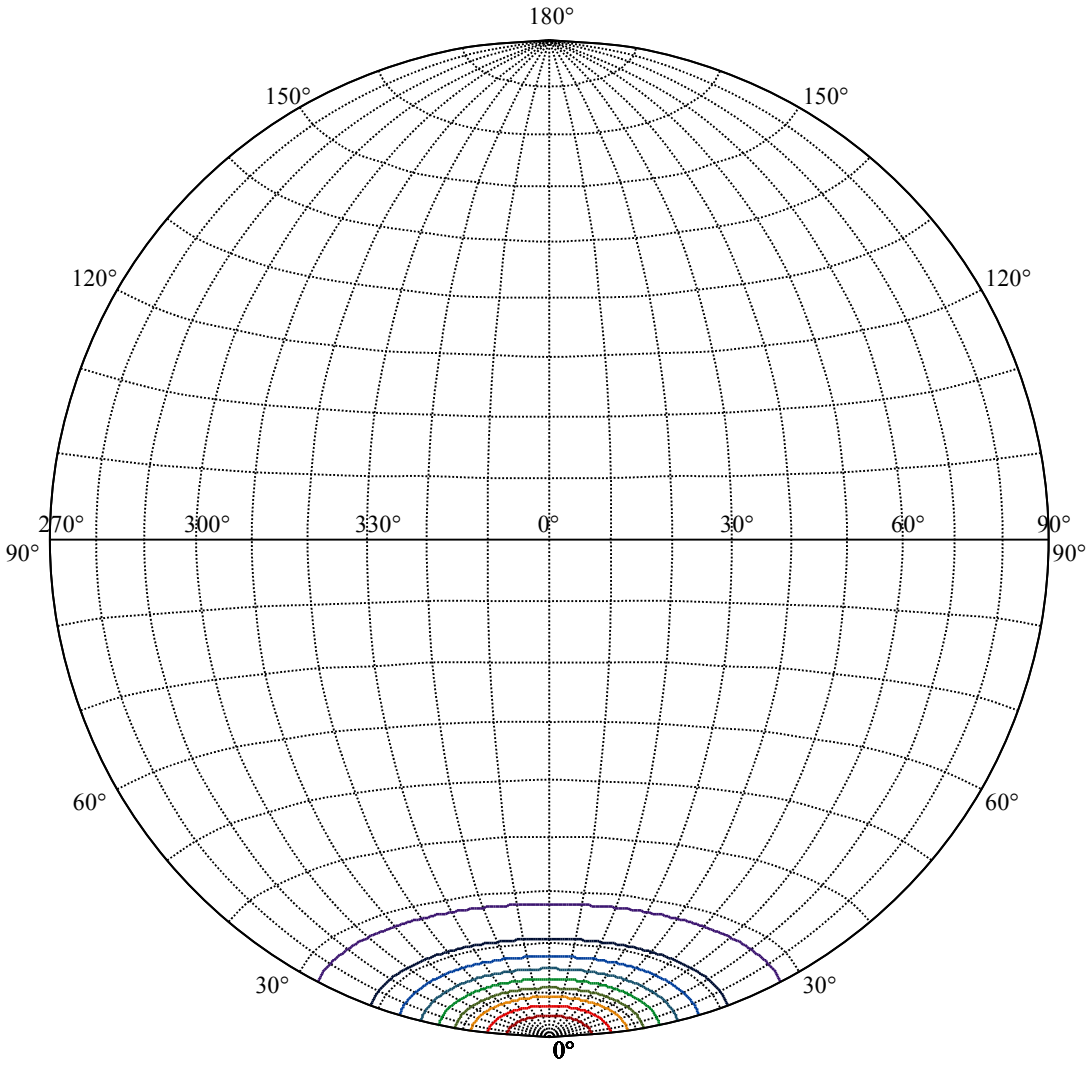


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/14
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web

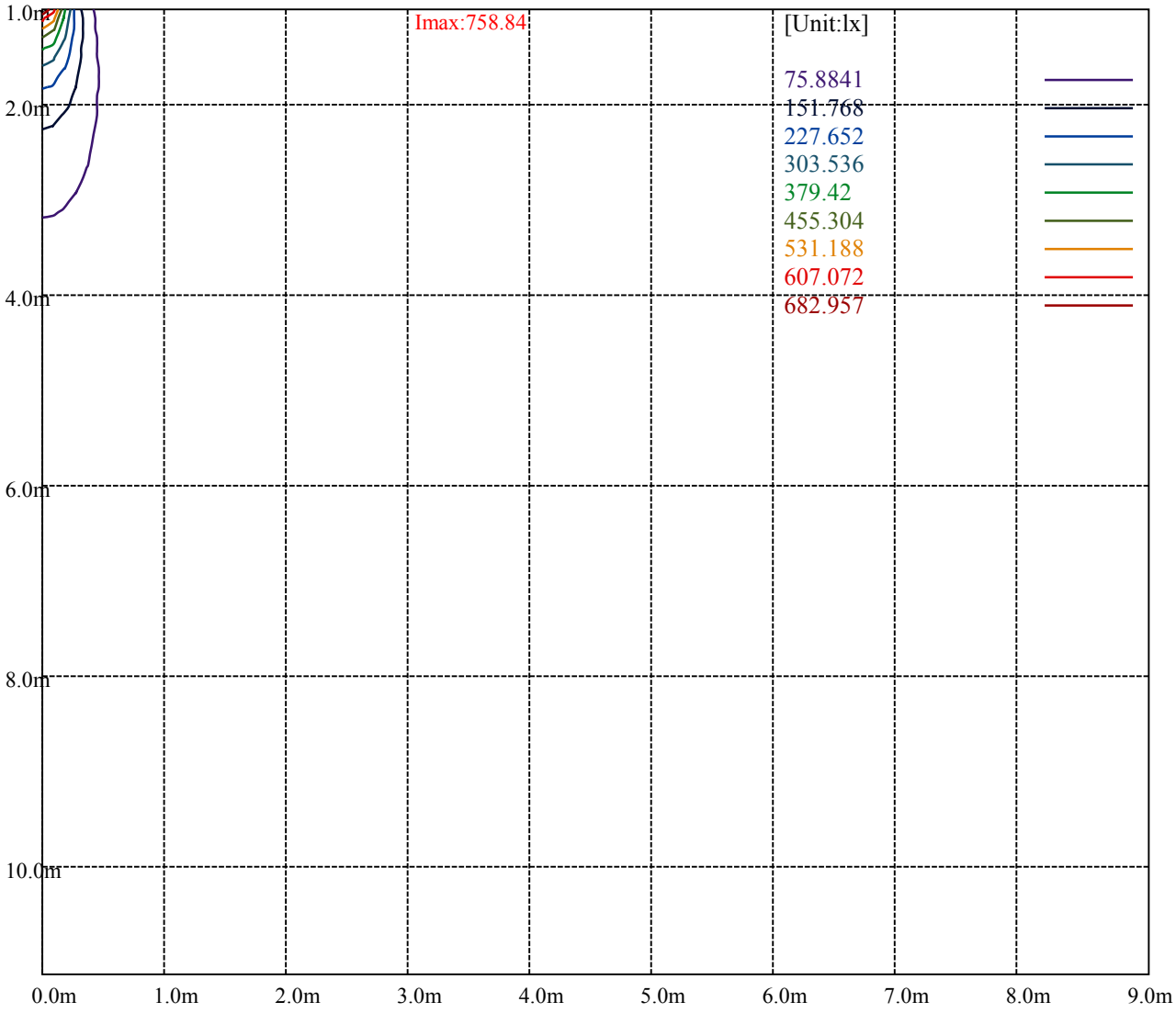


House [Unit:cd] Road

Imax:758.84

(10%Imax) 75.8841
(20%Imax) 151.768
(30%Imax) 227.652
(40%Imax) 303.536
(50%Imax) 379.42
(60%Imax) 455.304
(70%Imax) 531.188
(80%Imax) 607.072
(90%Imax) 682.957

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2021/7/14
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Nata 61.0138.000

Luminance Limitting Curve(no luminous side)

Luminance Table

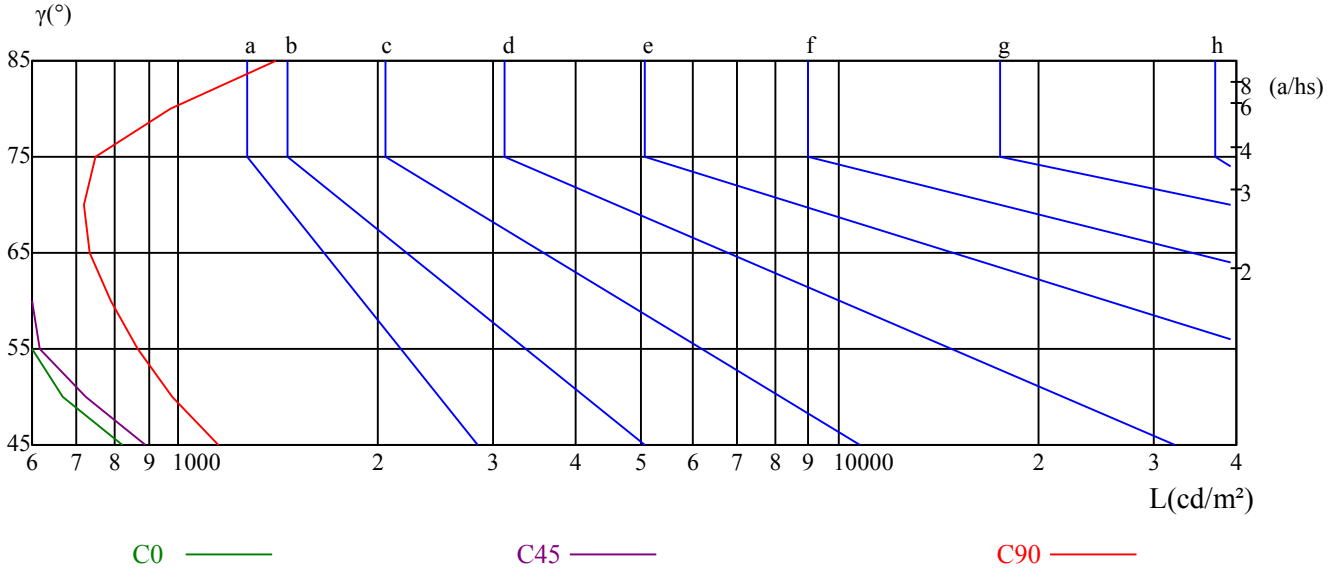
γ	45	50	55	60	65	70	75	80	85
C0	825	666	558	475	405	355	318	332	323
C45	890	726	614	529	458	408	374	400	403
C90	1151	978	868	792	735	719	748	974	1401

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
791	791	791	846	846	846	1963	1963	1963

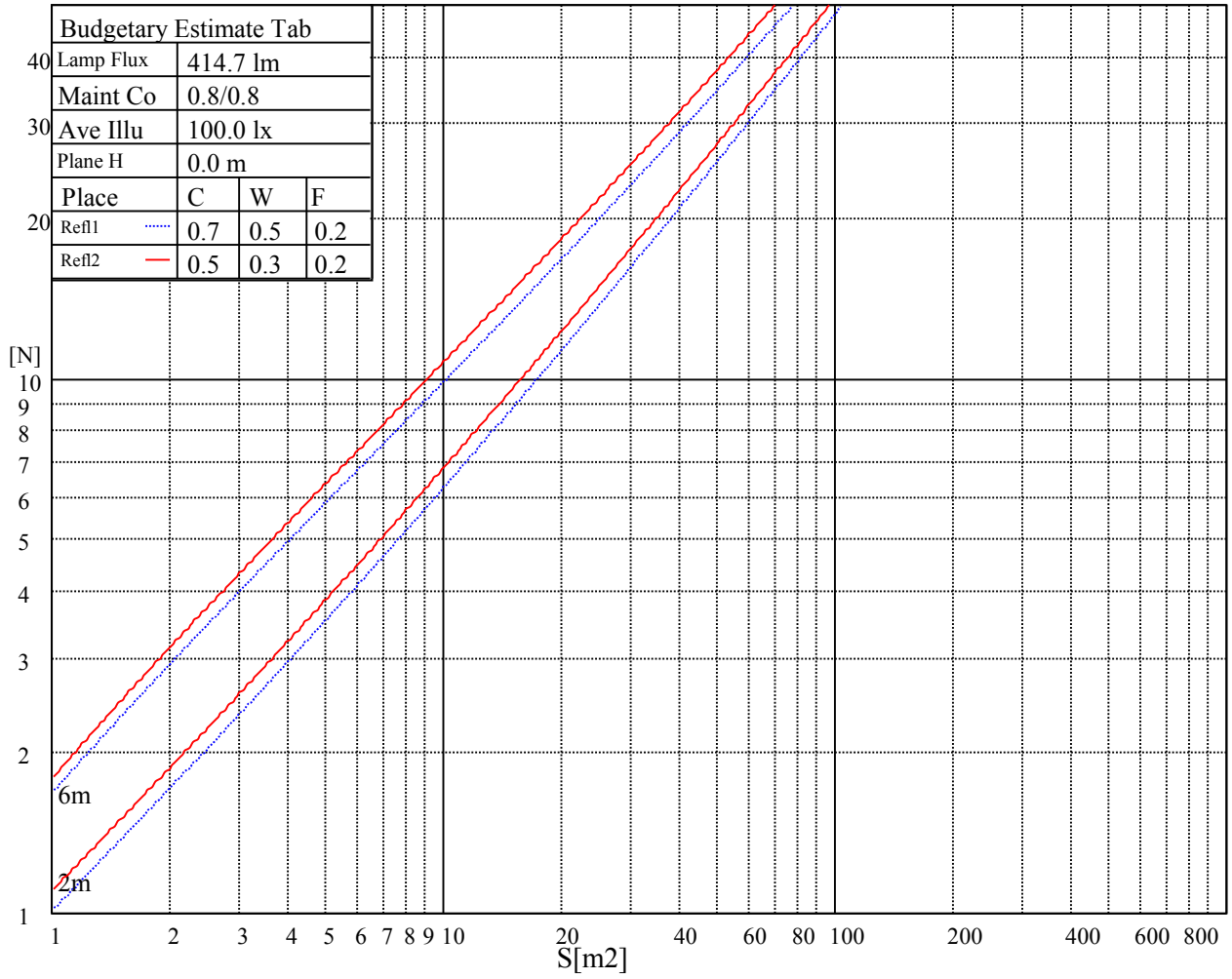
Glare Table

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



Budgetary Estimate Table

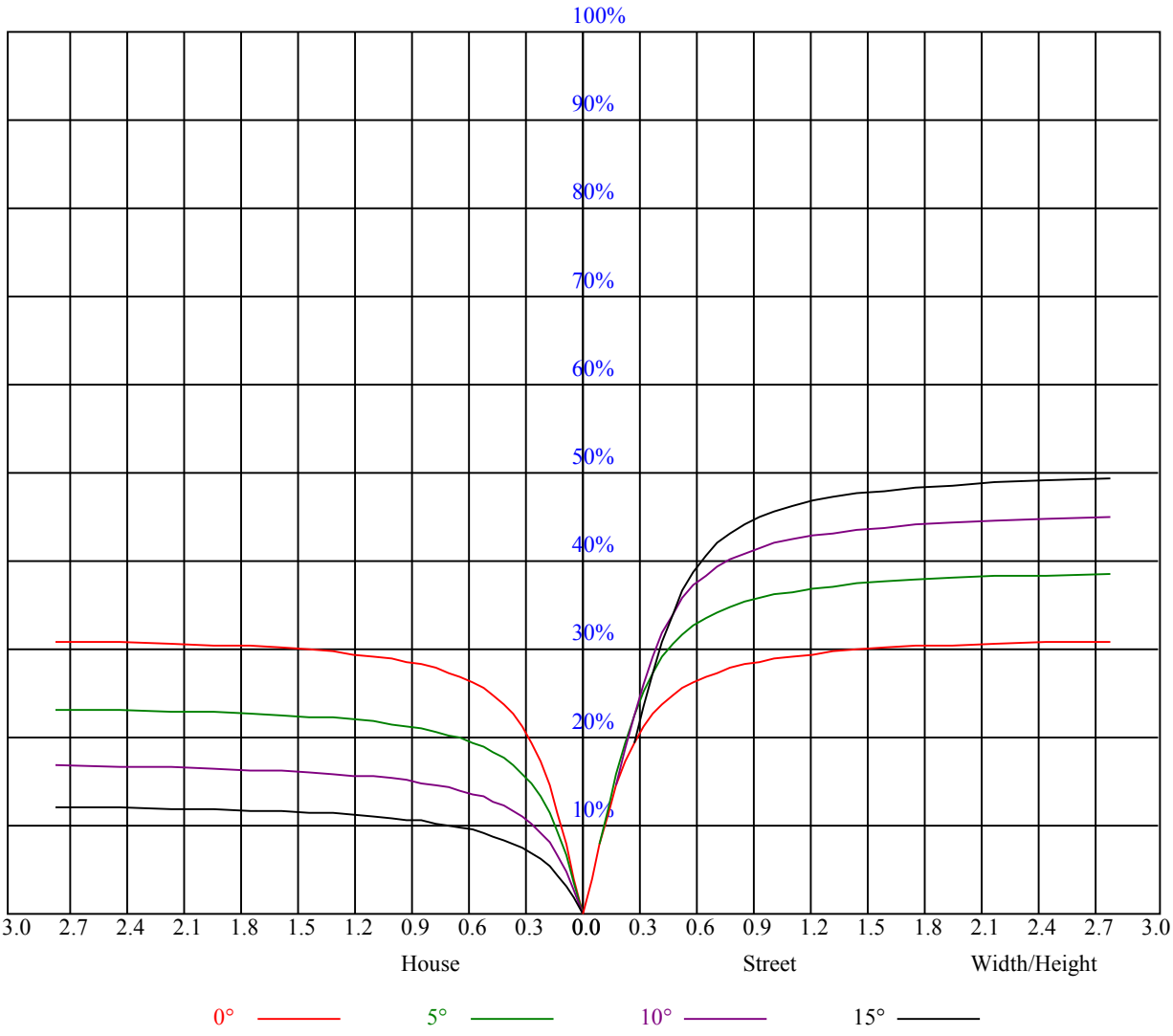


Equipment: GMS1980	Date: 2021/7/14	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

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	0.76	0.76	0.76	0.74	0.74	0.74	0.70	0.70	0.70	0.67	0.67	0.67	0.65	0.65	0.65	0.63
1	0.69	0.68	0.66	0.68	0.66	0.65	0.65	0.64	0.63	0.63	0.62	0.61	0.61	0.60	0.59	0.58
2	0.64	0.62	0.59	0.63	0.61	0.58	0.61	0.59	0.57	0.59	0.57	0.56	0.57	0.56	0.55	0.54
3	0.60	0.57	0.54	0.59	0.56	0.54	0.57	0.55	0.53	0.56	0.54	0.52	0.54	0.53	0.51	0.50
4	0.56	0.53	0.50	0.56	0.52	0.50	0.54	0.51	0.49	0.53	0.51	0.49	0.52	0.50	0.48	0.47
5	0.53	0.49	0.47	0.53	0.49	0.47	0.51	0.48	0.46	0.50	0.48	0.46	0.49	0.47	0.45	0.44
6	0.50	0.47	0.44	0.50	0.46	0.44	0.49	0.46	0.44	0.48	0.45	0.43	0.47	0.45	0.43	0.42
7	0.48	0.44	0.42	0.48	0.44	0.42	0.47	0.44	0.41	0.46	0.43	0.41	0.45	0.43	0.41	0.40
8	0.46	0.42	0.40	0.45	0.42	0.40	0.45	0.42	0.39	0.44	0.41	0.39	0.44	0.41	0.39	0.38
9	0.44	0.40	0.38	0.44	0.40	0.38	0.43	0.40	0.38	0.42	0.40	0.38	0.42	0.39	0.37	0.37
10	0.42	0.39	0.36	0.42	0.39	0.36	0.41	0.38	0.36	0.41	0.38	0.36	0.40	0.38	0.36	0.35

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2021/7/14	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

Intensity data(cd)

C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	765.34	768.09	762.86	751.67	734.40	712.24	677.81	646.03	611.66
45.0	760.22	744.81	723.49	698.46	666.45	629.27	593.27	549.62	511.31
90.0	751.05	729.84	701.27	671.51	634.05	597.60	553.50	507.88	467.33
135.0	758.76	747.11	722.42	698.01	668.98	627.19	589.95	550.91	511.20
180.0	765.34	755.89	740.31	718.48	689.18	657.73	617.23	574.88	534.71
225.0	760.22	768.09	770.85	764.78	752.57	736.31	706.22	678.38	646.26
270.0	751.05	764.89	774.06	775.80	770.40	759.66	736.99	713.59	685.58
315.0	758.76	766.52	767.59	762.24	750.54	731.76	709.37	679.33	644.51
360.0	765.34	768.09	762.86	751.67	734.40	712.24	677.81	646.03	611.66

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	565.76	528.02	489.60	450.96	403.93	367.88	333.73	297.62	264.54
45.0	467.94	422.94	385.82	350.16	308.53	278.16	250.09	219.26	196.43
90.0	427.61	379.91	344.14	311.23	272.81	245.25	220.16	195.13	172.52
135.0	460.69	420.86	382.05	341.04	302.91	272.36	241.31	213.64	191.19
180.0	492.81	442.07	403.37	365.79	320.96	289.41	259.65	229.78	202.78
225.0	600.64	561.60	520.82	470.81	435.32	390.71	345.32	315.06	283.33
270.0	644.85	608.85	570.49	525.60	479.98	439.48	395.04	357.86	318.15
315.0	610.88	569.19	525.04	485.44	445.61	397.13	360.34	326.25	289.52
360.0	565.76	528.02	489.60	450.96	403.93	367.88	333.73	297.62	264.54

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	237.83	211.33	187.54	169.03	150.08	135.62	121.22	108.56	98.55
45.0	176.01	156.49	139.56	125.61	112.28	100.46	91.24	82.13	75.21
90.0	154.74	137.53	124.03	110.93	99.51	90.56	81.79	74.03	67.89
135.0	168.36	152.04	134.38	119.53	108.62	97.59	87.98	80.44	73.58
180.0	181.41	160.43	144.51	128.76	115.03	104.57	94.22	85.22	78.08
225.0	243.84	222.08	199.24	171.84	156.66	141.02	125.49	112.28	101.87
270.0	281.93	253.29	224.44	198.73	178.20	160.26	140.79	127.07	114.75
315.0	256.61	230.29	204.13	180.90	162.39	144.06	129.94	115.82	103.73
360.0	237.83	211.33	187.54	169.03	150.08	135.62	121.22	108.56	98.55

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	89.61	79.76	73.07	67.11	60.58	56.08	51.92	47.70	43.93
45.0	68.40	62.27	57.15	52.88	47.93	44.44	41.46	38.03	35.55
90.0	62.44	56.48	52.09	48.21	43.88	40.95	38.25	35.21	33.08
135.0	66.15	60.81	56.03	51.41	47.19	43.93	40.44	37.58	34.99
180.0	71.66	64.58	59.46	55.07	50.40	46.41	43.20	39.94	37.07
225.0	91.74	83.70	75.71	68.74	63.28	57.83	52.99	49.05	45.51
270.0	102.66	91.97	83.87	75.88	68.96	63.51	57.99	53.72	49.39
315.0	94.33	85.84	76.56	70.20	64.58	58.28	53.94	49.89	45.90
360.0	89.61	79.76	73.07	67.11	60.58	56.08	51.92	47.70	43.93

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	40.89	37.80	35.33	32.79	30.54	28.74	26.94	25.31	24.02
45.0	33.41	31.11	29.08	27.51	25.76	24.41	23.01	21.77	20.76
90.0	31.16	29.03	27.62	25.99	24.36	23.29	22.16	20.87	19.97
135.0	32.63	30.77	28.80	27.00	25.65	24.41	22.73	21.60	20.76
180.0	34.76	32.34	30.43	28.41	26.61	25.14	23.85	22.28	21.26
225.0	41.57	38.76	36.17	33.30	31.22	29.36	27.51	25.82	24.41
270.0	45.45	42.30	39.43	36.17	33.92	31.84	29.53	27.90	26.38
315.0	42.36	39.49	36.62	33.98	31.89	29.81	28.07	26.38	24.81
360.0	40.89	37.80	35.33	32.79	30.54	28.74	26.94	25.31	24.02

Intensity data(cd)

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	23.01	21.43	20.36	19.52	18.39	17.49	16.76	15.86	15.13
45.0	19.58	18.62	17.83	17.04	16.14	15.47	14.79	14.06	13.44
90.0	19.07	18.00	17.38	16.65	15.92	15.24	14.63	13.89	13.39
135.0	19.46	18.62	17.89	16.99	16.20	15.64	14.85	14.23	13.73
180.0	20.19	19.01	18.17	17.38	16.54	15.69	15.08	14.34	13.73
225.0	22.95	21.77	20.59	19.52	18.56	17.61	16.76	16.03	15.36
270.0	25.03	23.51	22.33	21.32	20.19	19.13	18.34	17.49	16.65
315.0	23.57	22.39	21.04	20.08	19.18	18.11	17.38	16.65	15.92
360.0	23.01	21.43	20.36	19.52	18.39	17.49	16.76	15.86	15.13

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	14.57	13.84	13.28	12.71	12.09	11.59	11.14	10.52	10.13
45.0	12.94	12.32	11.76	11.31	10.69	10.24	9.73	9.17	8.72
90.0	12.77	12.26	11.76	11.25	10.74	10.29	9.84	9.34	8.89
135.0	13.05	12.54	12.09	11.53	11.08	10.63	10.01	9.62	9.23
180.0	13.11	12.54	12.04	11.42	10.86	10.41	9.90	9.34	8.89
225.0	14.57	14.01	13.44	12.88	12.21	11.76	11.31	10.74	10.29
270.0	16.03	15.24	14.74	14.06	13.50	12.94	12.43	11.93	11.42
315.0	15.13	14.57	13.95	13.39	12.77	12.26	11.81	11.31	10.80
360.0	14.57	13.84	13.28	12.71	12.09	11.59	11.14	10.52	10.13

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	9.68	9.17	8.78	8.38	7.99	7.59	7.31	6.92	6.64
45.0	8.33	7.88	7.48	7.20	6.86	6.58	6.30	5.96	5.74
90.0	8.55	8.16	7.82	7.59	7.26	6.98	6.75	6.47	6.24
135.0	8.78	8.44	8.10	7.71	7.43	7.14	6.86	6.69	6.36
180.0	8.49	7.99	7.65	7.31	6.98	6.69	6.41	6.02	5.85
225.0	9.90	9.51	9.06	8.61	8.27	7.93	7.54	7.20	6.86
270.0	10.97	10.52	10.13	9.73	9.34	8.94	8.61	8.27	7.93
315.0	10.41	10.07	9.56	9.17	8.83	8.38	8.10	7.76	7.43
360.0	9.68	9.17	8.78	8.38	7.99	7.59	7.31	6.92	6.64

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	6.30	6.02	5.74	5.51	5.23	5.01	4.78	4.50	4.33
45.0	5.46	5.23	4.95	4.67	4.39	4.22	3.94	3.71	3.54
90.0	6.02	5.79	5.63	5.57	7.59	10.13	9.62	7.88	5.74
135.0	6.13	5.91	5.68	5.40	5.34	6.24	8.61	8.33	7.14
180.0	5.63	5.23	5.06	4.78	4.50	4.33	4.16	3.83	3.66
225.0	6.58	6.30	6.02	5.79	5.51	5.29	5.06	4.84	4.61
270.0	7.65	7.37	7.09	6.86	6.64	6.47	6.24	6.08	5.91
315.0	7.09	6.86	6.58	6.36	6.13	5.91	5.74	5.63	6.69
360.0	6.30	6.02	5.74	5.51	5.23	5.01	4.78	4.50	4.33

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	4.11	3.88	3.66	3.49	3.32	3.15	2.87	2.76	2.70
45.0	3.32	3.15	2.98	2.81	2.48	2.42	2.42	2.36	2.36
90.0	4.28	3.88	3.60	3.43	3.04	2.76	2.42	2.42	2.42
135.0	5.01	4.05	3.77	3.66	2.98	2.64	2.42	2.31	2.31
180.0	3.43	3.15	2.98	2.81	2.53	2.42	2.31	2.31	2.25
225.0	4.44	4.22	4.05	3.83	3.60	3.32	3.09	2.98	2.81
270.0	7.82	11.03	12.94	12.71	11.14	5.40	3.77	3.43	3.09
315.0	8.61	9.68	8.38	7.09	6.02	3.77	3.38	3.04	2.87
360.0	4.11	3.88	3.66	3.49	3.32	3.15	2.87	2.76	2.70

Intensity data(cd)

C/γ(°)	90.0
0.0	2.76
45.0	2.36
90.0	2.36
135.0	2.31
180.0	2.31
225.0	2.76
270.0	2.93
315.0	2.81
360.0	2.76