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Nata

LumCAT: 1-0923-M
Luminaire: 92.70.123.00

Report No: 200406-B027	Voltage(V): 220.4000
Test No: 200406-C027	Current(A): 0.0420
LampCAT: LUMINUS CXM-6-AC40	Power (W): 8.5000
Lamp flux(lm): 808.0	PF: 0.8990
Number of Lamps: 1	Ballast type: AC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 608.73
Efficiency(%): 75.34%
Lumens(lm)/Power(W): 71.62
Central intensity(cd): 2662.438
Maximum intensity(cd): 2662.438
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=26.3
[C90/270]Total=26.3
Field angle(10%Imax): [C0/180]Total=47.9
[C90/270]Total=47.9
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(%): 75.34%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 99.442%

Equipment: GMS 1800	Date: 2020/4/6	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 6.81

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2662.438	0.000	0	.000%	.000%
1.0	2652.114	2.543	2.543	.315%	.418%
2.0	2621.719	7.570	10.112	.937%	1.661%
3.0	2571.488	12.420	22.533	1.537%	3.702%
4.0	2503.101	16.986	39.519	2.102%	6.492%
5.0	2420.271	21.180	60.699	2.621%	9.971%
6.0	2319.518	24.909	85.608	3.083%	14.063%
7.0	2203.103	28.072	113.68	3.474%	18.675%
8.0	2083.093	30.675	144.355	3.796%	23.714%
9.0	1954.555	32.723	177.078	4.050%	29.090%
10.0	1794.928	33.931	211.01	4.199%	34.664%
11.0	1658.386	34.506	245.515	4.271%	40.332%
12.0	1506.183	34.593	280.109	4.281%	46.015%
13.0	1348.267	33.875	313.984	4.192%	51.580%
14.0	1211.986	32.771	346.755	4.056%	56.963%
15.0	1043.919	30.970	377.725	3.833%	62.051%
16.0	898.757	28.466	406.191	3.523%	66.727%
17.0	808.219	26.582	432.773	3.290%	71.094%
18.0	705.609	24.960	457.733	3.089%	75.194%
19.0	605.343	22.808	480.54	2.823%	78.941%
20.0	516.765	20.538	501.078	2.542%	82.315%
21.0	438.999	18.353	519.431	2.271%	85.330%
22.0	371.981	16.297	535.728	2.017%	88.007%
23.0	307.463	14.257	549.984	1.764%	90.349%
24.0	264.522	12.506	562.49	1.548%	92.403%
25.0	217.724	10.965	573.455	1.357%	94.204%
26.0	149.297	8.664	582.119	1.072%	95.628%
27.0	111.136	6.372	588.49	.789%	96.674%
28.0	83.793	4.935	593.425	.611%	97.485%
29.0	51.310	3.535	596.96	.437%	98.066%
30.0	29.083	2.171	599.131	.269%	98.422%
31.0	16.902	1.280	600.41	.158%	98.633%
32.0	9.107	0.745	601.156	.092%	98.755%
33.0	5.162	0.420	601.576	.052%	98.824%
34.0	3.509	0.262	601.838	.032%	98.867%
35.0	2.947	0.200	602.039	.025%	98.900%
36.0	2.726	0.181	602.22	.022%	98.930%
37.0	2.535	0.172	602.391	.021%	98.958%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	2.390	0.164	602.555	.020%	98.985%
39.0	2.256	0.159	602.714	.020%	99.011%
40.0	2.129	0.153	602.867	.019%	99.036%
41.0	2.013	0.147	603.014	.018%	99.060%
42.0	1.937	0.144	603.158	.018%	99.084%
43.0	1.845	0.140	603.298	.017%	99.107%
44.0	1.758	0.136	603.434	.017%	99.129%
45.0	1.671	0.132	603.566	.016%	99.151%
46.0	1.630	0.129	603.695	.016%	99.172%
47.0	1.578	0.128	603.822	.016%	99.193%
48.0	1.514	0.125	603.947	.015%	99.214%
49.0	1.462	0.122	604.07	.015%	99.234%
50.0	1.427	0.120	604.19	.015%	99.253%
51.0	1.398	0.120	604.31	.015%	99.273%
52.0	1.380	0.119	604.429	.015%	99.293%
53.0	1.334	0.118	604.547	.015%	99.312%
54.0	1.293	0.116	604.663	.014%	99.331%
55.0	1.270	0.114	604.777	.014%	99.350%
56.0	1.264	0.115	604.892	.014%	99.369%
57.0	1.212	0.113	605.005	.014%	99.387%
58.0	1.206	0.112	605.117	.014%	99.406%
59.0	1.183	0.112	605.228	.014%	99.424%
60.0	1.177	0.112	605.34	.014%	99.442%
61.0	1.154	0.111	605.451	.014%	99.461%
62.0	1.154	0.111	605.563	.014%	99.479%
63.0	1.154	0.112	605.675	.014%	99.497%
64.0	1.131	0.112	605.787	.014%	99.516%
65.0	1.131	0.112	605.899	.014%	99.534%
66.0	1.108	0.112	606.011	.014%	99.553%
67.0	1.096	0.111	606.121	.014%	99.571%
68.0	1.108	0.112	606.233	.014%	99.589%
69.0	1.067	0.111	606.344	.014%	99.607%
70.0	1.073	0.110	606.454	.014%	99.625%
71.0	1.090	0.112	606.566	.014%	99.644%
72.0	1.079	0.113	606.679	.014%	99.662%
73.0	1.067	0.112	606.791	.014%	99.681%
74.0	1.067	0.112	606.903	.014%	99.699%
75.0	1.044	0.112	607.015	.014%	99.717%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	1.073	0.112	607.127	.014%	99.736%
77.0	1.050	0.113	607.24	.014%	99.755%
78.0	1.056	0.113	607.353	.014%	99.773%
79.0	1.061	0.114	607.467	.014%	99.792%
80.0	1.067	0.115	607.581	.014%	99.811%
81.0	1.050	0.114	607.696	.014%	99.829%
82.0	1.032	0.113	607.809	.014%	99.848%
83.0	1.044	0.113	607.922	.014%	99.866%
84.0	1.067	0.115	608.037	.014%	99.885%
85.0	1.044	0.115	608.152	.014%	99.904%
86.0	1.061	0.115	608.267	.014%	99.923%
87.0	1.067	0.117	608.384	.014%	99.942%
88.0	1.067	0.117	608.5	.014%	99.962%
89.0	1.056	0.116	608.617	.014%	99.981%
90.0	1.090	0.118	608.735	.015%	100.000%

Zonal flux distribution table

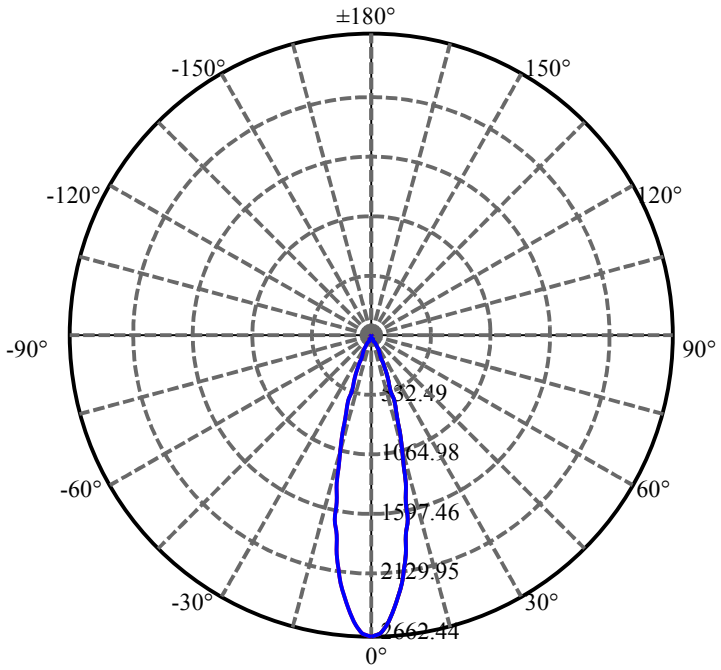
ZONAL LUMEN SUMMARY

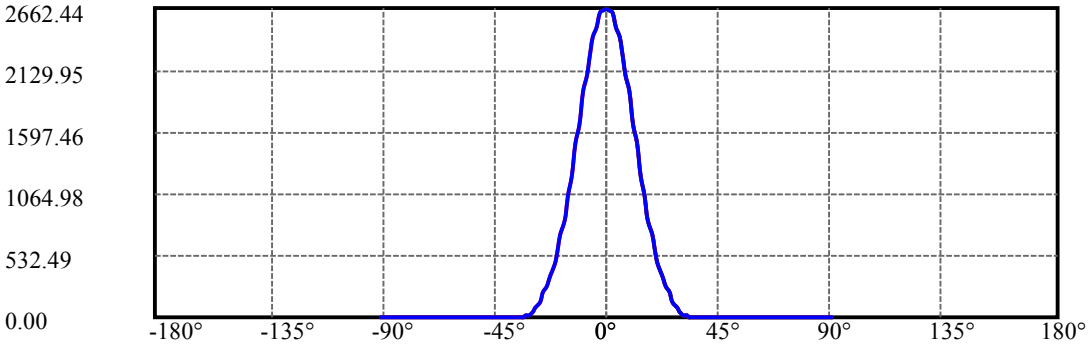
Zone	Lumens	%Lamp	%Fixt
0-30	599.13	74.15%	98.42%
0-40	602.87	74.61%	99.04%
0-60	605.34	74.92%	99.44%
0-90	608.62	75.32%	99.98%
0-120	608.62	75.32%	99.98%
0-180	608.73	75.34%	100.00%
60-90	3.39	0.42%	0.56%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-19.31	486.99	60.27%	80.00%

ZONAL LUMEN SUMMARY

0-10	211.01
10-20	290.07
20-30	98.05
30-40	3.74
40-50	1.32
50-60	1.15
60-70	1.11
70-80	1.13
80-90	1.04
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):

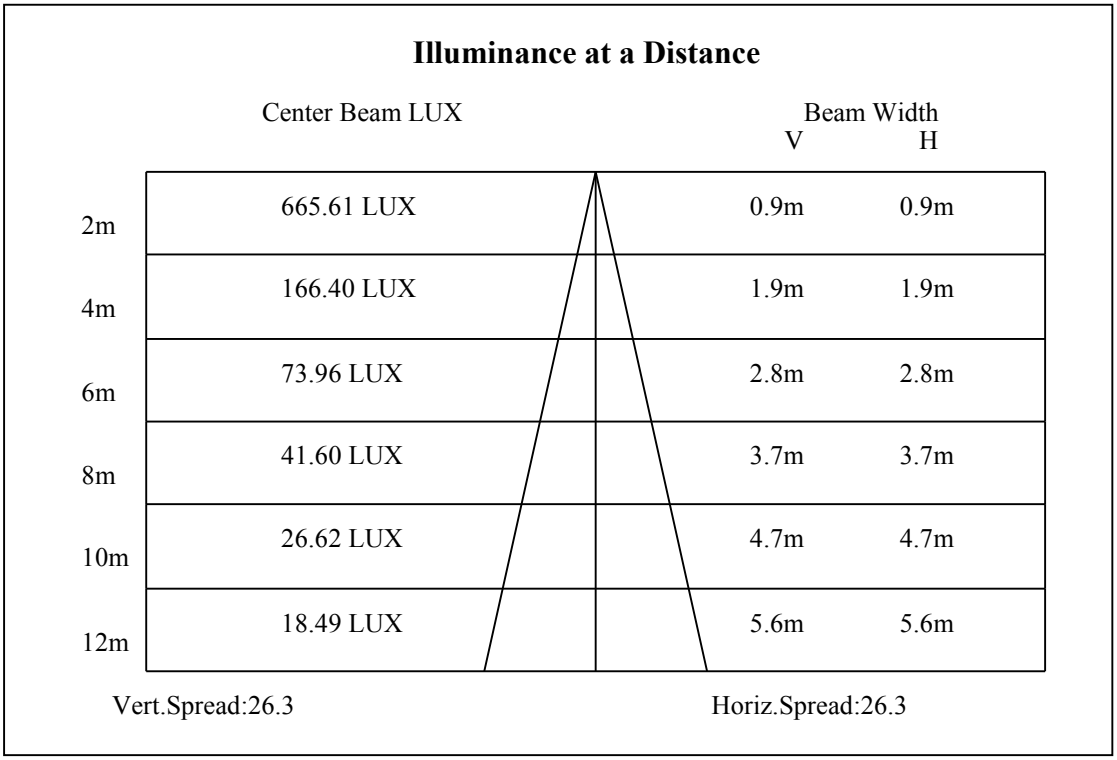
C0/C180:

C90/C270:

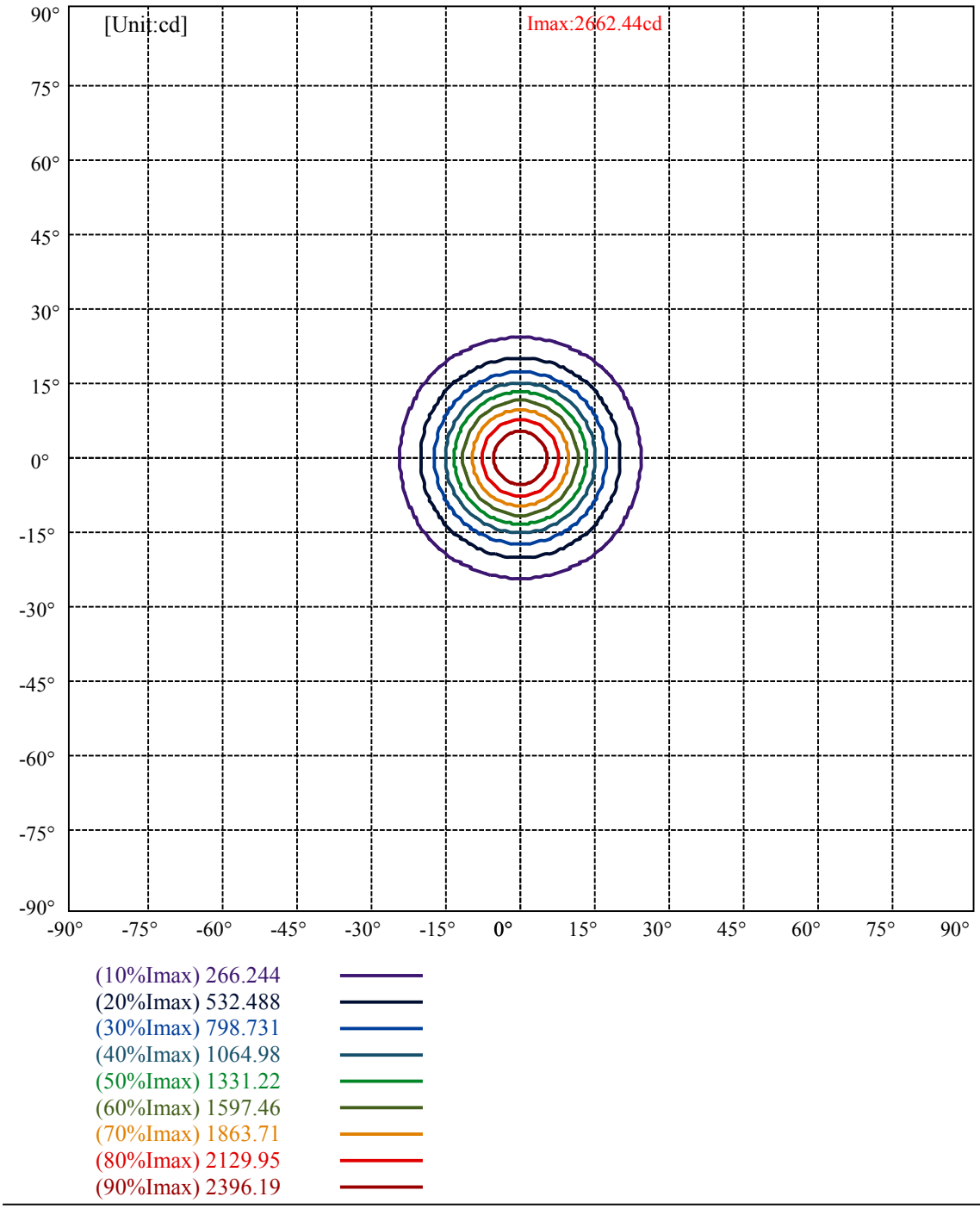
Field angle(10%Imax):C0/180Left:24.0 Right:24.0
:C90/270Left:24.0 Right:24.0

Beam Angle(50%Imax):C0/180Left:13.1 Right:13.1
:C90/270Left:13.1 Right:13.1

Lux distance Curve



ISO-Intensity(V-H)

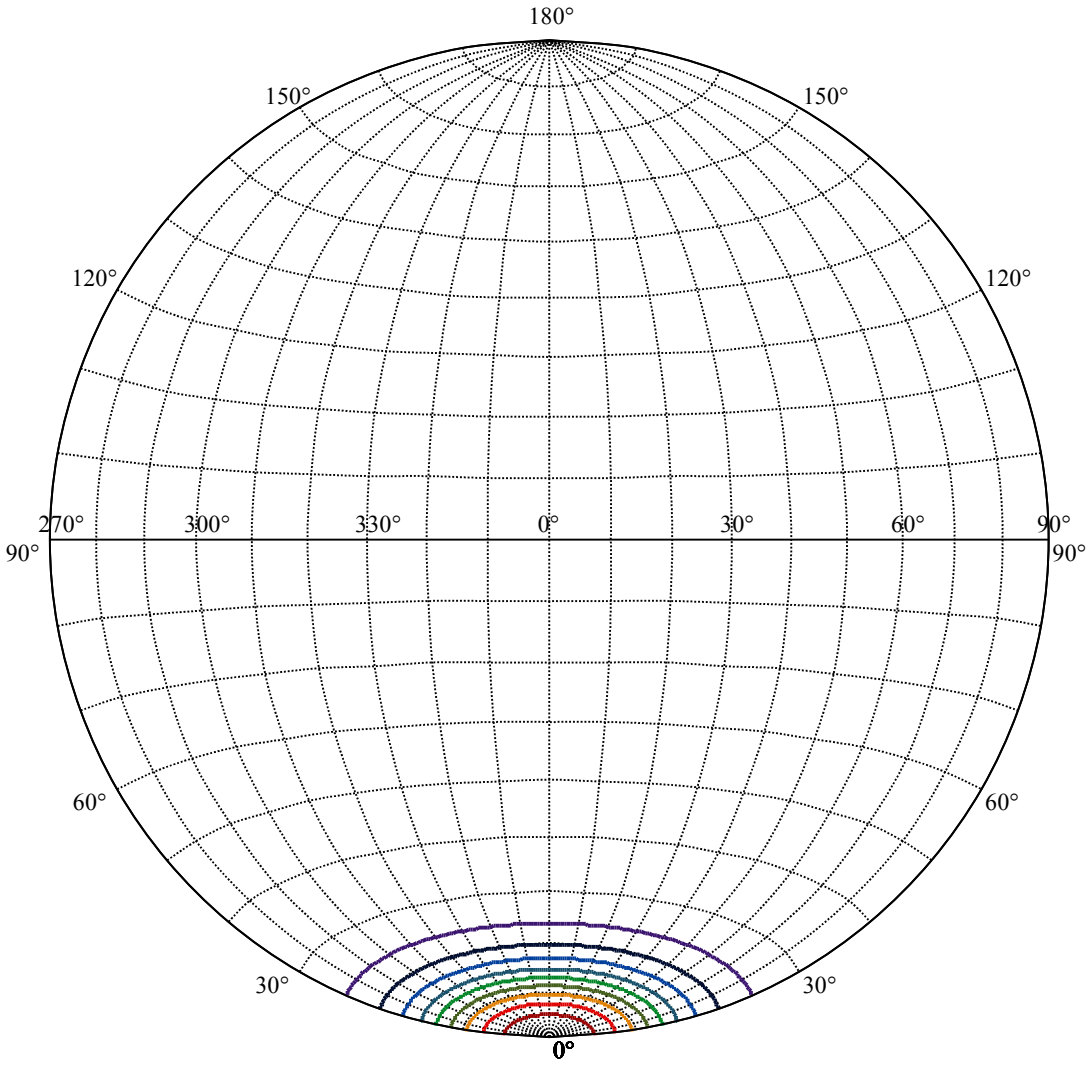


Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/4/6
Humidity(%): 60.0%

Operator: NT07
Distance(m): 6.81

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:2662.44

(10%Imax) 266.244
(20%Imax) 532.488
(30%Imax) 798.731
(40%Imax) 1064.98
(50%Imax) 1331.22
(60%Imax) 1597.46
(70%Imax) 1863.71
(80%Imax) 2129.95
(90%Imax) 2396.19

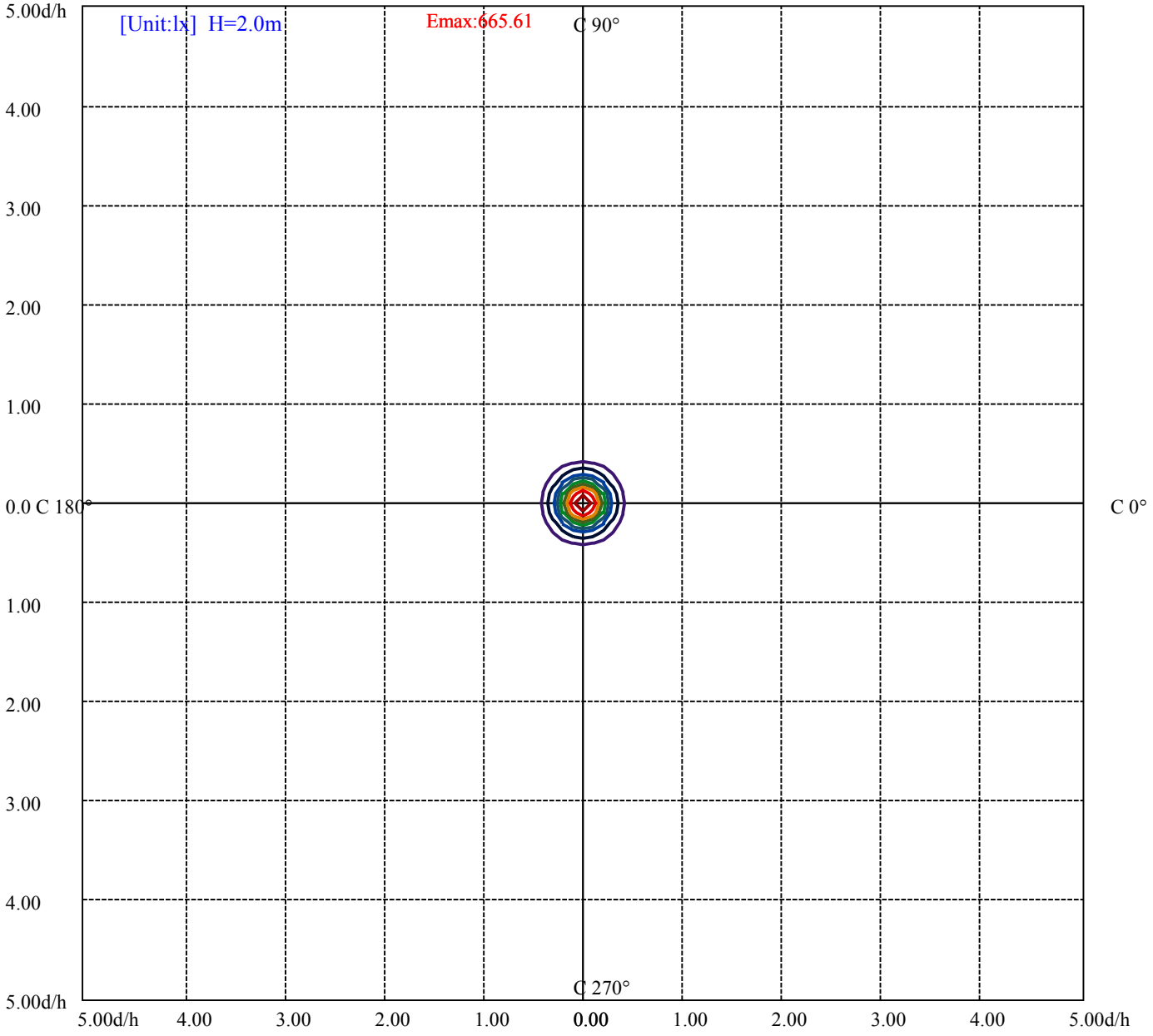
Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/4/6
Humidity(%): 60.0%

Operator: NT07
Distance(m): 6.81

Nata 1-0923-M

ISO illuminance diagram



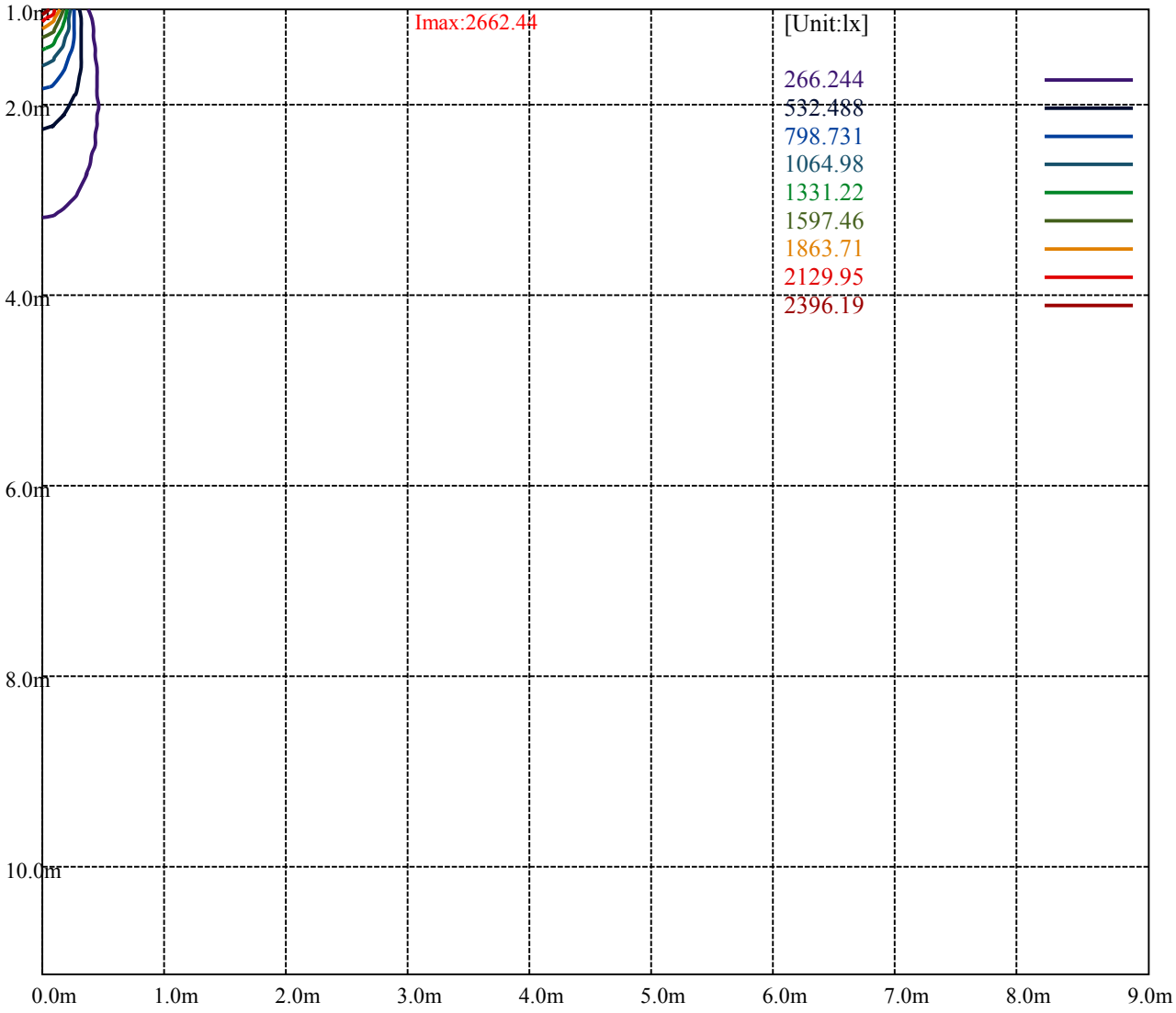
(10%Emax) 66.561
(20%Emax) 133.1217
(30%Emax) 199.6828
(40%Emax) 266.2425
(50%Emax) 332.805
(60%Emax) 399.365
(70%Emax) 465.9275
(80%Emax) 532.4875
(90%Emax) 599.0475

Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/4/6
Humidity(%): 60.0%

Operator: NT07
Distance(m): 6.81

Space ISO Lux diagram



Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/4/6
Humidity(%): 60.0%

Operator: NT07
Distance(m): 6.81

Luminance Limitting Curve(no luminous side)

Luminance Table

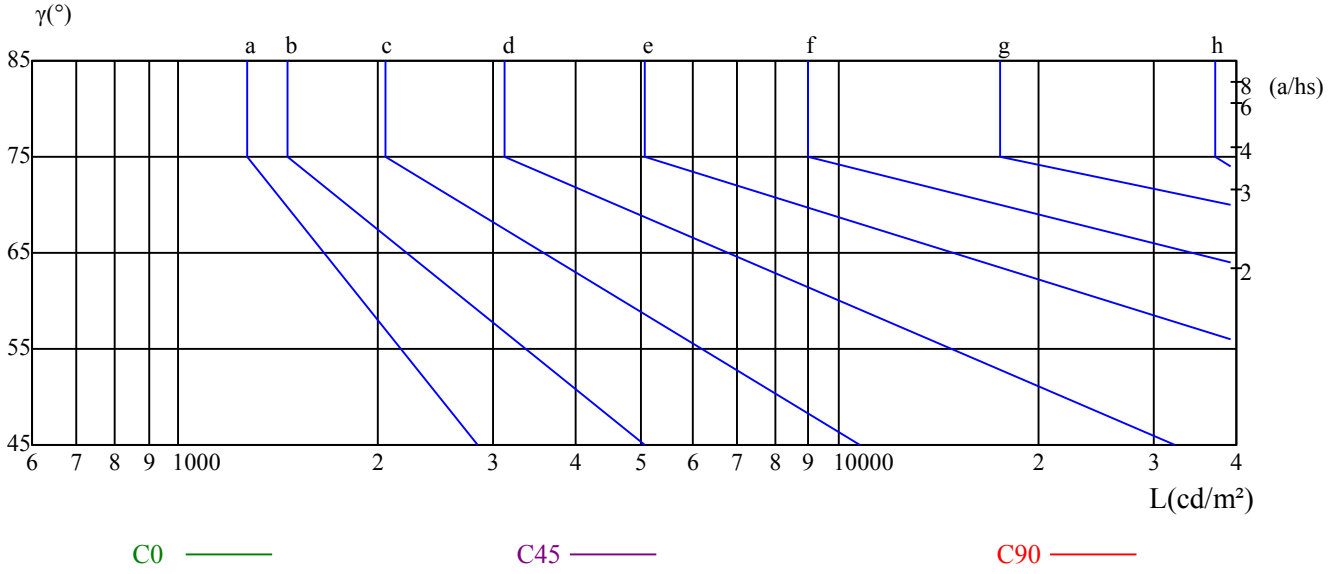
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

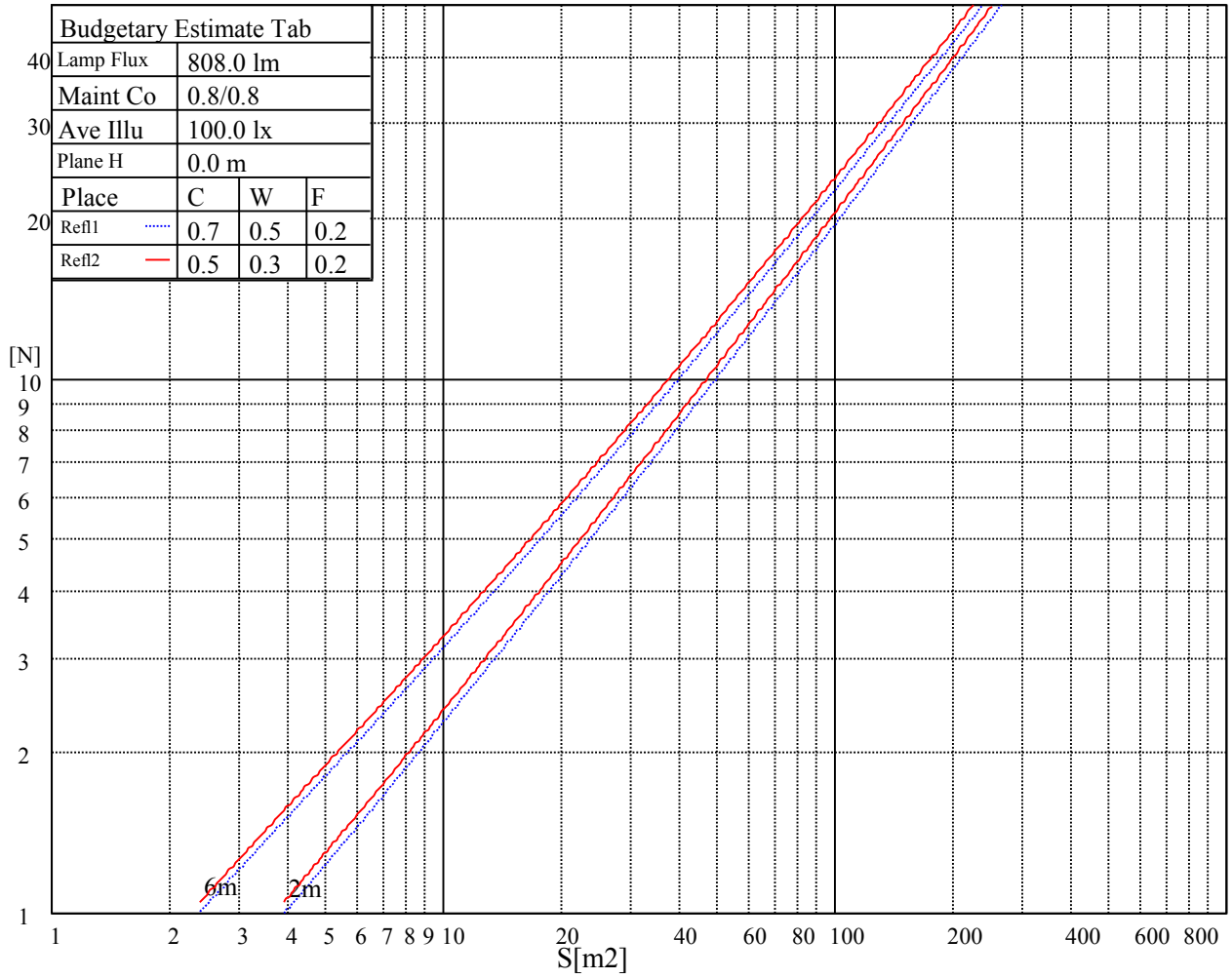
Glare Table

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 Limitting Curve



Budgetary Estimate Table



Equipment: GMS 1800
Temperature(°C): 25.0

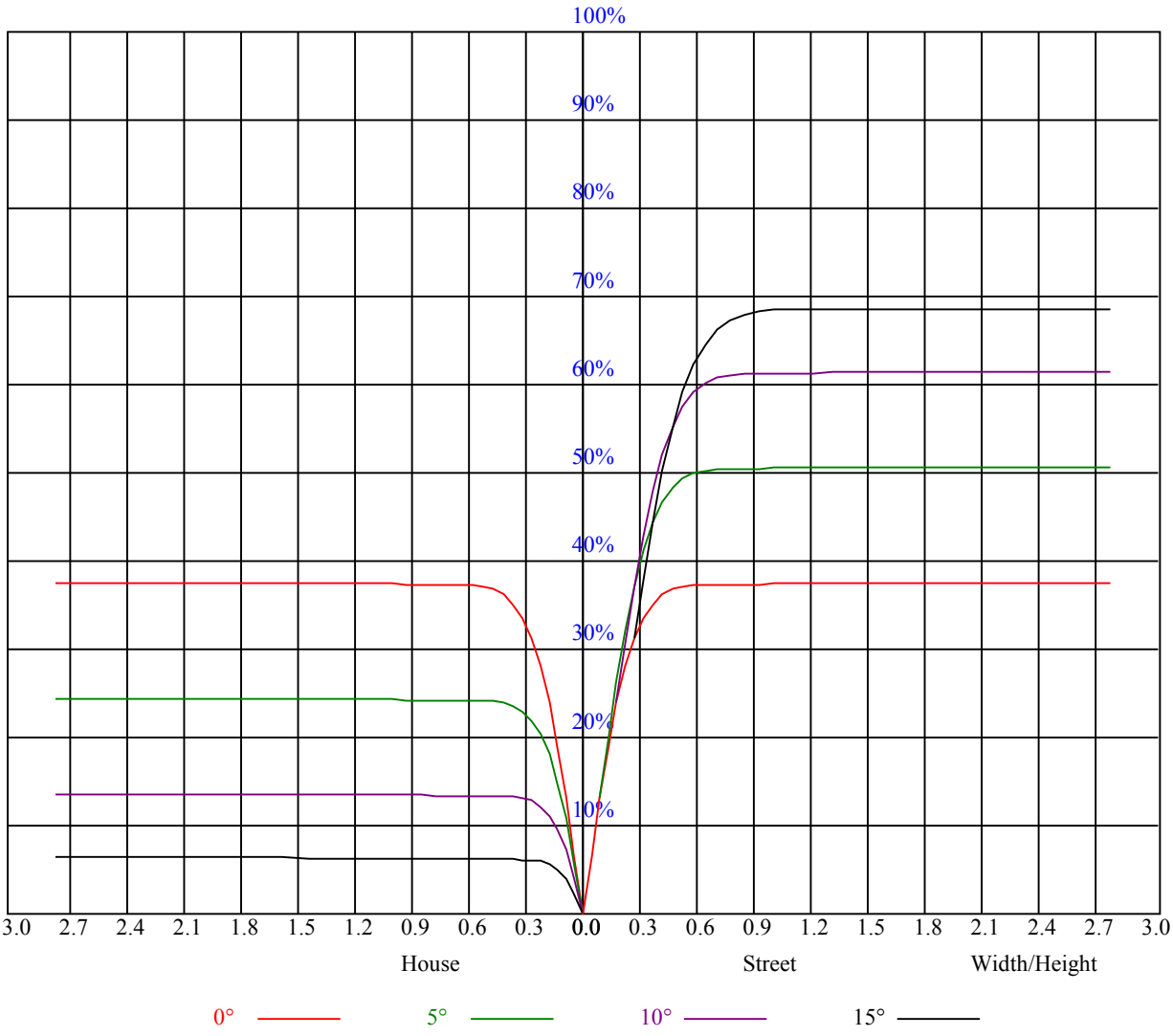
Date: 2020/4/6
Humidity(%): 60.0%

Operator: NT07
Distance(m): 6.81

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	0.90	0.90	0.90	0.88	0.88	0.88	0.84	0.84	0.84	0.80	0.80	0.80	0.77	0.77	0.77	0.75
1	0.85	0.84	0.82	0.83	0.82	0.81	0.80	0.79	0.79	0.78	0.77	0.76	0.75	0.75	0.74	0.73
2	0.81	0.79	0.77	0.80	0.78	0.76	0.78	0.76	0.75	0.75	0.74	0.73	0.73	0.72	0.71	0.70
3	0.78	0.75	0.73	0.77	0.74	0.72	0.75	0.73	0.71	0.73	0.72	0.70	0.72	0.70	0.69	0.68
4	0.75	0.72	0.70	0.74	0.71	0.69	0.73	0.70	0.69	0.71	0.69	0.68	0.70	0.68	0.67	0.66
5	0.72	0.69	0.67	0.72	0.69	0.67	0.70	0.68	0.66	0.69	0.67	0.66	0.68	0.66	0.65	0.64
6	0.70	0.67	0.65	0.69	0.66	0.64	0.68	0.66	0.64	0.67	0.65	0.64	0.67	0.65	0.63	0.62
7	0.68	0.65	0.62	0.67	0.64	0.62	0.66	0.64	0.62	0.66	0.63	0.62	0.65	0.63	0.61	0.61
8	0.66	0.63	0.61	0.65	0.62	0.60	0.65	0.62	0.60	0.64	0.62	0.60	0.63	0.61	0.60	0.59
9	0.64	0.61	0.59	0.64	0.61	0.59	0.63	0.60	0.59	0.62	0.60	0.58	0.62	0.60	0.58	0.58
10	0.62	0.59	0.57	0.62	0.59	0.57	0.61	0.59	0.57	0.61	0.59	0.57	0.60	0.58	0.57	0.56

Coefficient Utilization Curve



Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/4/6
Humidity(%): 60.0%

Operator: NT07
Distance(m): 6.81

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	2665.92	2655.71	2625.55	2574.04	2506.76	2424.16	2324.39	2206.53	2074.28
45.0	2671.95	2652.00	2612.09	2553.62	2477.52	2386.57	2302.58	2156.87	2049.68
90.0	2628.80	2563.83	2481.23	2382.86	2269.63	2142.95	2003.28	1854.32	1697.02
135.0	2683.09	2641.79	2581.46	2503.97	2411.16	2303.51	2177.29	2041.79	1898.87
180.0	2665.92	2653.85	2620.44	2567.08	2496.55	2410.70	2309.08	2192.14	2061.75
225.0	2671.95	2669.63	2647.36	2604.20	2542.02	2461.28	2367.08	2257.11	2132.74
270.0	2628.80	2677.06	2705.83	2711.39	2694.22	2672.88	2596.31	2518.82	2464.53
315.0	2683.09	2703.04	2699.79	2674.74	2626.94	2560.12	2476.13	2397.24	2285.88
360.0	2665.92	2655.71	2625.55	2574.04	2506.76	2424.16	2324.39	2206.53	2074.28

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1933.21	1783.79	1659.43	1467.78	1310.01	1187.97	861.90	861.90	788.30
45.0	1905.37	1721.61	1594.93	1434.37	1277.53	1126.72	983.33	850.62	731.36
90.0	1601.89	1378.23	1222.31	1060.36	886.58	835.31	717.07	612.76	520.04
135.0	1748.06	1590.75	1430.66	1336.00	1182.87	981.01	901.20	775.91	665.47
180.0	1978.22	1773.12	1679.85	1522.54	1365.70	1212.57	1067.79	931.83	807.46
225.0	1994.00	1845.04	1690.06	1532.75	1375.91	1282.63	1066.40	895.31	870.02
270.0	2314.65	2243.18	2113.25	1973.12	1822.31	1663.61	1503.98	1346.21	1193.54
315.0	2161.05	2023.70	1876.60	1722.54	1565.23	1406.07	1249.69	915.54	889.55
360.0	1933.21	1783.79	1659.43	1467.78	1310.01	1187.97	861.90	861.90	788.30

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	677.35	579.81	495.73	423.52	354.99	293.32	233.08	182.23	135.36
45.0	625.56	532.76	452.94	380.55	315.59	256.19	245.06	245.06	123.53
90.0	440.51	368.86	303.15	243.29	188.82	140.37	99.16	63.85	35.78
135.0	567.10	481.71	406.08	339.25	275.68	241.81	241.81	118.19	78.98
180.0	695.17	596.33	509.56	434.85	364.78	299.35	262.69	262.69	146.22
225.0	752.85	648.95	556.79	477.40	406.26	340.60	279.26	219.63	167.93
270.0	1046.91	911.41	788.90	680.32	584.73	500.74	430.21	362.46	299.81
315.0	839.44	722.92	620.97	532.80	485.01	387.33	324.92	287.70	206.77
360.0	677.35	579.81	495.73	423.52	354.99	293.32	233.08	182.23	135.36

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	94.25	59.26	41.86	13.83	7.89	4.13	3.39	3.16	2.97
45.0	84.45	52.99	27.70	11.18	4.36	3.48	3.16	2.97	2.74
90.0	15.82	6.26	4.27	3.43	3.25	3.06	2.88	2.69	2.46
135.0	52.30	25.61	10.67	5.06	3.76	3.53	3.25	2.97	2.83
180.0	95.78	66.59	37.91	17.08	7.05	3.71	3.34	3.11	2.88
225.0	120.74	81.81	57.03	26.36	12.81	4.32	3.29	3.06	2.83
270.0	251.09	251.09	144.82	103.25	66.59	38.10	16.84	6.54	3.62
315.0	174.66	126.73	86.22	52.48	29.51	12.53	5.15	3.57	3.25
360.0	94.25	59.26	41.86	13.83	7.89	4.13	3.39	3.16	2.97

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	2.74	2.51	2.41	2.32	2.18	2.04	1.95	1.90	1.81
45.0	2.55	2.41	2.27	2.13	2.00	1.90	1.90	1.76	1.72
90.0	2.32	2.23	2.09	2.00	1.90	1.86	1.76	1.62	1.62
135.0	2.64	2.46	2.32	2.18	2.09	1.95	1.90	1.81	1.72
180.0	2.64	2.46	2.37	2.23	2.04	1.95	1.90	1.81	1.72
225.0	2.60	2.46	2.32	2.18	2.04	2.00	1.90	1.81	1.67
270.0	3.29	2.97	2.78	2.60	2.46	2.23	2.13	2.09	1.95
315.0	3.02	2.78	2.55	2.41	2.32	2.18	2.04	1.95	1.86
360.0	2.74	2.51	2.41	2.32	2.18	2.04	1.95	1.90	1.81

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	1.72	1.62	1.62	1.53	1.44	1.44	1.39	1.44	1.35
45.0	1.62	1.62	1.53	1.48	1.44	1.44	1.35	1.30	1.30
90.0	1.58	1.48	1.39	1.44	1.35	1.30	1.30	1.30	1.25
135.0	1.62	1.58	1.62	1.48	1.44	1.44	1.39	1.39	1.35
180.0	1.62	1.62	1.58	1.44	1.44	1.39	1.39	1.39	1.30
225.0	1.62	1.58	1.48	1.44	1.44	1.39	1.39	1.30	1.30
270.0	1.81	1.81	1.72	1.67	1.58	1.53	1.48	1.44	1.44
315.0	1.76	1.72	1.67	1.62	1.58	1.48	1.48	1.48	1.39
360.0	1.72	1.62	1.62	1.53	1.44	1.44	1.39	1.44	1.35

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	1.30	1.25	1.30	1.25	1.21	1.16	1.21	1.16	1.16
45.0	1.35	1.21	1.21	1.21	1.25	1.16	1.11	1.16	1.16
90.0	1.30	1.21	1.21	1.16	1.21	1.11	1.11	1.16	1.11
135.0	1.25	1.25	1.30	1.25	1.16	1.21	1.21	1.16	1.16
180.0	1.25	1.30	1.25	1.16	1.21	1.21	1.16	1.16	1.16
225.0	1.25	1.30	1.21	1.16	1.21	1.21	1.16	1.11	1.16
270.0	1.35	1.35	1.35	1.25	1.21	1.21	1.21	1.16	1.16
315.0	1.30	1.30	1.30	1.25	1.21	1.21	1.25	1.16	1.16
360.0	1.30	1.25	1.30	1.25	1.21	1.16	1.21	1.16	1.16

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	1.11	1.16	1.11	1.11	1.07	1.11	1.07	1.07	1.07
45.0	1.11	1.11	1.16	1.11	1.02	1.07	1.07	1.07	1.11
90.0	1.11	1.07	1.11	1.07	1.07	1.07	1.07	1.07	1.07
135.0	1.16	1.21	1.11	1.11	1.16	1.16	1.07	1.11	1.16
180.0	1.16	1.11	1.11	1.07	1.11	1.11	1.07	1.07	1.07
225.0	1.16	1.07	1.11	1.11	1.07	1.07	1.07	1.07	1.07
270.0	1.21	1.11	1.11	1.11	1.16	1.16	1.07	1.02	1.11
315.0	1.21	1.21	1.21	1.16	1.11	1.11	1.07	1.11	1.07
360.0	1.11	1.16	1.11	1.11	1.07	1.11	1.07	1.07	1.07

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	1.11	1.07	1.11	1.02	1.02	1.02	1.07	1.11	1.02
45.0	1.07	1.02	1.07	1.07	1.02	1.02	1.07	1.02	1.02
90.0	1.07	1.07	1.11	1.02	1.11	1.07	1.07	1.02	1.07
135.0	1.11	1.11	1.07	1.07	1.11	1.11	1.07	1.07	1.11
180.0	1.11	1.07	1.02	1.02	1.07	1.02	1.07	1.07	1.07
225.0	1.02	1.07	1.07	1.02	1.07	1.02	1.02	1.07	1.07
270.0	1.02	1.02	1.02	1.07	1.07	1.02	1.02	1.07	1.02
315.0	1.11	1.11	1.07	1.07	1.11	1.11	1.07	1.07	1.16
360.0	1.11	1.07	1.11	1.02	1.02	1.02	1.07	1.11	1.02

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	1.07	1.02	1.02	1.07	1.07	1.02	1.02	1.02	1.07
45.0	1.02	1.07	1.02	1.07	1.07	1.07	1.02	1.07	1.02
90.0	1.07	1.07	1.07	1.07	1.02	1.11	1.11	1.07	1.02
135.0	1.07	1.02	1.07	1.11	1.02	1.11	1.16	1.16	1.16
180.0	1.02	1.02	1.02	1.07	1.02	1.07	1.07	1.07	0.97
225.0	1.02	1.02	1.02	1.02	1.02	0.97	1.02	1.07	1.07
270.0	1.02	1.02	1.02	1.07	1.07	1.07	1.07	1.02	1.02
315.0	1.11	1.02	1.11	1.07	1.07	1.07	1.07	1.07	1.11
360.0	1.07	1.02	1.02	1.07	1.07	1.02	1.02	1.02	1.07

Intensity data(cd)

C/γ(°)	90.0
0.0	1.11
45.0	1.02
90.0	1.02
135.0	1.21
180.0	1.07
225.0	1.07
270.0	1.07
315.0	1.16
360.0	1.11