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Nata

LumCAT: 1-0919-M
Luminaire: 99.02.73.179+92.76.853.00

Report No: 220608-B011	Voltage(V): 38.5100
Test No: 220608-C011	Current(A): 0.3610
LampCAT: CREE CXA1507	Power (W): 13.9020
Lamp flux(lm): 1084.9	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 43	Width(mm): 43
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 778.54
Efficiency(%): 71.76%
Lumens(lm)/Power(W): 56.00
Central intensity(cd): 4726.753
Maximum intensity(cd): 4726.753
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=21.3
[C90/270]Total=21.3
Field angle(10%Imax): [C0/180]Total=40.5
[C90/270]Total=40.5
Maximum s/h(1/2): C0_180=0.36 C90_270=0.36
Maximum s/h(1/4): C0_180=0.37 C90_270=0.37
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 71.76%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.550%

Equipment: GMS1980	Date: 2022/6/08	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.73

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4726.753	0.000	0	.000%	.000%
1.0	4704.495	4.513	4.513	.416%	.580%
2.0	4621.065	13.385	17.898	1.234%	2.299%
3.0	4496.555	21.806	39.704	2.010%	5.100%
4.0	4333.430	29.557	69.261	2.724%	8.896%
5.0	4107.340	36.312	105.572	3.347%	13.560%
6.0	3841.589	41.774	147.346	3.850%	18.926%
7.0	3566.576	45.982	193.329	4.238%	24.832%
8.0	3242.491	48.731	242.06	4.492%	31.091%
9.0	2910.863	49.870	291.929	4.597%	37.497%
10.0	2581.176	49.701	341.63	4.581%	43.881%
11.0	2245.887	48.232	389.863	4.446%	50.076%
12.0	1948.691	45.853	435.715	4.226%	55.965%
13.0	1664.835	42.883	478.599	3.953%	61.474%
14.0	1424.576	39.544	518.143	3.645%	66.553%
15.0	1221.402	36.325	554.468	3.348%	71.219%
16.0	1036.675	33.087	587.555	3.050%	75.469%
17.0	879.144	29.834	617.39	2.750%	79.301%
18.0	740.704	26.708	644.098	2.462%	82.731%
19.0	621.535	23.700	667.798	2.185%	85.775%
20.0	498.421	20.498	688.296	1.889%	88.408%
21.0	387.602	17.013	705.309	1.568%	90.593%
22.0	304.232	13.903	719.212	1.281%	92.379%
23.0	215.424	10.904	730.116	1.005%	93.780%
24.0	154.065	8.078	738.194	.745%	94.817%
25.0	97.323	5.716	743.91	.527%	95.552%
26.0	62.248	3.767	747.677	.347%	96.035%
27.0	37.741	2.446	750.123	.225%	96.350%
28.0	23.677	1.555	751.678	.143%	96.549%
29.0	17.903	1.088	752.766	.100%	96.689%
30.0	14.819	0.883	753.65	.081%	96.802%
31.0	12.974	0.773	754.423	.071%	96.902%
32.0	11.622	0.705	755.128	.065%	96.992%
33.0	10.629	0.656	755.783	.060%	97.077%
34.0	9.814	0.619	756.402	.057%	97.156%
35.0	8.993	0.584	756.986	.054%	97.231%
36.0	8.365	0.553	757.539	.051%	97.302%
37.0	7.828	0.528	758.067	.049%	97.370%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	7.342	0.506	758.573	.047%	97.435%
39.0	6.857	0.485	759.058	.045%	97.497%
40.0	6.513	0.466	759.524	.043%	97.557%
41.0	6.192	0.452	759.976	.042%	97.615%
42.0	5.901	0.439	760.416	.040%	97.672%
43.0	5.639	0.427	760.843	.039%	97.726%
44.0	5.400	0.417	761.26	.038%	97.780%
45.0	5.206	0.408	761.668	.038%	97.832%
46.0	5.019	0.400	762.067	.037%	97.884%
47.0	4.877	0.394	762.461	.036%	97.934%
48.0	4.720	0.388	762.849	.036%	97.984%
49.0	4.608	0.383	763.232	.035%	98.033%
50.0	4.467	0.378	763.61	.035%	98.082%
51.0	4.354	0.373	763.984	.034%	98.130%
52.0	4.272	0.370	764.354	.034%	98.177%
53.0	4.198	0.368	764.722	.034%	98.225%
54.0	4.108	0.366	765.088	.034%	98.272%
55.0	4.041	0.364	765.452	.034%	98.318%
56.0	3.981	0.362	765.815	.033%	98.365%
57.0	3.914	0.361	766.176	.033%	98.411%
58.0	3.876	0.360	766.536	.033%	98.458%
59.0	3.832	0.360	766.896	.033%	98.504%
60.0	3.802	0.361	767.257	.033%	98.550%
61.0	3.749	0.360	767.617	.033%	98.597%
62.0	3.735	0.361	767.978	.033%	98.643%
63.0	3.682	0.361	768.339	.033%	98.689%
64.0	3.675	0.361	768.7	.033%	98.736%
65.0	3.645	0.362	769.062	.033%	98.782%
66.0	3.645	0.364	769.426	.034%	98.829%
67.0	3.600	0.364	769.79	.034%	98.876%
68.0	3.593	0.364	770.154	.034%	98.922%
69.0	3.585	0.366	770.52	.034%	98.969%
70.0	3.570	0.367	770.888	.034%	99.017%
71.0	3.563	0.369	771.257	.034%	99.064%
72.0	3.555	0.370	771.627	.034%	99.112%
73.0	3.548	0.371	771.998	.034%	99.159%
74.0	3.608	0.376	772.374	.035%	99.208%
75.0	3.637	0.383	772.757	.035%	99.257%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.690	0.389	773.146	.036%	99.307%
77.0	3.727	0.395	773.541	.036%	99.357%
78.0	3.757	0.401	773.942	.037%	99.409%
79.0	3.749	0.403	774.345	.037%	99.461%
80.0	3.690	0.401	774.746	.037%	99.512%
81.0	3.615	0.395	775.141	.036%	99.563%
82.0	3.637	0.393	775.535	.036%	99.614%
83.0	3.637	0.395	775.93	.036%	99.664%
84.0	3.667	0.398	776.328	.037%	99.715%
85.0	3.615	0.397	776.726	.037%	99.766%
86.0	3.369	0.382	777.107	.035%	99.816%
87.0	3.257	0.363	777.47	.033%	99.862%
88.0	3.264	0.357	777.827	.033%	99.908%
89.0	3.279	0.359	778.186	.033%	99.954%
90.0	3.249	0.358	778.544	.033%	100.000%

Zonal flux distribution table

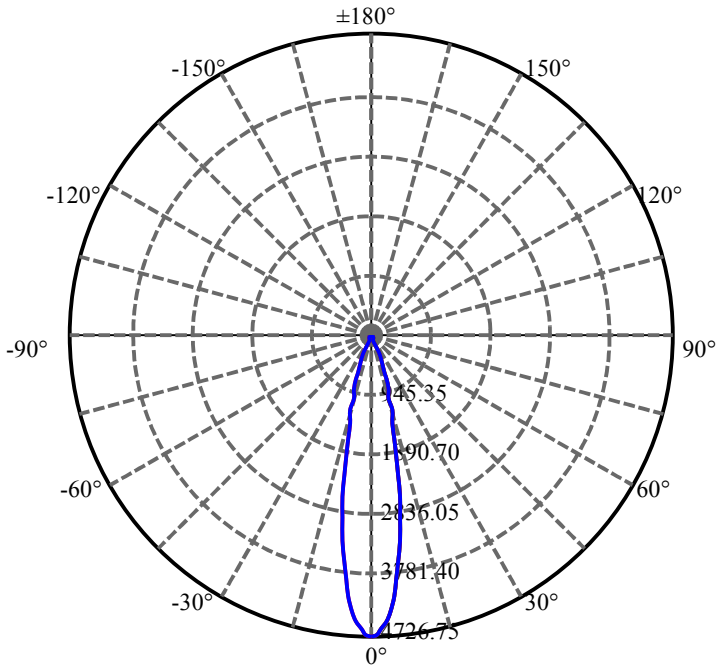
ZONAL LUMEN SUMMARY

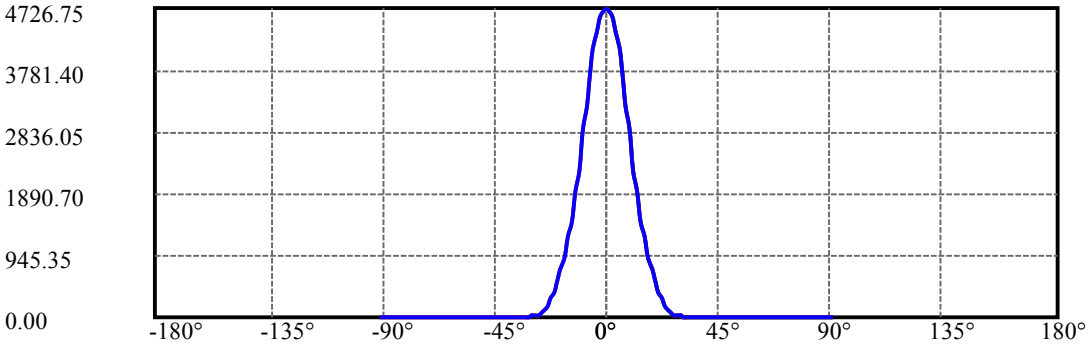
Zone	Lumens	%Lamp	%Fixt
0-30	753.65	69.47%	96.80%
0-40	759.52	70.01%	97.56%
0-60	767.26	70.72%	98.55%
0-90	778.19	71.73%	99.95%
0-120	778.19	71.73%	99.95%
0-180	778.54	71.76%	100.00%
60-90	11.29	1.04%	1.45%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-17.20	622.84	57.41%	80.00%

ZONAL LUMEN SUMMARY

0-10	341.63
10-20	346.67
20-30	65.35
30-40	5.87
40-50	4.09
50-60	3.65
60-70	3.63
70-80	3.86
80-90	3.44
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):

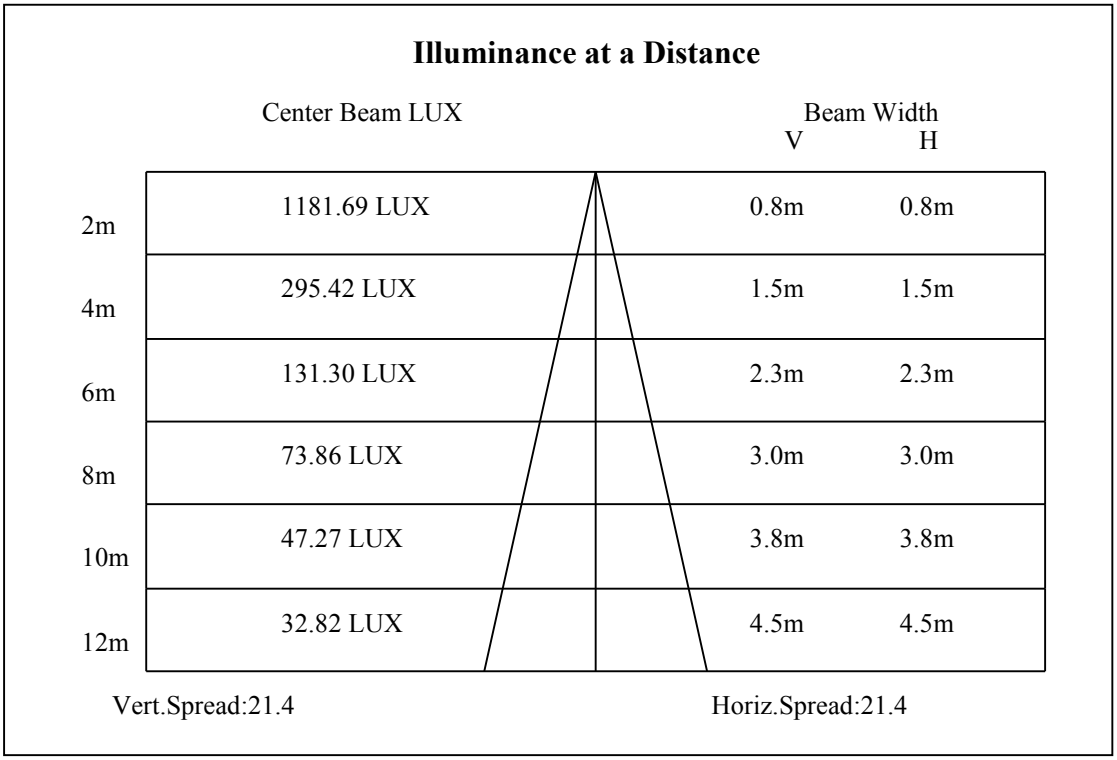
C0/C180:

C90/C270:

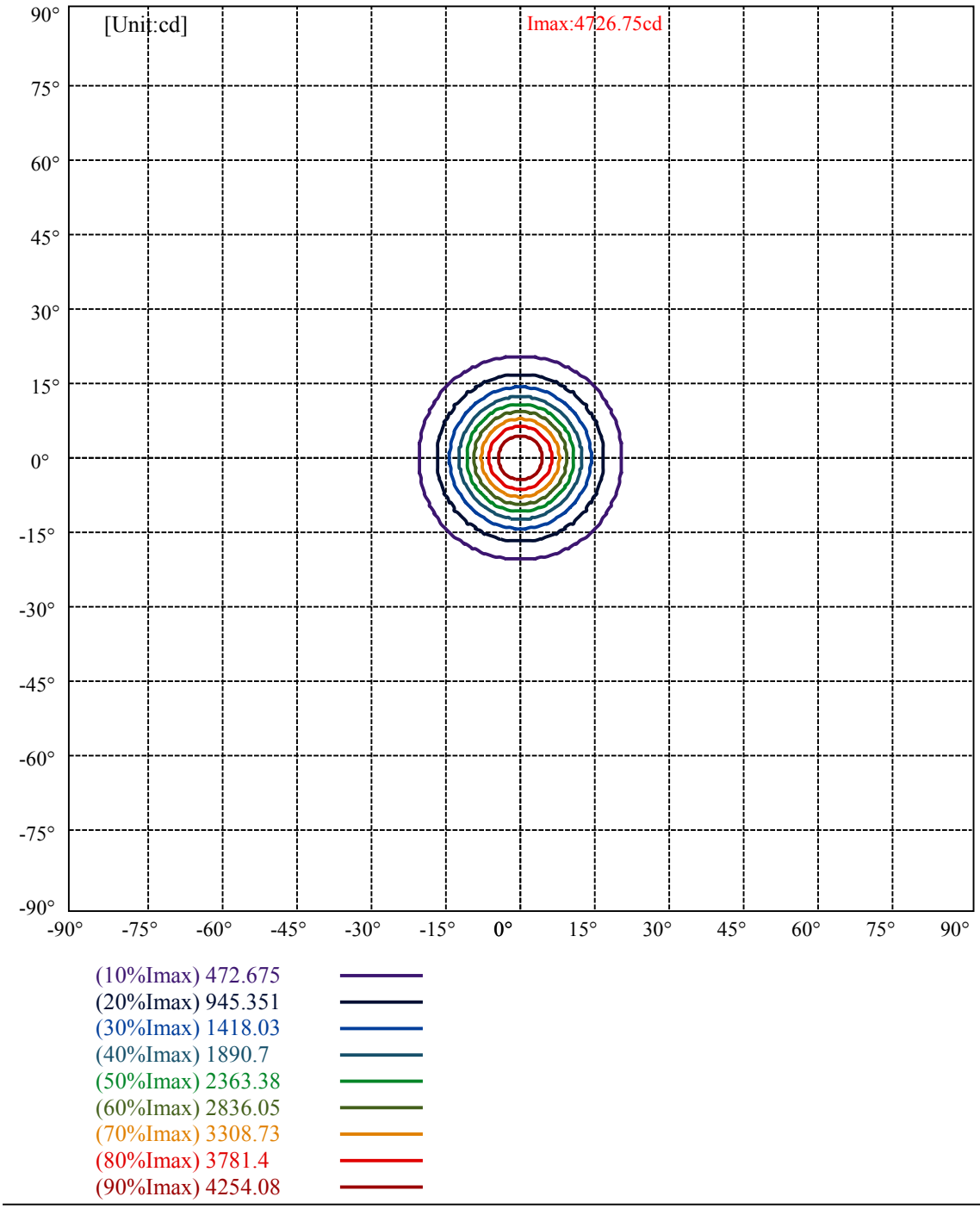
Field angle(10%Imax):C0/180Left:20.2 Right:20.2
:C90/270Left:20.2 Right:20.2

Beam Angle(50%Imax):C0/180Left:10.6 Right:10.6
:C90/270Left:10.6 Right:10.6

Lux distance Curve



ISO-Intensity(V-H)

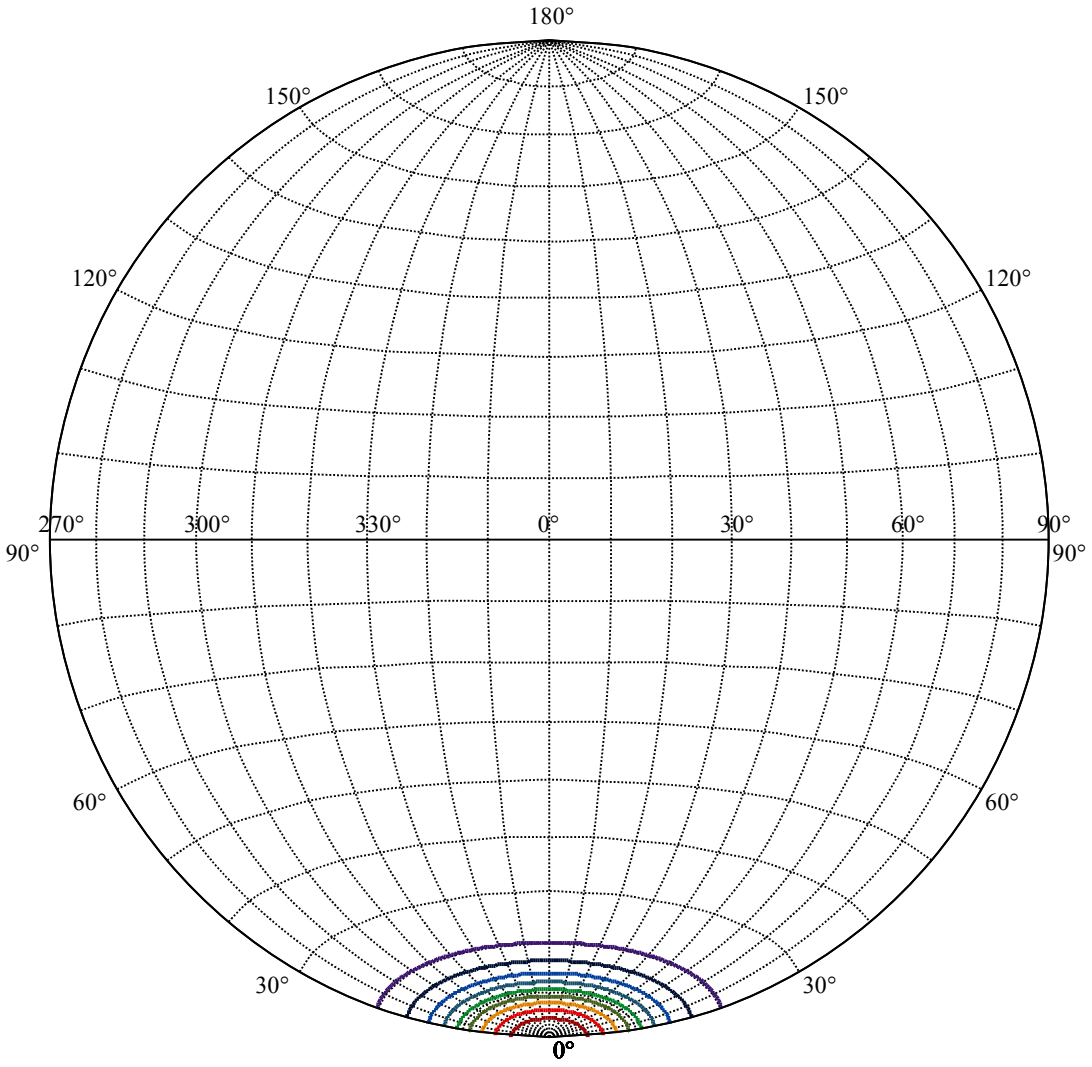


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/08
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

ISO candela diagram on circular web



House [Unit:cd] Road

Imax:4726.75

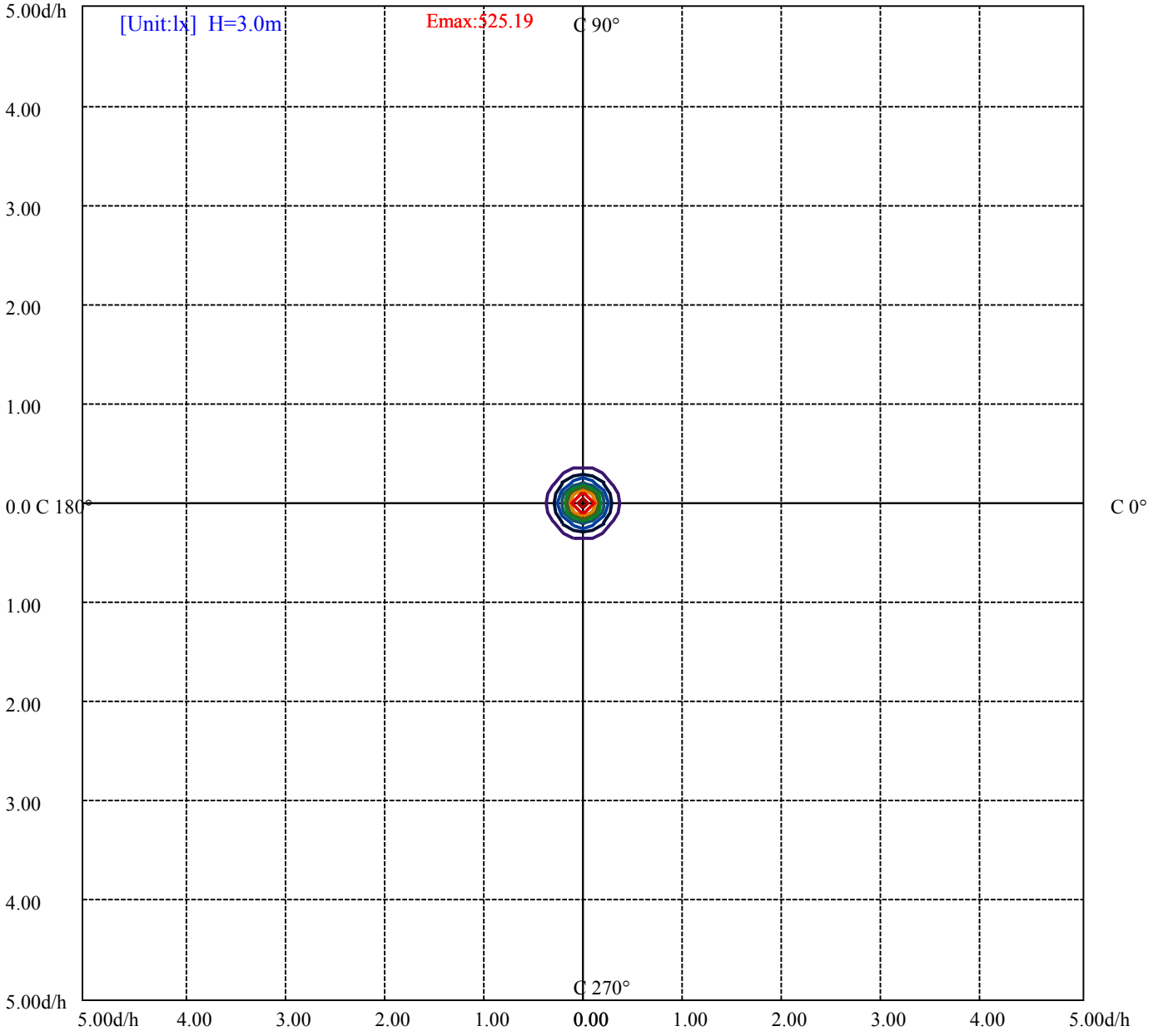
(10%Imax) 472.675
(20%Imax) 945.351
(30%Imax) 1418.03
(40%Imax) 1890.7
(50%Imax) 2363.38
(60%Imax) 2836.05
(70%Imax) 3308.73
(80%Imax) 3781.4
(90%Imax) 4254.08

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/08
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

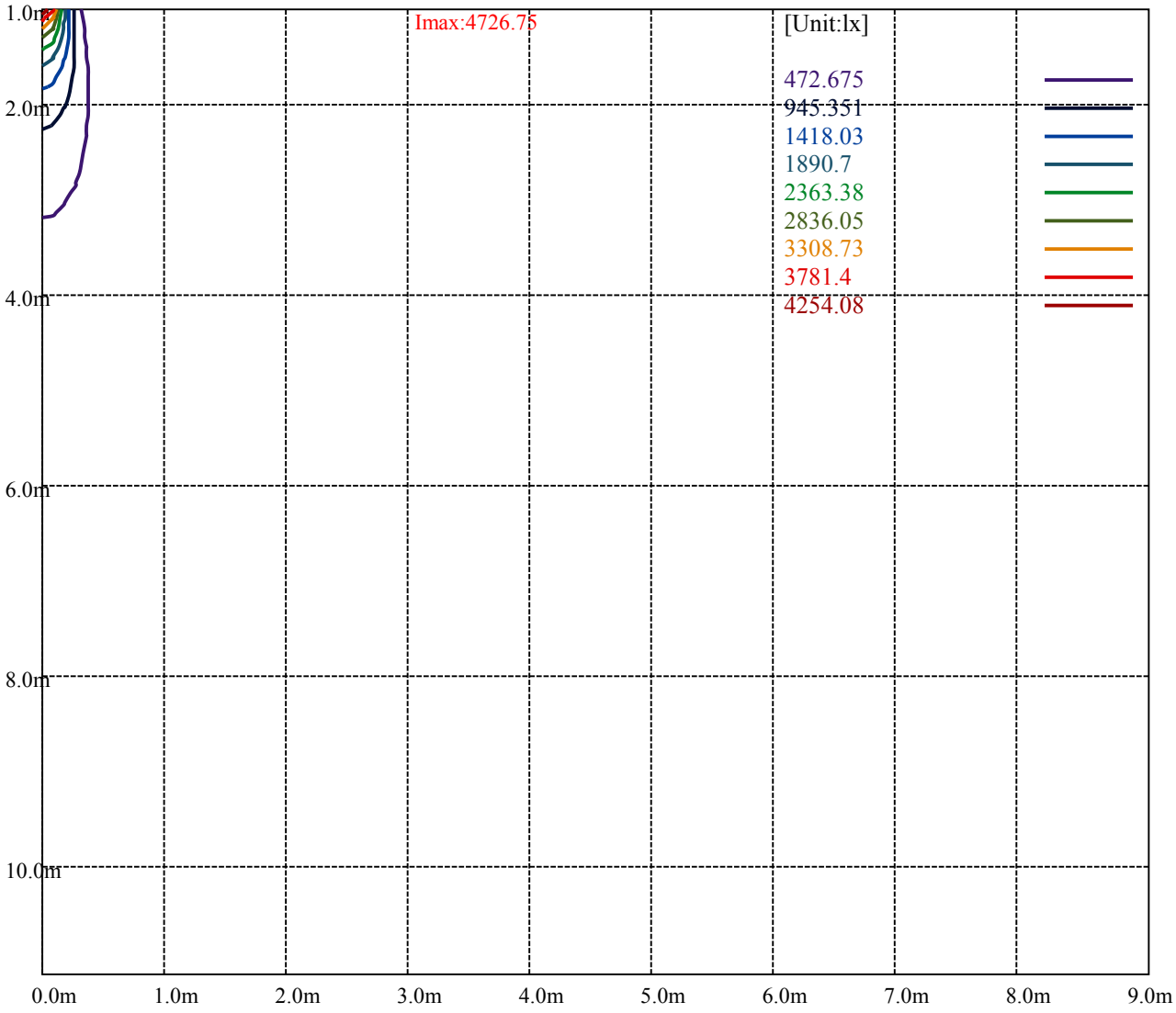
ISO illuminance diagram



(10%Emax) 52.51944
(20%Emax) 105.0389
(30%Emax) 157.5578
(40%Emax) 210.0778
(50%Emax) 262.5967
(60%Emax) 315.1167
(70%Emax) 367.6356
(80%Emax) 420.1555
(90%Emax) 472.6744

Equipment: GMS1980
Temperature(°C): 25.0
Date: 2022/6/08
Humidity(%): 65.0%
Operator: NT07
Distance(m): 7.73

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/6/08
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Luminance Limitting Curve(no luminous side)

Luminance Table

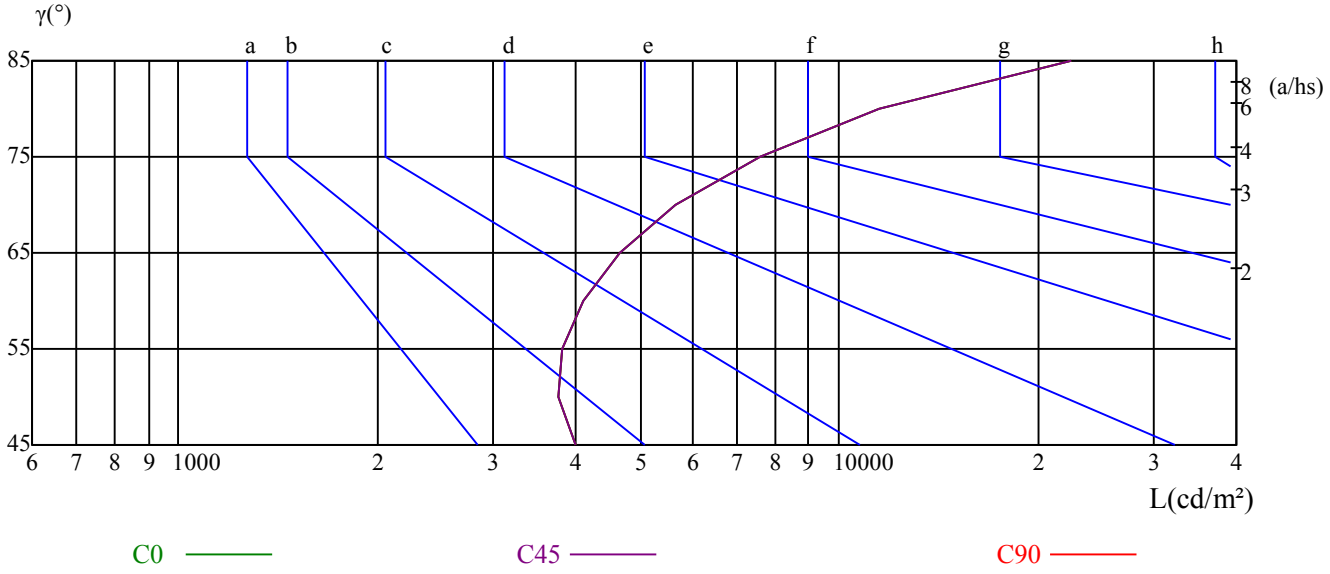
γ	45	50	55	60	65	70	75	80	85
C0	3982	3758	3810	4112	4664	5646	7601	11492	22433
C45	3982	3758	3810	4112	4664	5646	7601	11492	22433
C90	3982	3758	3810	4112	4664	5646	7601	11492	22433

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4664	4664	4664	7601	7601	7601	22433	22433	22433

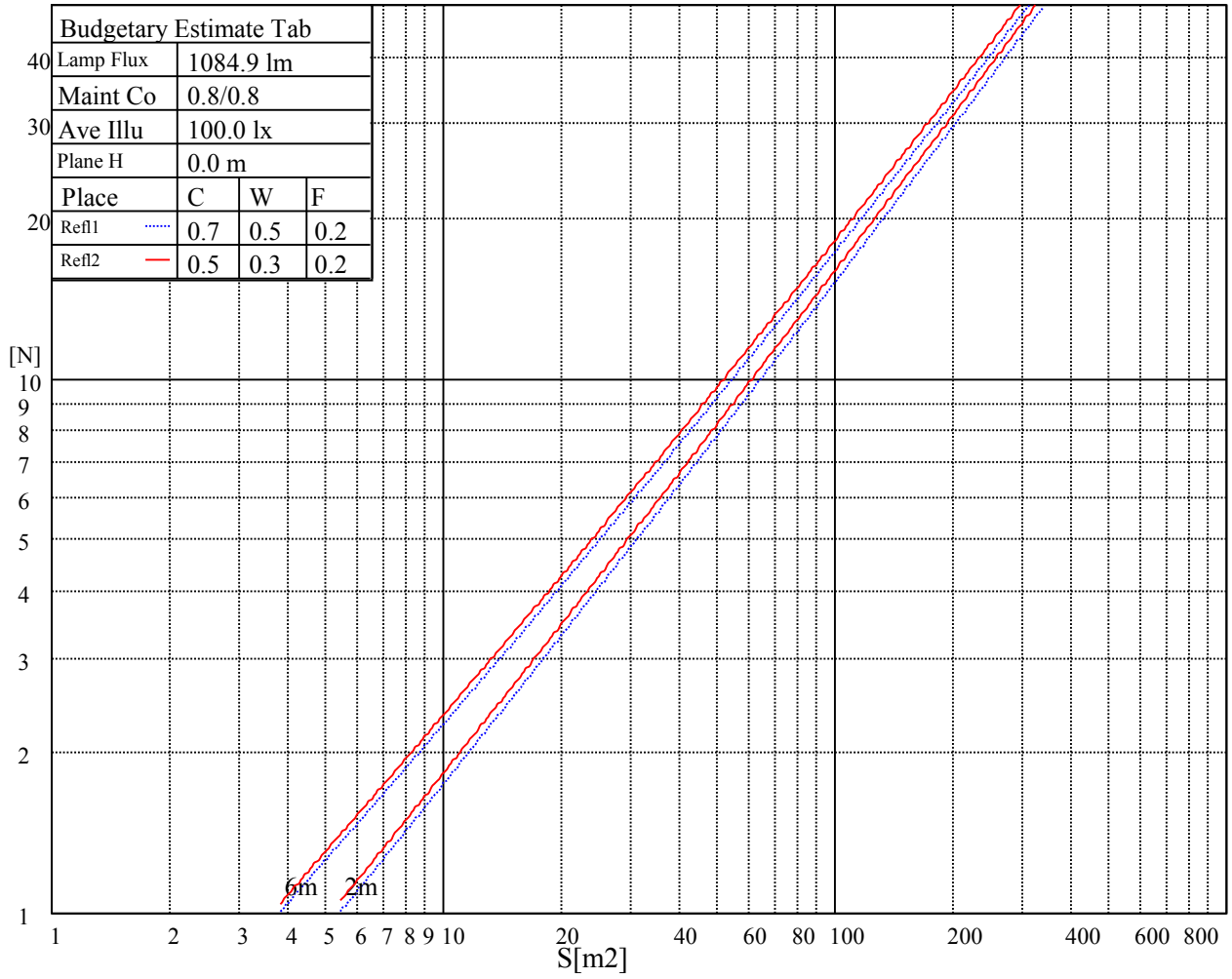
Glare Table

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

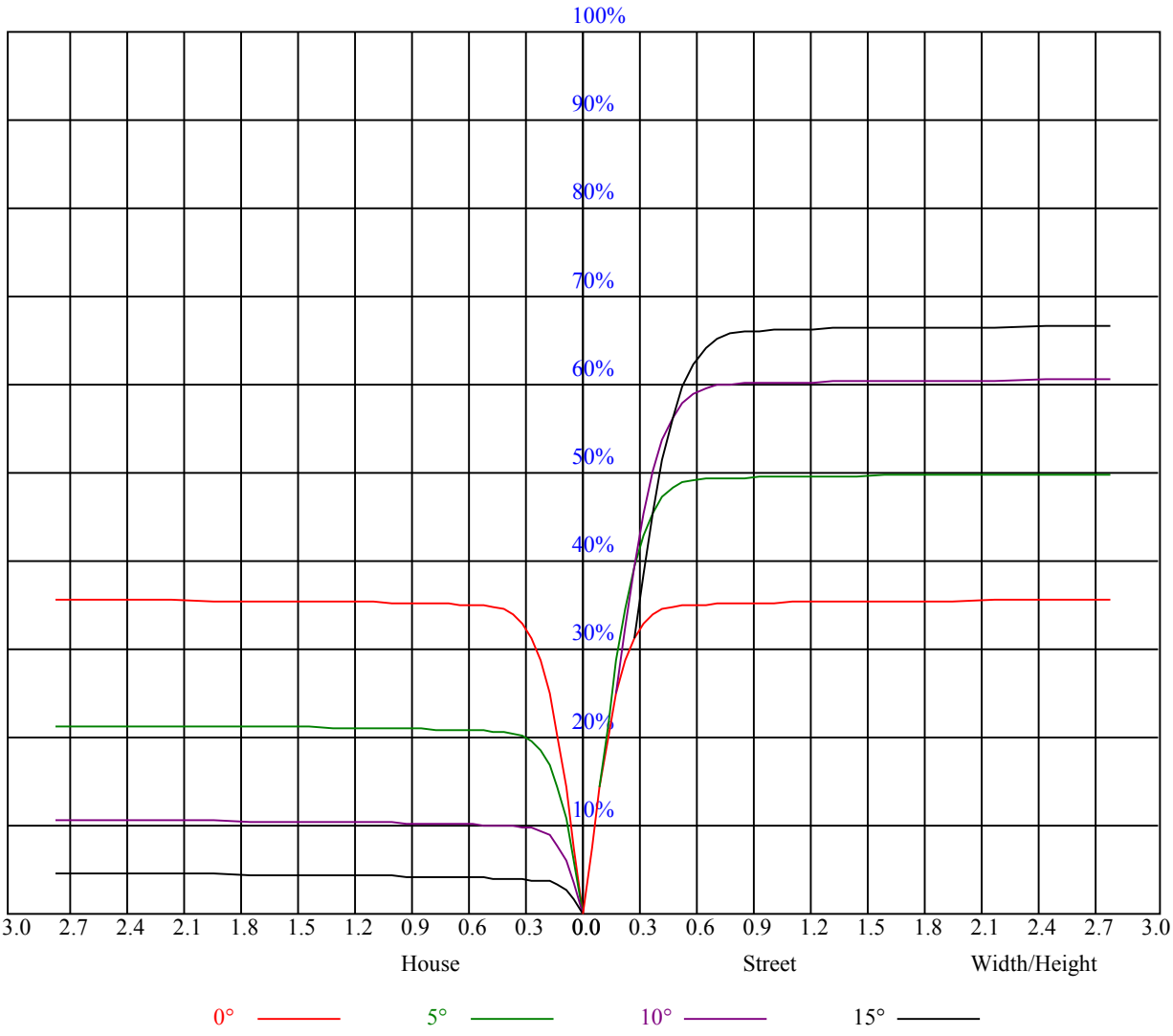


Equipment: GMS1980 Date: 2022/6/08 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

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

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2022/6/08	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 65.0%	Distance(m): 7.73

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	4680.44	4770.67	4811.90	4782.62	4713.91	4577.67	4381.08	4173.74	3903.66
45.0	4780.23	4746.17	4639.81	4502.98	4326.71	4066.78	3805.66	3510.48	3211.12
90.0	4710.92	4615.31	4459.36	4252.61	4029.14	3735.75	3404.12	3086.83	2714.57
135.0	4735.42	4625.47	4446.81	4274.12	4045.87	3755.47	3422.65	3108.35	2747.44
180.0	4680.44	4552.57	4375.70	4153.42	3912.62	3594.14	3249.96	2920.12	2553.84
225.0	4780.23	4761.11	4676.86	4556.16	4371.52	4180.31	3947.87	3653.29	3315.69
270.0	4710.92	4770.07	4767.68	4710.92	4612.33	4455.77	4246.04	4020.77	3724.40
315.0	4735.42	4794.57	4790.39	4739.60	4655.35	4492.82	4275.32	4059.01	3769.21
360.0	4680.44	4770.67	4811.90	4782.62	4713.91	4577.67	4381.08	4173.74	3903.66

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3585.77	3285.21	2928.49	2605.23	2258.66	1936.59	1677.86	1453.19	1217.76
45.0	2806.00	2484.53	2175.60	1854.13	1569.11	1356.39	1157.41	980.55	843.71
90.0	2393.70	2048.93	1738.81	1491.43	1187.35	1061.39	914.34	781.75	627.23
135.0	2387.13	2073.43	1750.76	1494.42	1251.82	1054.04	905.85	772.60	620.24
180.0	2237.75	1903.13	1605.56	1311.58	1169.07	1007.79	849.39	724.44	586.89
225.0	3001.39	2639.29	2284.35	1984.39	1713.71	1424.51	1186.10	1065.39	900.00
270.0	3400.54	3092.21	2727.12	2413.42	2076.41	1769.88	1529.67	1324.72	1108.42
315.0	3474.63	3122.69	2756.40	2434.93	2092.55	1786.01	1550.59	1190.76	1128.91
360.0	3585.77	3285.21	2928.49	2605.23	2258.66	1936.59	1677.86	1453.19	1217.76

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1055.83	911.23	752.89	629.80	516.27	397.36	302.95	206.33	130.86
45.0	699.11	583.79	462.49	345.97	302.95	170.00	104.39	60.95	36.15
90.0	512.20	408.89	293.03	215.35	148.07	94.59	49.71	33.16	24.20
135.0	507.30	404.53	301.75	206.63	139.46	85.98	47.86	32.63	25.45
180.0	459.14	359.17	271.40	177.76	116.28	69.49	37.47	27.73	21.63
225.0	757.07	635.47	509.63	393.95	299.06	206.39	138.27	81.56	43.50
270.0	957.84	826.98	677.00	559.29	450.54	341.79	307.13	164.38	104.33
315.0	977.14	842.22	719.19	572.07	461.23	357.80	244.75	171.85	111.86
360.0	1055.83	911.23	752.89	629.80	516.27	397.36	302.95	206.33	130.86

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	78.63	42.07	27.01	20.08	16.13	13.92	12.61	11.59	10.40
45.0	25.28	17.87	14.76	12.85	11.59	10.58	9.68	8.90	8.31
90.0	17.87	14.64	12.73	11.77	10.76	9.62	9.02	8.43	7.71
135.0	18.40	15.12	13.32	12.19	11.05	10.16	9.32	8.66	8.13
180.0	16.61	14.28	12.97	11.71	10.82	9.92	9.14	8.54	7.95
225.0	27.84	21.69	16.55	14.64	13.27	11.89	10.88	10.04	9.20
270.0	55.21	30.18	22.65	17.33	14.82	13.44	12.13	11.11	10.16
315.0	62.08	33.58	23.24	17.99	15.36	13.44	12.25	11.23	10.10
360.0	78.63	42.07	27.01	20.08	16.13	13.92	12.61	11.59	10.40

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	9.62	8.90	8.25	7.71	7.23	6.81	6.45	6.09	5.80
45.0	7.71	7.29	6.81	6.39	6.09	5.86	5.56	5.38	5.14
90.0	7.35	6.87	6.51	6.15	5.92	5.62	5.44	5.20	5.08
135.0	7.59	7.17	6.81	6.39	6.15	5.86	5.62	5.44	5.20
180.0	7.47	7.05	6.69	6.27	6.04	5.80	5.56	5.38	5.14
225.0	8.48	7.95	7.41	6.93	6.57	6.21	5.92	5.68	5.38
270.0	9.32	8.66	8.13	7.47	7.05	6.69	6.27	5.98	5.74
315.0	9.38	8.72	8.13	7.53	7.05	6.69	6.39	5.98	5.74
360.0	9.62	8.90	8.25	7.71	7.23	6.81	6.45	6.09	5.80

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	5.62	5.38	5.20	4.96	4.90	4.72	4.60	4.48	4.36
45.0	4.90	4.78	4.66	4.54	4.36	4.24	4.12	4.06	4.00
90.0	4.90	4.72	4.60	4.48	4.42	4.30	4.24	4.18	4.12
135.0	5.08	4.96	4.84	4.72	4.60	4.48	4.36	4.30	4.30
180.0	4.96	4.78	4.72	4.54	4.48	4.36	4.24	4.18	4.12
225.0	5.20	5.02	4.84	4.72	4.60	4.42	4.30	4.24	4.12
270.0	5.50	5.26	5.08	4.90	4.72	4.60	4.48	4.36	4.24
315.0	5.50	5.26	5.08	4.90	4.78	4.60	4.48	4.36	4.30
360.0	5.62	5.38	5.20	4.96	4.90	4.72	4.60	4.48	4.36

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	4.24	4.18	4.12	4.00	4.00	3.88	3.88	3.82	3.82
45.0	3.94	3.88	3.82	3.76	3.70	3.70	3.64	3.59	3.59
90.0	4.00	3.94	3.94	3.88	3.88	3.82	3.82	3.76	3.76
135.0	4.24	4.18	4.12	4.06	4.06	4.06	4.06	4.00	4.00
180.0	4.06	4.00	3.94	3.88	3.82	3.82	3.76	3.70	3.70
225.0	4.06	3.94	3.88	3.82	3.76	3.70	3.70	3.64	3.64
270.0	4.12	4.06	4.00	3.94	3.88	3.82	3.76	3.70	3.64
315.0	4.18	4.12	4.00	3.94	3.88	3.82	3.76	3.76	3.70
360.0	4.24	4.18	4.12	4.00	4.00	3.88	3.88	3.82	3.82

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.76	3.70	3.70	3.70	3.64	3.64	3.64	3.59	3.59
45.0	3.53	3.53	3.47	3.47	3.41	3.41	3.41	3.41	3.41
90.0	3.70	3.70	3.70	3.70	3.64	3.64	3.64	3.64	3.64
135.0	3.94	4.00	4.00	4.00	4.00	4.00	4.00	3.94	3.94
180.0	3.64	3.64	3.59	3.64	3.59	3.59	3.59	3.59	3.59
225.0	3.59	3.53	3.53	3.53	3.47	3.47	3.41	3.41	3.41
270.0	3.64	3.64	3.59	3.53	3.53	3.47	3.47	3.47	3.47
315.0	3.64	3.64	3.59	3.59	3.53	3.53	3.53	3.53	3.47
360.0	3.76	3.70	3.70	3.70	3.64	3.64	3.64	3.59	3.59

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	3.59	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53
45.0	3.41	3.35	3.35	3.29	3.29	3.29	3.29	3.29	3.29
90.0	3.64	3.64	3.64	3.64	3.70	3.76	3.88	3.94	4.00
135.0	4.00	4.12	4.66	4.90	5.38	5.62	5.74	5.68	5.08
180.0	3.53	3.53	3.59	3.53	3.53	3.53	3.53	3.53	3.59
225.0	3.41	3.41	3.35	3.41	3.35	3.35	3.35	3.35	3.35
270.0	3.41	3.41	3.35	3.41	3.35	3.35	3.35	3.35	3.35
315.0	3.47	3.41	3.41	3.41	3.41	3.41	3.41	3.35	3.35
360.0	3.59	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.53

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	3.53	3.53	3.53	3.59	3.59	3.64	3.35	3.35	3.35
45.0	3.29	3.29	3.35	3.29	3.29	3.17	3.17	3.23	3.23
90.0	4.06	4.00	3.88	3.88	3.47	3.23	3.23	3.23	3.23
135.0	4.36	4.36	4.48	4.60	4.54	3.29	3.29	3.29	3.29
180.0	3.64	3.70	3.76	3.82	3.82	3.29	3.35	3.35	3.47
225.0	3.35	3.41	3.41	3.41	3.47	3.53	3.17	3.17	3.17
270.0	3.29	3.35	3.35	3.35	3.35	3.35	3.23	3.23	3.23
315.0	3.41	3.47	3.35	3.41	3.41	3.47	3.29	3.29	3.29
360.0	3.53	3.53	3.53	3.59	3.59	3.64	3.35	3.35	3.35

Intensity data(cd)

C/γ(°)	90.0
0.0	3.29
45.0	3.17
90.0	3.23
135.0	3.29
180.0	3.35
225.0	3.17
270.0	3.23
315.0	3.29
360.0	3.29