NATA LIGHTING CO.,LTD.
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Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

LumCAT: LM01D03024AE
Luminaire:
Report No: 191220-B011
Test No: 191220-C011
LampCAT: LUMINUS CXM-6-AC40
Lamp flux(lm): 861.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 34.9300
Current(A): 0.1970
Power (W): 6.8800
PF: 1.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 764.11
Efficiency(%): 88.75%
Lumens(lm)/Power(W): 111.06
Central intensity(cd): 2575.406
Maximum intensity(cd): 2575.406
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=25.5
[C90/270]Total=25.5
Field angle(10%Imax): [C0/180]Total=51.6
[C90/270]Total=51.6
Maximum s/h(1/2): C0_180=0.43 C90_270=0.43
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(%): 88.75%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 94.949%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2575.406	0.000	0	.000%	.000%
1.0	2566.828	2.460	2.46	.286%	.322%
2.0	2538.703	7.328	9.788	.851%	1.281%
3.0	2499.188	12.049	21.837	1.399%	2.858%
4.0	2447.789	16.559	38.396	1.923%	5.025%
5.0	2369.883	20.725	59.122	2.407%	7.737%
6.0	2277.422	24.423	83.545	2.837%	10.934%
7.0	2165.695	27.578	111.123	3.203%	14.543%
8.0	2033.719	30.054	141.177	3.491%	18.476%
9.0	1885.922	31.767	172.944	3.689%	22.633%
10.0	1731.586	32.737	205.681	3.802%	26.918%
11.0	1570.922	32.999	238.68	3.833%	31.236%
12.0	1400.681	32.484	271.164	3.773%	35.488%
13.0	1246.254	31.412	302.576	3.648%	39.599%
14.0	1106.423	30.114	332.69	3.498%	43.540%
15.0	986.077	28.727	361.417	3.336%	47.299%
16.0	875.630	27.279	388.696	3.168%	50.869%
17.0	768.853	25.609	414.305	2.974%	54.221%
18.0	675.429	23.813	438.118	2.766%	57.337%
19.0	601.889	22.223	460.341	2.581%	60.246%
20.0	528.483	20.689	481.03	2.403%	62.953%
21.0	465.054	19.078	500.108	2.216%	65.450%
22.0	412.952	17.644	517.752	2.049%	67.759%
23.0	363.227	16.286	534.038	1.892%	69.890%
24.0	320.681	14.953	548.991	1.737%	71.847%
25.0	284.688	13.765	562.756	1.599%	73.649%
26.0	251.227	12.650	575.406	1.469%	75.304%
27.0	226.470	11.687	587.093	1.357%	76.834%
28.0	197.466	10.733	597.826	1.247%	78.238%
29.0	175.205	9.750	607.576	1.132%	79.514%
30.0	156.607	8.959	616.535	1.041%	80.687%
31.0	140.273	8.262	624.797	.960%	81.768%
32.0	125.227	7.606	632.403	.883%	82.764%
33.0	112.662	7.008	639.411	.814%	83.681%
34.0	101.630	6.485	645.896	.753%	84.530%
35.0	91.659	6.003	651.899	.697%	85.315%
36.0	82.470	5.544	657.444	.644%	86.041%
37.0	75.382	5.148	662.592	.598%	86.714%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	68.505	4.803	667.395	.558%	87.343%
39.0	62.107	4.458	671.853	.518%	87.926%
40.0	57.157	4.160	676.012	.483%	88.471%
41.0	52.411	3.902	679.914	.453%	88.981%
42.0	47.791	3.641	683.555	.423%	89.458%
43.0	44.191	3.407	686.962	.396%	89.904%
44.0	41.133	3.220	690.182	.374%	90.325%
45.0	38.067	3.044	693.226	.354%	90.724%
46.0	35.585	2.880	696.106	.335%	91.101%
47.0	33.279	2.739	698.845	.318%	91.459%
48.0	31.212	2.607	701.452	.303%	91.800%
49.0	29.313	2.485	703.938	.289%	92.125%
50.0	27.408	2.365	706.303	.275%	92.435%
51.0	25.784	2.250	708.553	.261%	92.729%
52.0	24.546	2.160	710.713	.251%	93.012%
53.0	23.252	2.079	712.792	.241%	93.284%
54.0	22.078	1.998	714.79	.232%	93.546%
55.0	21.171	1.931	716.721	.224%	93.798%
56.0	20.180	1.869	718.589	.217%	94.043%
57.0	19.336	1.807	720.396	.210%	94.279%
58.0	18.577	1.753	722.149	.204%	94.509%
59.0	17.888	1.705	723.854	.198%	94.732%
60.0	17.177	1.657	725.51	.192%	94.949%
61.0	16.608	1.612	727.123	.187%	95.160%
62.0	16.088	1.575	728.698	.183%	95.366%
63.0	15.525	1.537	730.236	.179%	95.567%
64.0	14.998	1.498	731.733	.174%	95.763%
65.0	14.498	1.460	733.193	.170%	95.954%
66.0	14.077	1.426	734.619	.166%	96.141%
67.0	13.648	1.394	736.013	.162%	96.323%
68.0	13.254	1.363	737.376	.158%	96.502%
69.0	12.832	1.331	738.706	.155%	96.676%
70.0	12.495	1.301	740.007	.151%	96.846%
71.0	12.129	1.273	741.28	.148%	97.012%
72.0	11.805	1.245	742.524	.145%	97.175%
73.0	11.552	1.221	743.746	.142%	97.335%
74.0	11.391	1.206	744.952	.140%	97.493%
75.0	11.313	1.200	746.151	.139%	97.650%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	11.391	1.205	747.357	.140%	97.808%
77.0	11.573	1.224	748.581	.142%	97.968%
78.0	11.862	1.255	749.836	.146%	98.132%
79.0	12.213	1.294	751.129	.150%	98.301%
80.0	12.600	1.338	752.467	.155%	98.477%
81.0	12.916	1.380	753.847	.160%	98.657%
82.0	13.170	1.415	755.261	.164%	98.842%
83.0	13.226	1.435	756.696	.167%	99.030%
84.0	12.966	1.427	758.123	.166%	99.217%
85.0	11.728	1.348	759.471	.157%	99.393%
86.0	10.751	1.229	760.699	.143%	99.554%
87.0	9.464	1.106	761.806	.128%	99.699%
88.0	7.432	0.926	762.731	.107%	99.820%
89.0	6.209	0.748	763.479	.087%	99.918%
90.0	5.259	0.629	764.108	.073%	100.000%

Zonal flux distribution table

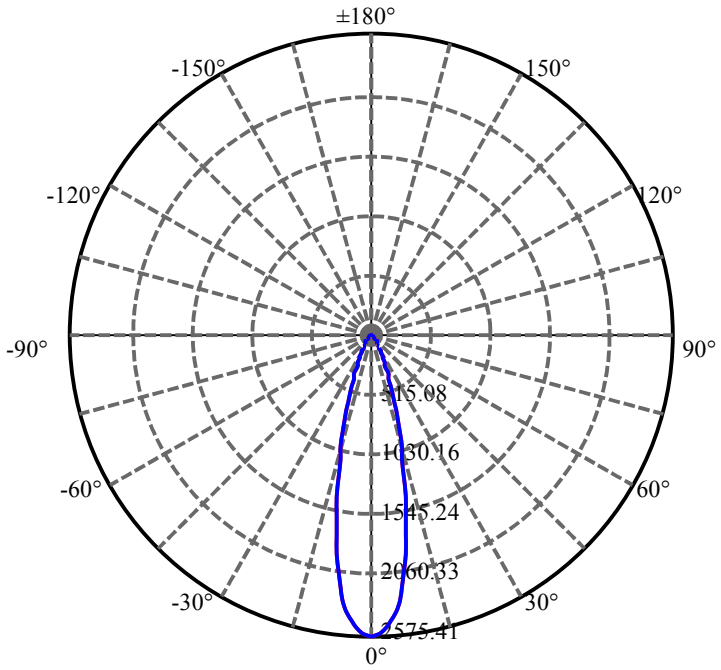
ZONAL LUMEN SUMMARY

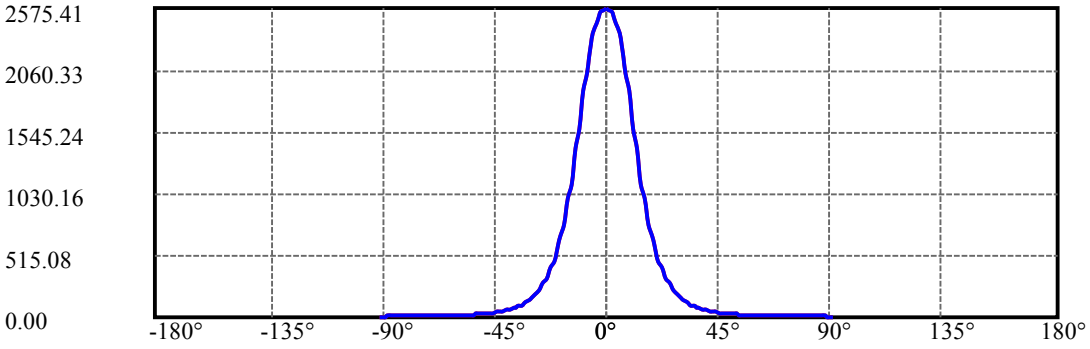
Zone	Lumens	%Lamp	%Fixt
0-30	616.54	71.61%	80.69%
0-40	676.01	78.51%	88.47%
0-60	725.51	84.26%	94.95%
0-90	763.48	88.67%	99.92%
0-120	763.48	88.67%	99.92%
0-180	764.11	88.75%	100.00%
60-90	39.63	4.60%	5.19%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-29.41	611.29	71.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	205.68
10-20	275.35
20-30	135.51
30-40	59.48
40-50	30.29
50-60	19.21
60-70	14.50
70-80	12.46
80-90	11.01
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/C180:

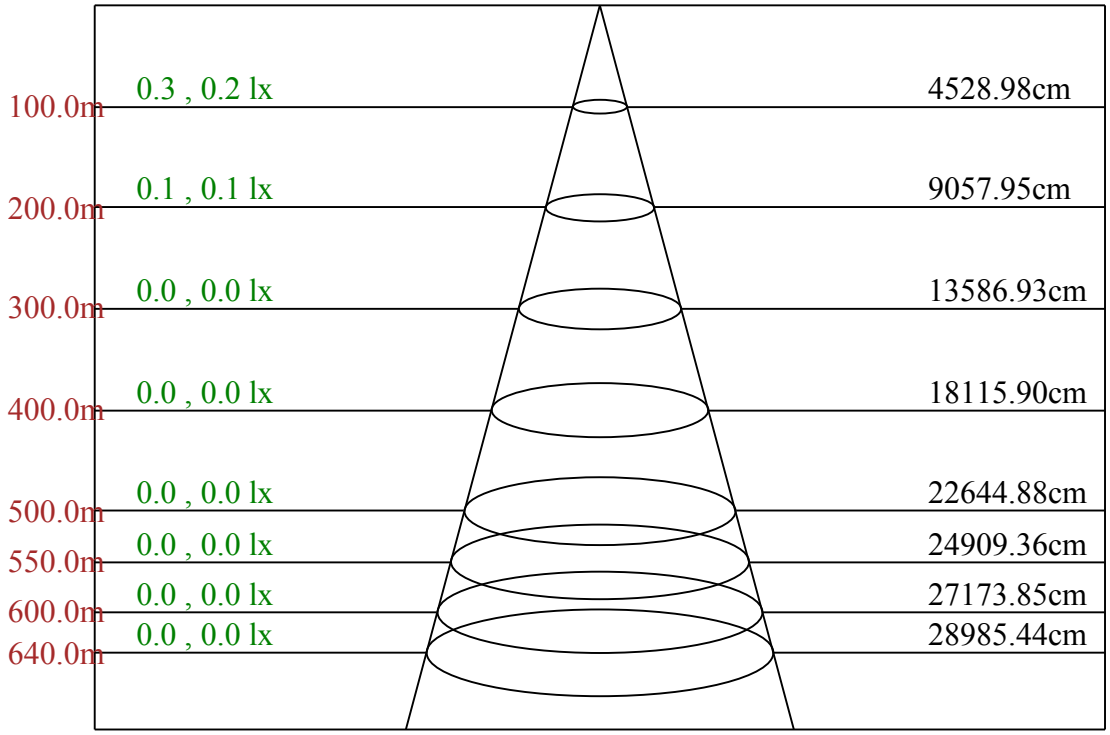
C90/C270:

Field angle(10%Imax):C0/180Left:25.8 Right:25.8
:C90/270Left:25.8 Right:25.8

Beam Angle(50%Imax):C0/180Left:12.7 Right:12.7
:C90/270Left:12.7 Right:12.7

Equipment: GMS1980	Date: 2019/12/20	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.50

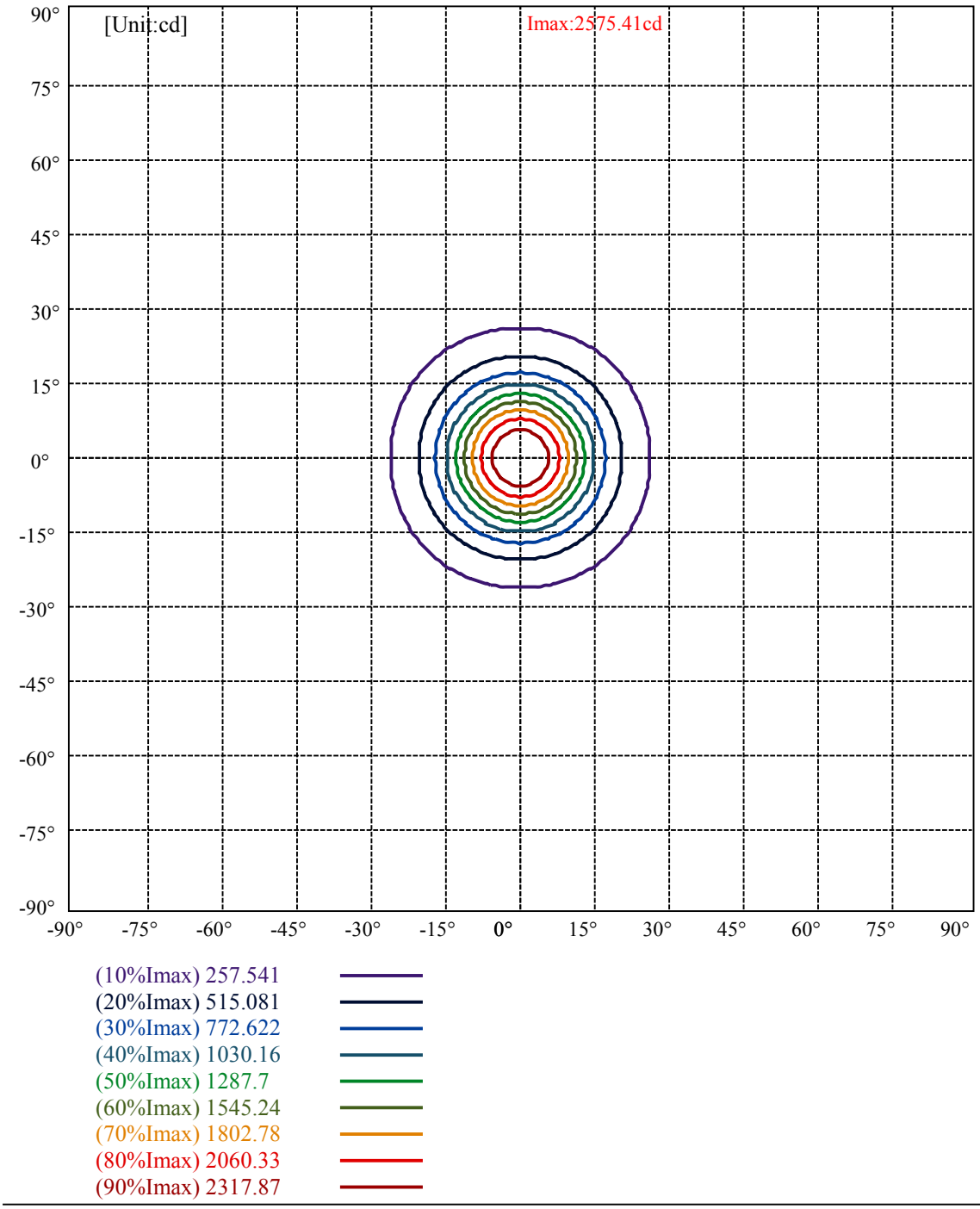
Lux distance Curve



Max , Ave

Beam angle of C0 plane 25.52

ISO-Intensity(V-H)

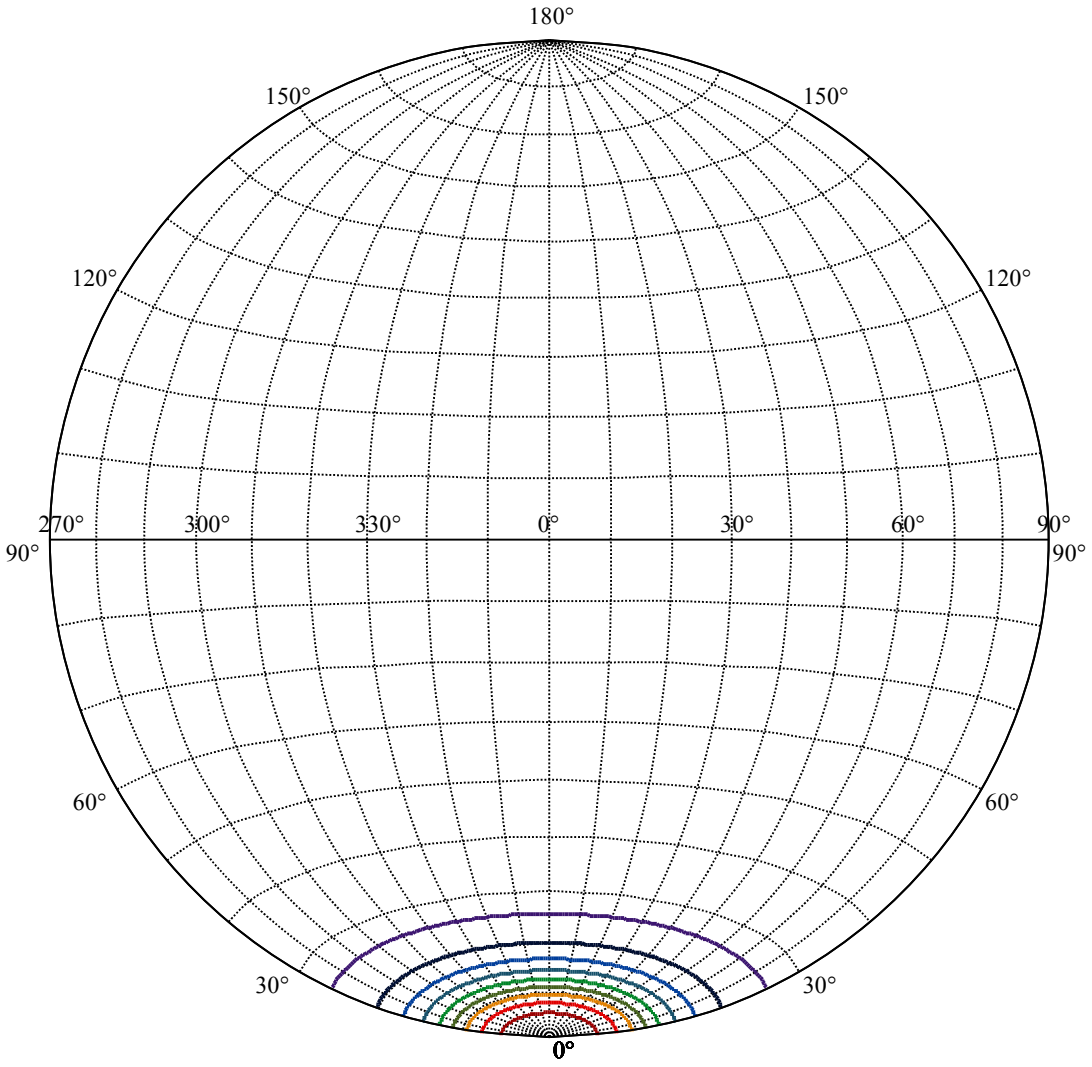


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/20
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

ISO candela diagram on circular web



House [Unit:cd] Road

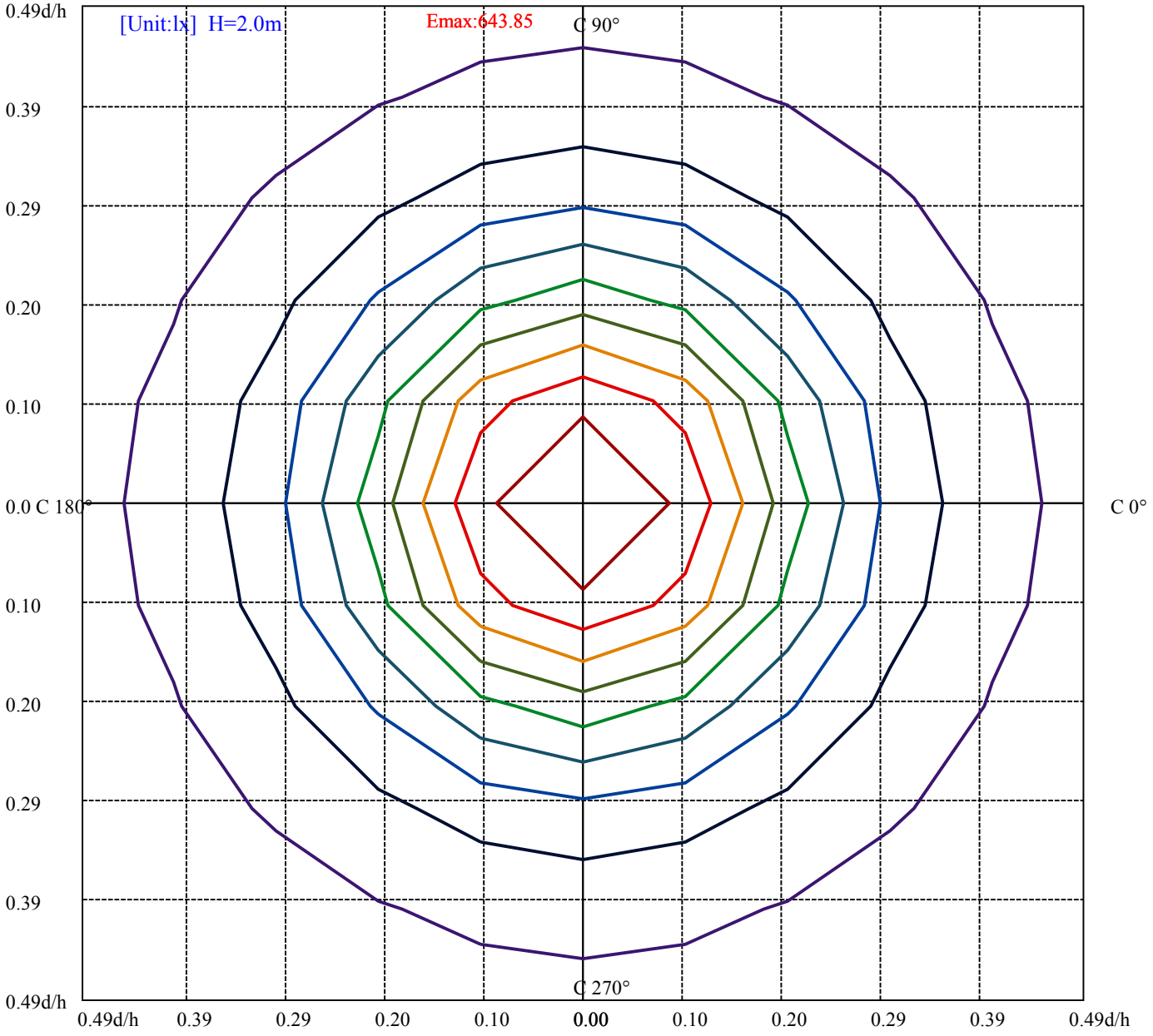
Imax:2575.41

(10%Imax) 257.541
(20%Imax) 515.081
(30%Imax) 772.622
(40%Imax) 1030.16
(50%Imax) 1287.7
(60%Imax) 1545.24
(70%Imax) 1802.78
(80%Imax) 2060.33
(90%Imax) 2317.87

Equipment: GMS1980 Date: 2019/12/20 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

LM01D03024AE

ISO illuminance diagram



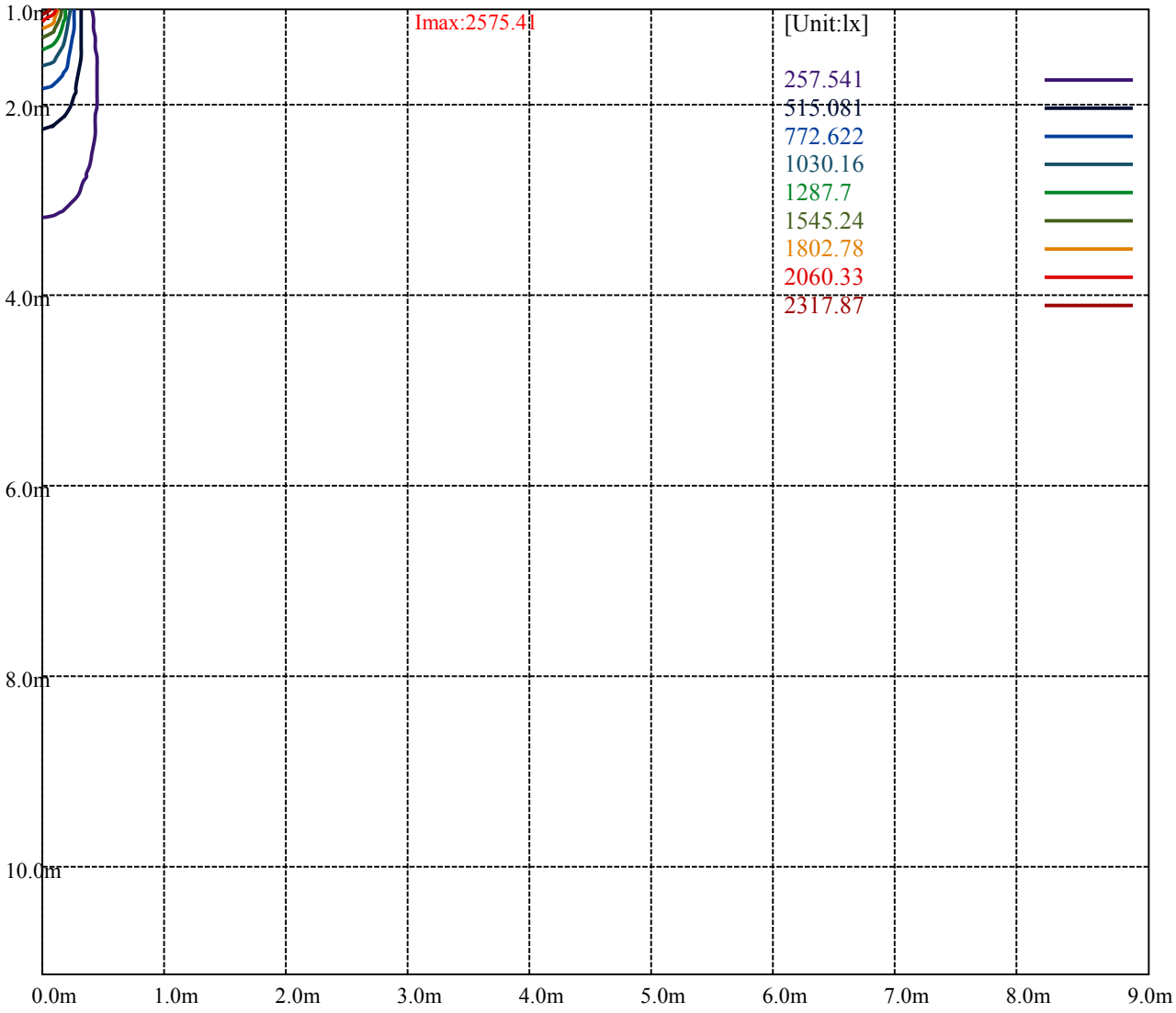
(10%Emax) 64.38525
(20%Emax) 128.7702
(30%Emax) 193.1555
(40%Emax) 257.54
(50%Emax) 321.925
(60%Emax) 386.31
(70%Emax) 450.695
(80%Emax) 515.08
(90%Emax) 579.465

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/20
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2019/12/20
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

Luminance Limitting Curve(no luminous side)

Luminance Table

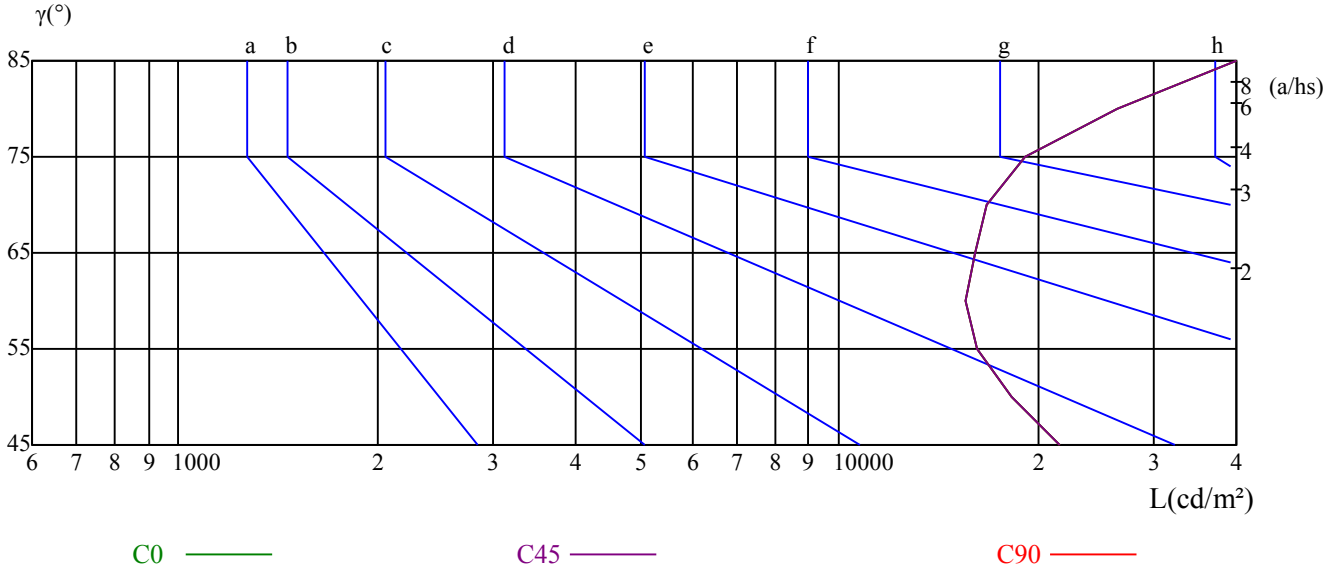
γ	45	50	55	60	65	70	75	80	85
C0	21624	18225	16151	15566	16040	16715	19094	26443	52093
C45	21624	18225	16151	15566	16040	16715	19094	26443	52093
C90	21624	18225	16151	15566	16040	16715	19094	26443	52093

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
16040	16040	16040	19094	19094	19094	52093	52093	52093

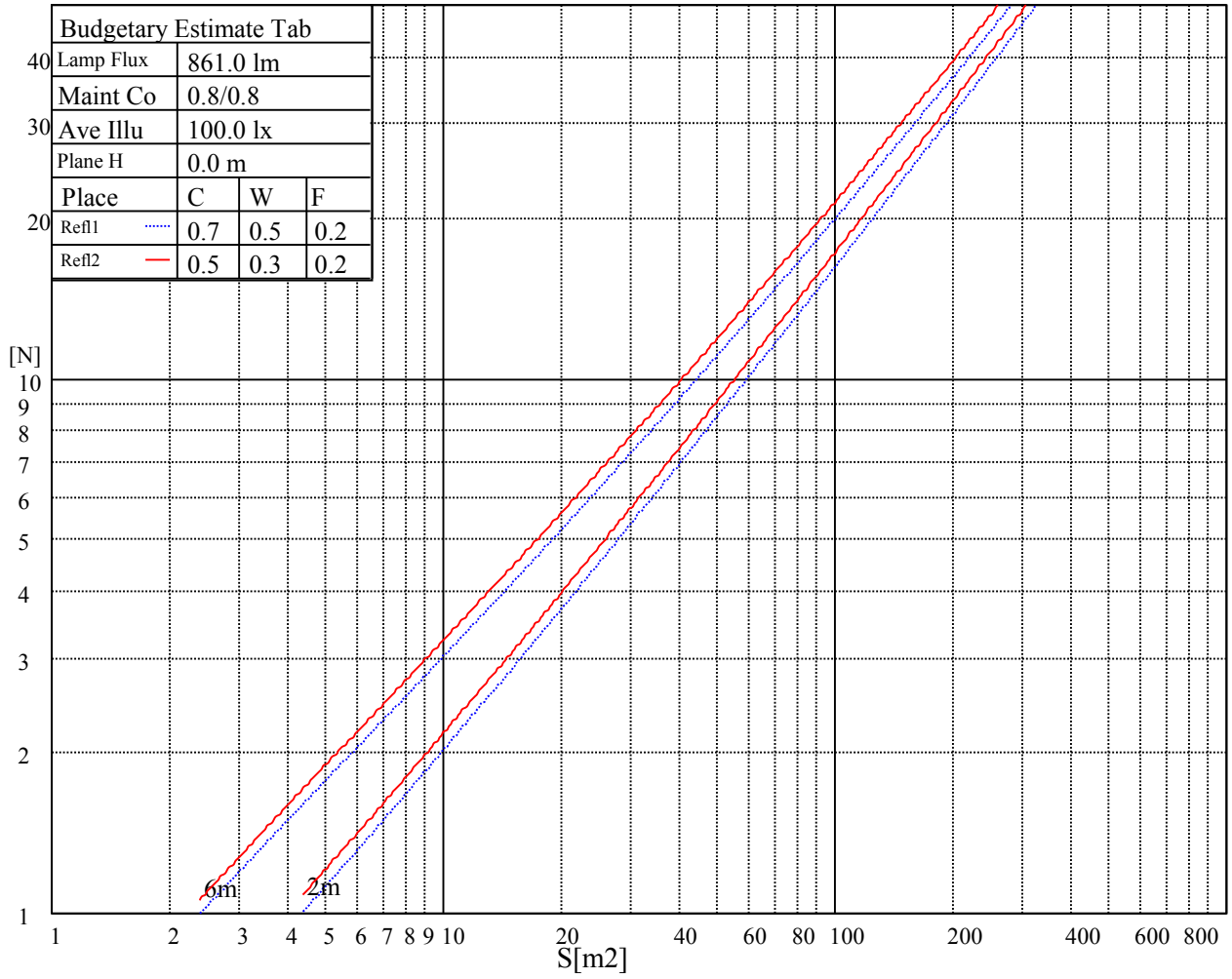
Glare Table

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

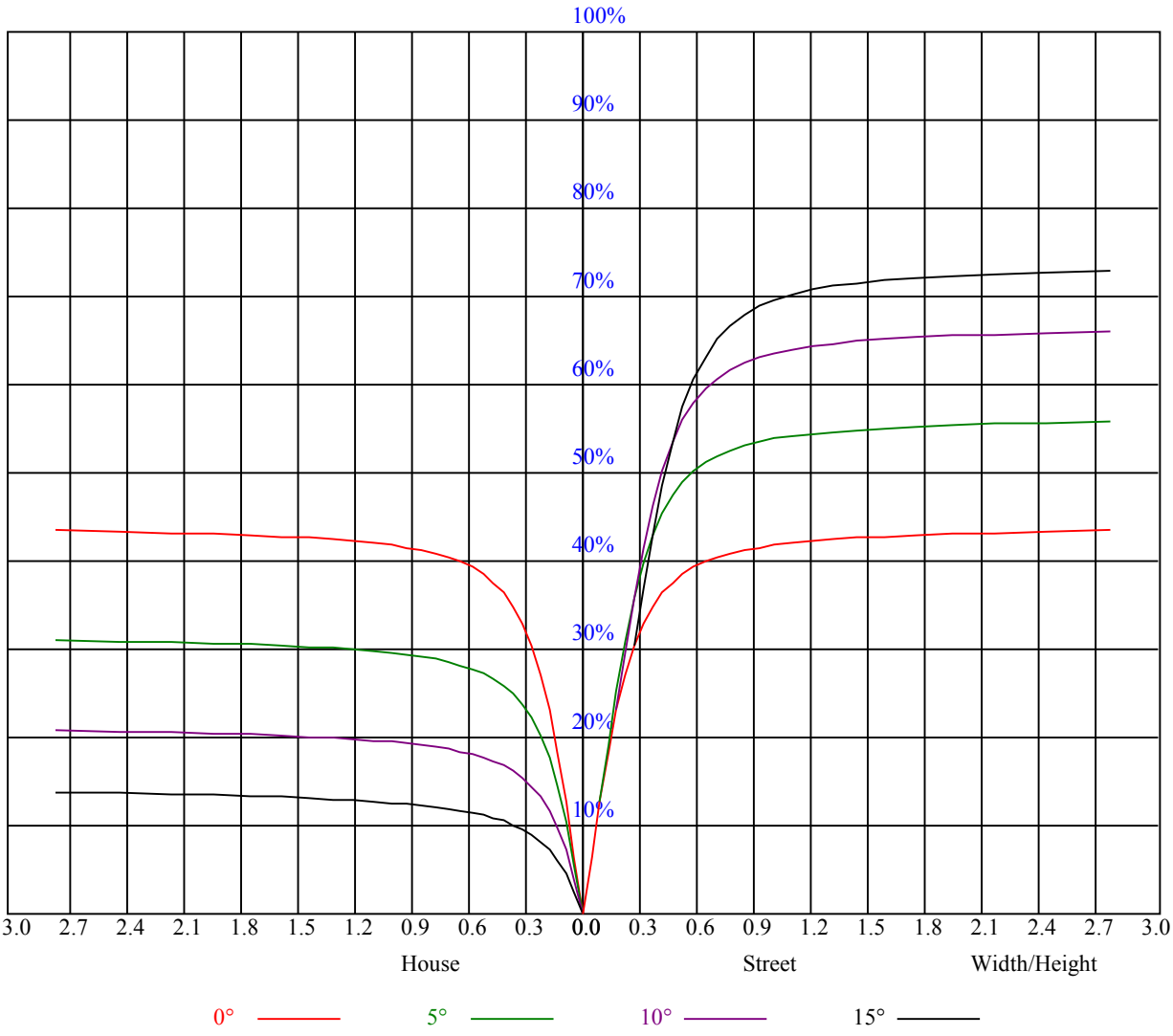


Equipment: GMS1980 Date: 2019/12/20 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.50

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	1.06	1.06	1.06	1.03	1.03	1.03	0.99	0.99	0.99	0.94	0.94	0.94	0.91	0.91	0.91	0.89
1	0.98	0.96	0.94	0.96	0.94	0.92	0.92	0.91	0.89	0.89	0.88	0.87	0.86	0.85	0.84	0.83
2	0.92	0.88	0.85	0.90	0.87	0.84	0.87	0.85	0.83	0.85	0.83	0.81	0.82	0.81	0.79	0.78
3	0.87	0.82	0.79	0.85	0.82	0.79	0.83	0.80	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.74
4	0.82	0.78	0.74	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.72	0.76	0.73	0.71	0.70
5	0.78	0.74	0.70	0.77	0.73	0.70	0.76	0.72	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.67
6	0.75	0.70	0.67	0.74	0.70	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.70	0.67	0.65	0.64
7	0.72	0.67	0.64	0.71	0.67	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.61
8	0.69	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
9	0.66	0.62	0.59	0.66	0.61	0.59	0.65	0.61	0.58	0.64	0.61	0.58	0.64	0.60	0.58	0.57
10	0.64	0.59	0.57	0.63	0.59	0.57	0.63	0.59	0.56	0.62	0.59	0.56	0.62	0.58	0.56	0.55

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2019/12/20	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	2566.13	2583.00	2584.13	2571.75	2549.25	2490.19	2431.69	2368.13	2257.88
45.0	2574.56	2584.69	2581.31	2565.00	2536.31	2495.81	2407.50	2329.31	2248.88
90.0	2579.63	2568.38	2540.81	2502.56	2453.63	2375.44	2289.38	2169.00	2026.13
135.0	2581.31	2564.44	2525.63	2481.19	2425.50	2331.00	2233.13	2113.31	1959.75
180.0	2566.13	2535.19	2480.63	2407.50	2331.56	2226.38	2110.50	1957.50	1787.06
225.0	2574.56	2544.19	2491.31	2430.56	2344.50	2251.69	2129.63	1986.19	1841.06
270.0	2579.63	2575.69	2546.44	2507.06	2455.31	2370.38	2280.38	2172.38	2048.63
315.0	2581.31	2579.06	2559.38	2527.88	2486.25	2418.19	2337.19	2229.75	2100.38
360.0	2566.13	2583.00	2584.13	2571.75	2549.25	2490.19	2431.69	2368.13	2257.88

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2135.81	2026.13	1853.44	1710.56	1565.44	1382.06	1242.00	1111.50	963.56
45.0	2099.25	1964.25	1834.31	1642.50	1470.94	1342.69	1168.31	1044.56	931.50
90.0	1883.81	1715.63	1541.81	1387.69	1098.11	1065.38	944.38	838.91	734.12
135.0	1798.88	1647.00	1470.38	1316.25	1151.44	1005.19	891.00	782.44	685.69
180.0	1634.06	1460.81	1294.31	1120.50	1027.58	902.70	794.19	711.39	636.92
225.0	1692.00	1499.63	1348.31	1118.70	1054.97	926.10	825.13	735.53	638.33
270.0	1875.94	1730.25	1582.31	1414.13	1252.69	1116.56	974.81	849.38	750.94
315.0	1967.63	1809.00	1642.50	1495.13	1348.88	1110.71	1048.78	931.33	809.78
360.0	2135.81	2026.13	1853.44	1710.56	1565.44	1382.06	1242.00	1111.50	963.56

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	858.94	768.38	668.25	595.13	530.44	457.88	406.13	360.56	316.69
45.0	807.19	720.00	644.06	559.13	491.63	441.56	378.00	334.69	296.44
90.0	640.80	567.79	494.83	429.92	378.00	326.42	286.03	246.60	212.63
135.0	609.19	541.69	469.13	415.69	365.63	317.25	284.63	247.89	221.29
180.0	553.22	494.78	443.81	388.13	349.14	314.89	281.42	251.89	228.09
225.0	572.85	514.86	457.37	407.14	366.98	327.66	293.91	267.30	239.79
270.0	655.88	582.75	504.56	449.44	400.50	352.69	310.50	285.75	247.50
315.0	705.38	624.88	545.85	475.88	421.31	367.48	324.84	282.83	247.39
360.0	858.94	768.38	668.25	595.13	530.44	457.88	406.13	360.56	316.69

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	285.75	245.42	216.45	195.13	174.83	156.99	142.76	128.36	115.31
45.0	287.44	222.92	197.44	172.74	151.82	135.62	120.32	108.39	96.75
90.0	186.41	163.91	139.50	123.41	109.24	94.39	83.93	74.93	66.71
135.0	193.11	173.42	155.64	137.70	121.73	109.80	97.93	87.19	79.09
180.0	204.19	185.12	165.38	147.94	134.49	121.22	109.80	100.46	92.14
225.0	217.41	195.24	176.40	160.65	146.14	129.99	118.35	107.94	96.69
270.0	216.51	195.53	176.68	157.44	140.79	127.24	113.51	101.31	91.52
315.0	220.95	198.17	174.15	157.84	143.16	126.56	114.69	104.46	95.06
360.0	285.75	245.42	216.45	195.13	174.83	156.99	142.76	128.36	115.31

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	103.84	93.71	82.86	75.60	69.24	61.93	55.24	50.57	46.35
45.0	85.95	77.91	71.04	63.56	58.05	52.76	46.91	42.86	39.60
90.0	59.51	54.51	49.33	44.66	41.01	37.74	35.21	32.96	31.11
135.0	71.38	65.48	59.79	54.90	50.85	47.14	43.20	40.67	38.42
180.0	83.08	76.56	70.37	63.79	58.89	54.45	50.01	45.84	42.58
225.0	88.65	81.45	74.19	67.61	62.61	57.49	53.33	49.22	45.45
270.0	82.24	74.93	68.12	62.10	57.26	53.16	48.49	45.34	42.58
315.0	85.11	78.53	72.34	64.63	59.34	54.62	49.95	46.07	42.98
360.0	103.84	93.71	82.86	75.60	69.24	61.93	55.24	50.57	46.35

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	42.08	39.15	36.11	33.36	30.49	28.07	26.33	25.09	23.51
45.0	36.34	33.41	31.39	29.36	27.68	25.99	24.36	23.34	21.99
90.0	29.59	28.13	26.49	25.31	24.19	22.78	21.71	20.76	19.80
135.0	35.72	33.98	32.40	30.71	29.08	27.73	26.38	25.26	24.02
180.0	39.43	36.96	34.37	32.06	30.09	28.13	26.33	24.98	23.79
225.0	42.19	38.81	35.72	33.36	31.33	28.69	27.00	25.43	23.91
270.0	39.38	36.96	34.93	33.02	30.88	28.91	26.83	25.59	24.24
315.0	39.83	37.29	34.82	32.51	30.77	28.97	27.34	25.93	24.75
360.0	42.08	39.15	36.11	33.36	30.49	28.07	26.33	25.09	23.51

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	22.50	21.60	20.53	19.86	19.13	18.34	17.61	17.04	16.43
45.0	20.81	20.08	19.29	18.45	17.83	17.16	16.48	15.98	15.58
90.0	18.96	18.28	17.44	16.93	16.31	15.75	15.24	14.96	14.63
135.0	23.01	22.05	21.04	20.08	19.35	18.79	17.89	17.33	16.88
180.0	22.50	21.60	20.70	19.74	18.96	18.17	17.49	16.82	16.26
225.0	22.44	21.43	20.31	19.35	18.51	17.83	17.21	16.54	15.81
270.0	23.01	21.88	20.76	19.86	19.01	18.28	17.44	16.82	16.31
315.0	23.40	22.44	21.38	20.42	19.52	18.79	18.06	17.38	16.82
360.0	22.50	21.60	20.53	19.86	19.13	18.34	17.61	17.04	16.43

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	15.98	15.41	14.85	14.46	13.89	13.50	13.16	12.88	12.43
45.0	15.08	14.57	14.23	13.78	13.39	13.05	12.71	12.43	12.15
90.0	14.23	13.84	13.39	13.11	12.77	12.43	12.09	11.87	11.64
135.0	16.09	15.47	14.96	14.40	13.89	13.56	12.94	12.49	12.04
180.0	15.64	15.13	14.57	14.06	13.61	13.22	12.77	12.49	12.15
225.0	15.24	14.68	14.18	13.84	13.50	12.99	12.60	12.32	11.98
270.0	15.69	15.13	14.63	14.29	13.84	13.44	13.05	12.60	12.15
315.0	16.26	15.75	15.19	14.68	14.29	13.84	13.33	12.88	12.49
360.0	15.98	15.41	14.85	14.46	13.89	13.50	13.16	12.88	12.43

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	12.15	11.93	12.15	12.60	13.22	13.95	14.85	15.58	16.31
45.0	11.87	11.64	11.53	11.64	11.93	12.26	12.77	13.44	13.89
90.0	11.48	11.31	11.08	10.97	10.91	10.91	10.86	10.91	11.03
135.0	11.53	11.14	10.80	10.41	10.18	10.01	9.90	9.90	9.84
180.0	11.81	11.53	11.31	11.19	11.48	12.09	12.99	13.67	14.40
225.0	11.76	11.64	11.59	11.59	11.70	11.87	12.26	12.94	13.89
270.0	11.81	11.53	11.31	11.03	10.86	10.80	10.74	10.80	10.97
315.0	12.04	11.70	11.36	11.08	10.86	10.69	10.52	10.46	10.46
360.0	12.15	11.93	12.15	12.60	13.22	13.95	14.85	15.58	16.31

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	16.99	17.61	17.94	18.00	17.72	17.04	15.69	9.56	8.04
45.0	14.40	15.08	15.58	15.86	15.92	14.96	13.33	9.17	7.14
90.0	11.08	11.08	11.08	10.97	10.69	10.01	8.44	6.75	6.36
135.0	10.01	10.07	9.96	9.73	9.23	8.72	7.31	6.69	6.53
180.0	14.85	14.96	14.68	13.16	9.06	7.03	6.81	6.75	4.33
225.0	14.46	14.91	14.91	13.73	9.79	8.16	6.92	6.53	4.73
270.0	10.97	10.86	10.80	11.48	10.97	10.07	8.04	6.47	6.13
315.0	10.58	10.80	10.86	10.80	10.46	10.01	9.17	7.54	6.41
360.0	16.99	17.61	17.94	18.00	17.72	17.04	15.69	9.56	8.04

Intensity data(cd)

C/γ(°)	90.0
0.0	6.64
45.0	6.47
90.0	6.13
135.0	4.50
180.0	3.66
225.0	3.66
270.0	4.84
315.0	6.19
360.0	6.64