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Nata

LumCAT: 1-0928-M
Luminaire: 99.02.73.179+92.76.853.00

Report No: 220608-B006	Voltage(V): 38.4800
Test No: 220608-C006	Current(A): 0.3610
LampCAT: CREE CXA1507	Power (W): 13.8910
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): 767.86
Efficiency(%): 70.78%
Lumens(lm)/Power(W): 55.28
Central intensity(cd): 2899.211
Maximum intensity(cd): 2899.211
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=31.6
[C90/270]Total=31.6
Field angle(10%Imax): [C0/180]Total=45.6
[C90/270]Total=45.6
Maximum s/h(1/2): C0_180=0.53 C90_270=0.53
Maximum s/h(1/4): C0_180=0.49 C90_270=0.49
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 70.78%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.551%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2899.211	0.000	0	.000%	.000%
1.0	2895.327	2.773	2.773	.256%	.361%
2.0	2877.550	8.286	11.058	.764%	1.440%
3.0	2848.122	13.694	24.752	1.262%	3.224%
4.0	2805.100	18.923	43.675	1.744%	5.688%
5.0	2745.048	23.876	67.552	2.201%	8.797%
6.0	2680.142	28.511	96.063	2.628%	12.510%
7.0	2598.355	32.764	128.826	3.020%	16.777%
8.0	2507.829	36.544	165.37	3.368%	21.536%
9.0	2401.992	39.791	205.162	3.668%	26.719%
10.0	2285.772	42.423	247.584	3.910%	32.243%
11.0	2166.117	44.484	292.068	4.100%	38.037%
12.0	2037.723	45.954	338.022	4.236%	44.021%
13.0	1894.764	46.669	384.69	4.302%	50.099%
14.0	1746.577	46.609	431.299	4.296%	56.169%
15.0	1595.477	45.881	477.181	4.229%	62.144%
16.0	1415.188	44.115	521.295	4.066%	67.889%
17.0	1242.957	41.394	562.69	3.815%	73.280%
18.0	1062.847	38.018	600.707	3.504%	78.231%
19.0	901.238	34.171	634.878	3.150%	82.681%
20.0	711.791	29.523	664.401	2.721%	86.526%
21.0	538.732	24.013	688.414	2.213%	89.654%
22.0	393.421	18.732	707.146	1.727%	92.093%
23.0	261.165	13.735	720.881	1.266%	93.882%
24.0	159.525	9.198	730.079	.848%	95.080%
25.0	87.971	5.628	735.706	.519%	95.812%
26.0	58.633	3.461	739.167	.319%	96.263%
27.0	39.676	2.405	741.572	.222%	96.576%
28.0	26.762	1.682	743.254	.155%	96.795%
29.0	19.323	1.206	744.46	.111%	96.952%
30.0	14.692	0.918	745.378	.085%	97.072%
31.0	11.450	0.727	746.106	.067%	97.167%
32.0	9.471	0.599	746.705	.055%	97.245%
33.0	8.194	0.520	747.225	.048%	97.313%
34.0	7.290	0.469	747.694	.043%	97.374%
35.0	6.670	0.434	748.127	.040%	97.430%
36.0	6.184	0.409	748.537	.038%	97.483%
37.0	5.811	0.391	748.928	.036%	97.534%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	5.505	0.378	749.306	.035%	97.584%
39.0	5.243	0.367	749.673	.034%	97.631%
40.0	5.019	0.358	750.03	.033%	97.678%
41.0	4.847	0.351	750.382	.032%	97.724%
42.0	4.676	0.346	750.728	.032%	97.769%
43.0	4.534	0.341	751.069	.031%	97.813%
44.0	4.407	0.337	751.406	.031%	97.857%
45.0	4.302	0.335	751.741	.031%	97.901%
46.0	4.213	0.333	752.074	.031%	97.944%
47.0	4.123	0.332	752.406	.031%	97.987%
48.0	4.041	0.330	752.736	.030%	98.030%
49.0	3.989	0.330	753.065	.030%	98.073%
50.0	3.921	0.330	753.395	.030%	98.116%
51.0	3.869	0.330	753.725	.030%	98.159%
52.0	3.832	0.330	754.055	.030%	98.202%
53.0	3.772	0.331	754.386	.030%	98.245%
54.0	3.727	0.331	754.716	.030%	98.288%
55.0	3.697	0.331	755.048	.031%	98.331%
56.0	3.682	0.333	755.381	.031%	98.375%
57.0	3.667	0.336	755.717	.031%	98.419%
58.0	3.630	0.337	756.055	.031%	98.463%
59.0	3.593	0.338	756.392	.031%	98.507%
60.0	3.585	0.339	756.732	.031%	98.551%
61.0	3.570	0.341	757.073	.031%	98.595%
62.0	3.555	0.343	757.416	.032%	98.640%
63.0	3.540	0.345	757.762	.032%	98.685%
64.0	3.518	0.346	758.108	.032%	98.730%
65.0	3.518	0.348	758.456	.032%	98.775%
66.0	3.503	0.350	758.806	.032%	98.821%
67.0	3.525	0.353	759.16	.033%	98.867%
68.0	3.488	0.355	759.515	.033%	98.913%
69.0	3.496	0.356	759.871	.033%	98.960%
70.0	3.481	0.358	760.23	.033%	99.006%
71.0	3.473	0.359	760.589	.033%	99.053%
72.0	3.496	0.362	760.951	.033%	99.100%
73.0	3.488	0.365	761.317	.034%	99.148%
74.0	3.496	0.367	761.684	.034%	99.196%
75.0	3.533	0.371	762.055	.034%	99.244%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.585	0.378	762.433	.035%	99.293%
77.0	3.660	0.386	762.819	.036%	99.343%
78.0	3.705	0.394	763.213	.036%	99.395%
79.0	3.735	0.400	763.613	.037%	99.447%
80.0	3.742	0.403	764.016	.037%	99.499%
81.0	3.712	0.403	764.419	.037%	99.552%
82.0	3.608	0.397	764.816	.037%	99.604%
83.0	3.593	0.391	765.208	.036%	99.655%
84.0	3.630	0.393	765.601	.036%	99.706%
85.0	3.585	0.394	765.995	.036%	99.757%
86.0	3.585	0.392	766.387	.036%	99.808%
87.0	3.384	0.381	766.768	.035%	99.858%
88.0	3.309	0.367	767.135	.034%	99.906%
89.0	3.309	0.363	767.498	.033%	99.953%
90.0	3.309	0.363	767.86	.033%	100.000%

Zonal flux distribution table

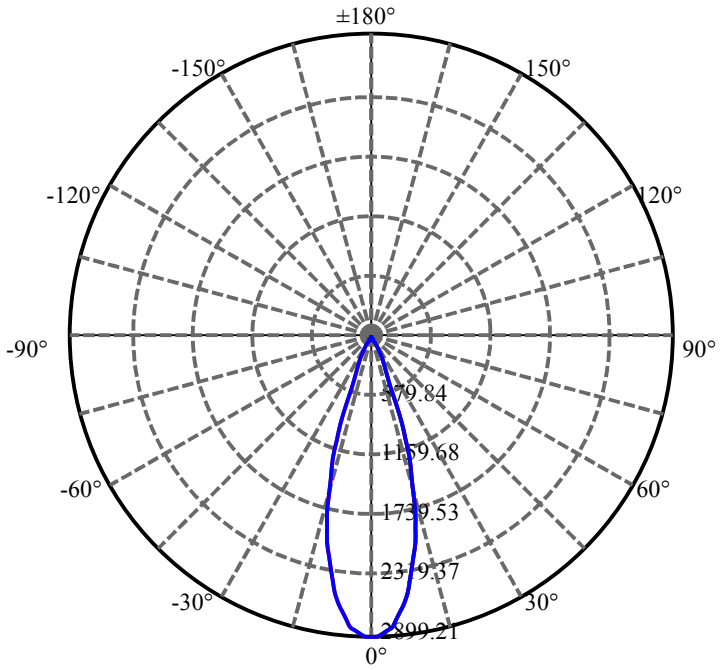
ZONAL LUMEN SUMMARY

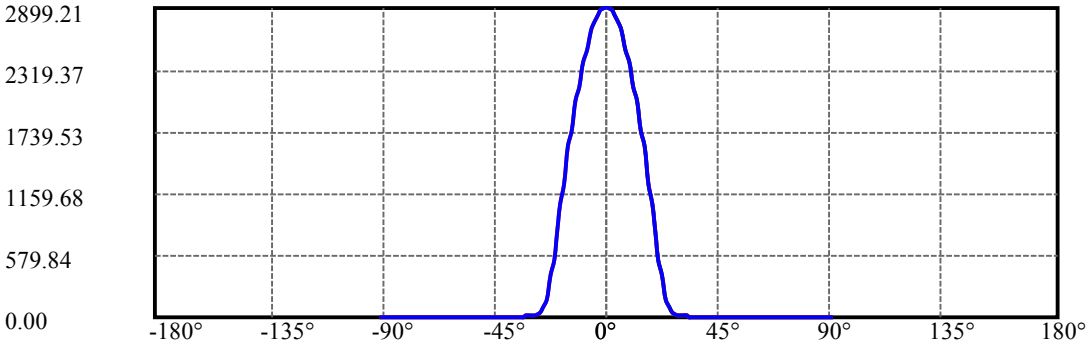
Zone	Lumens	%Lamp	%Fixt
0-30	745.38	68.70%	97.07%
0-40	750.03	69.13%	97.68%
0-60	756.73	69.75%	98.55%
0-90	767.50	70.74%	99.95%
0-120	767.50	70.74%	99.95%
0-180	767.86	70.78%	100.00%
60-90	11.11	1.02%	1.45%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-18.40	614.29	56.62%	80.00%

ZONAL LUMEN SUMMARY

0-10	247.58
10-20	416.82
20-30	80.98
30-40	4.65
40-50	3.36
50-60	3.34
60-70	3.50
70-80	3.79
80-90	3.48
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):

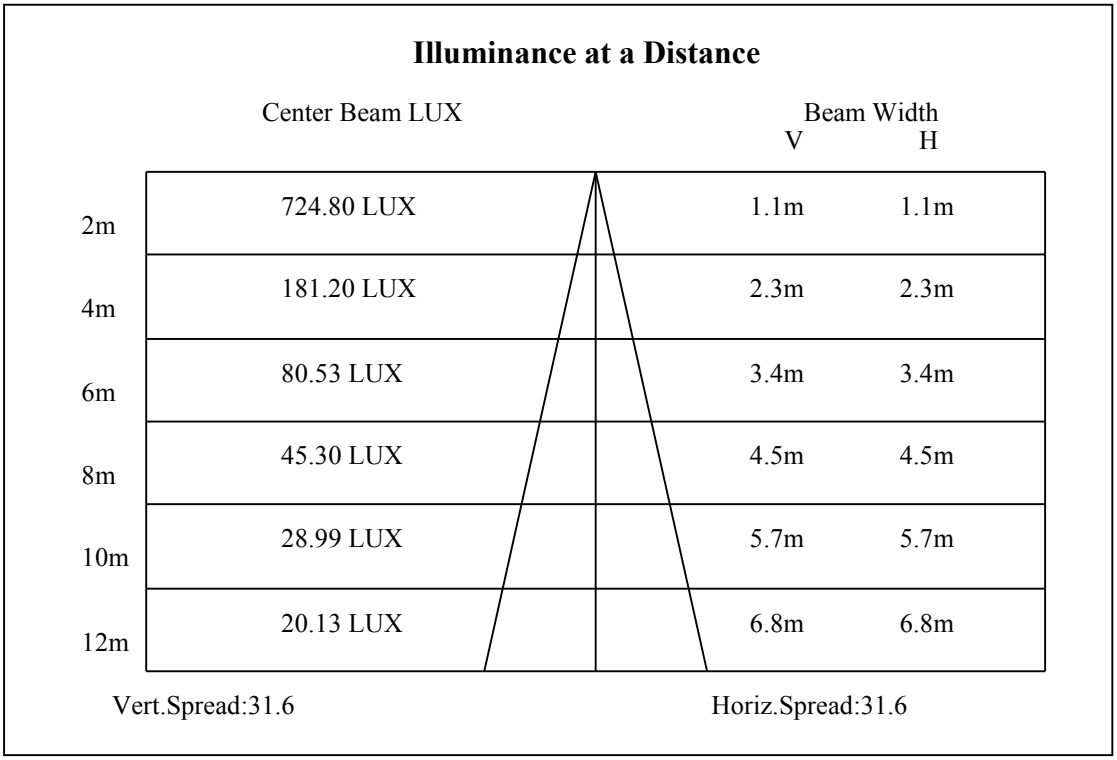
C0/C180:

C90/C270:

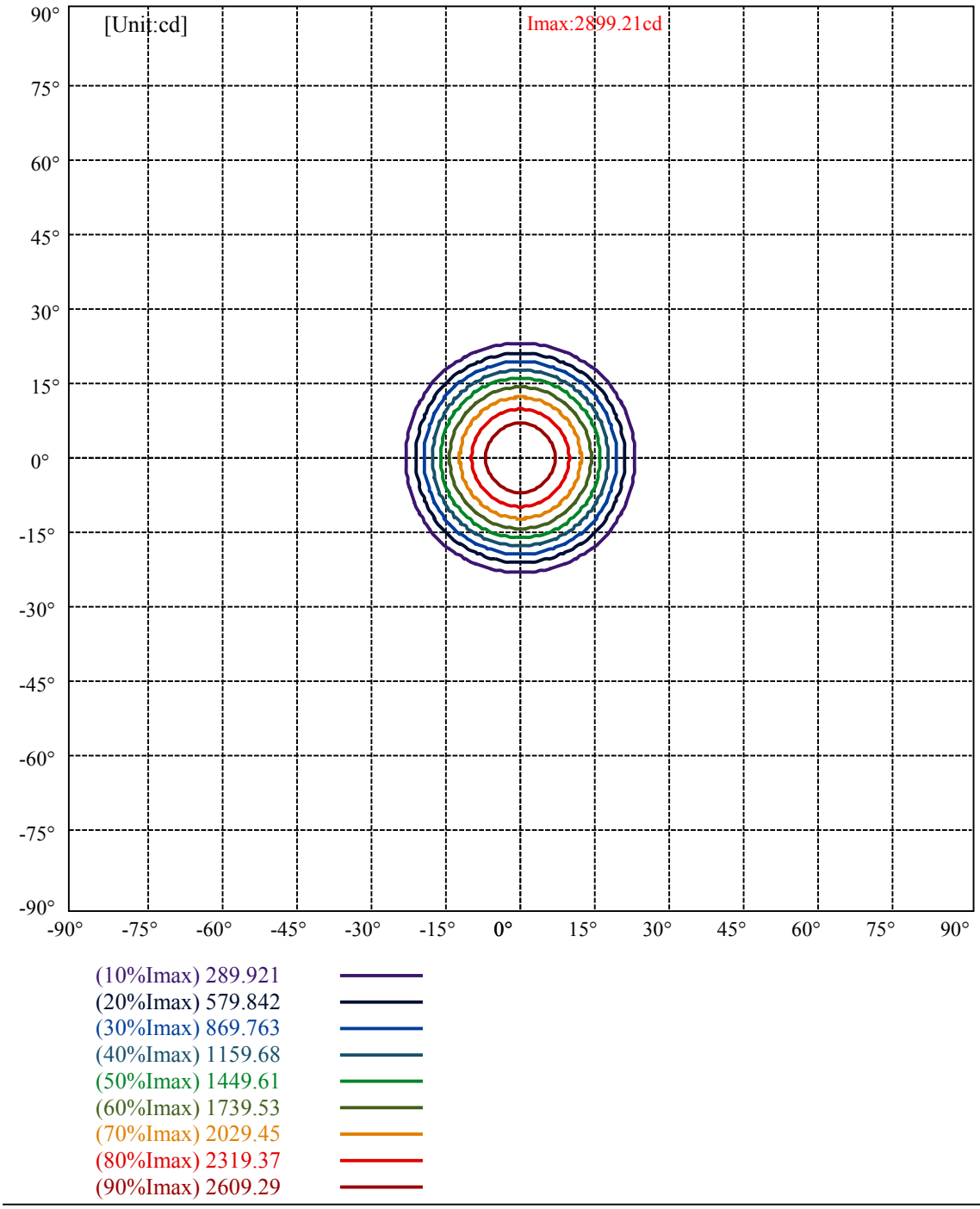
Field angle(10%Imax):C0/180Left:22.8 Right:22.8
:C90/270Left:22.8 Right:22.8

Beam Angle(50%Imax):C0/180Left:15.8 Right:15.8
:C90/270Left:15.8 Right:15.8

Lux distance Curve



ISO-Intensity(V-H)

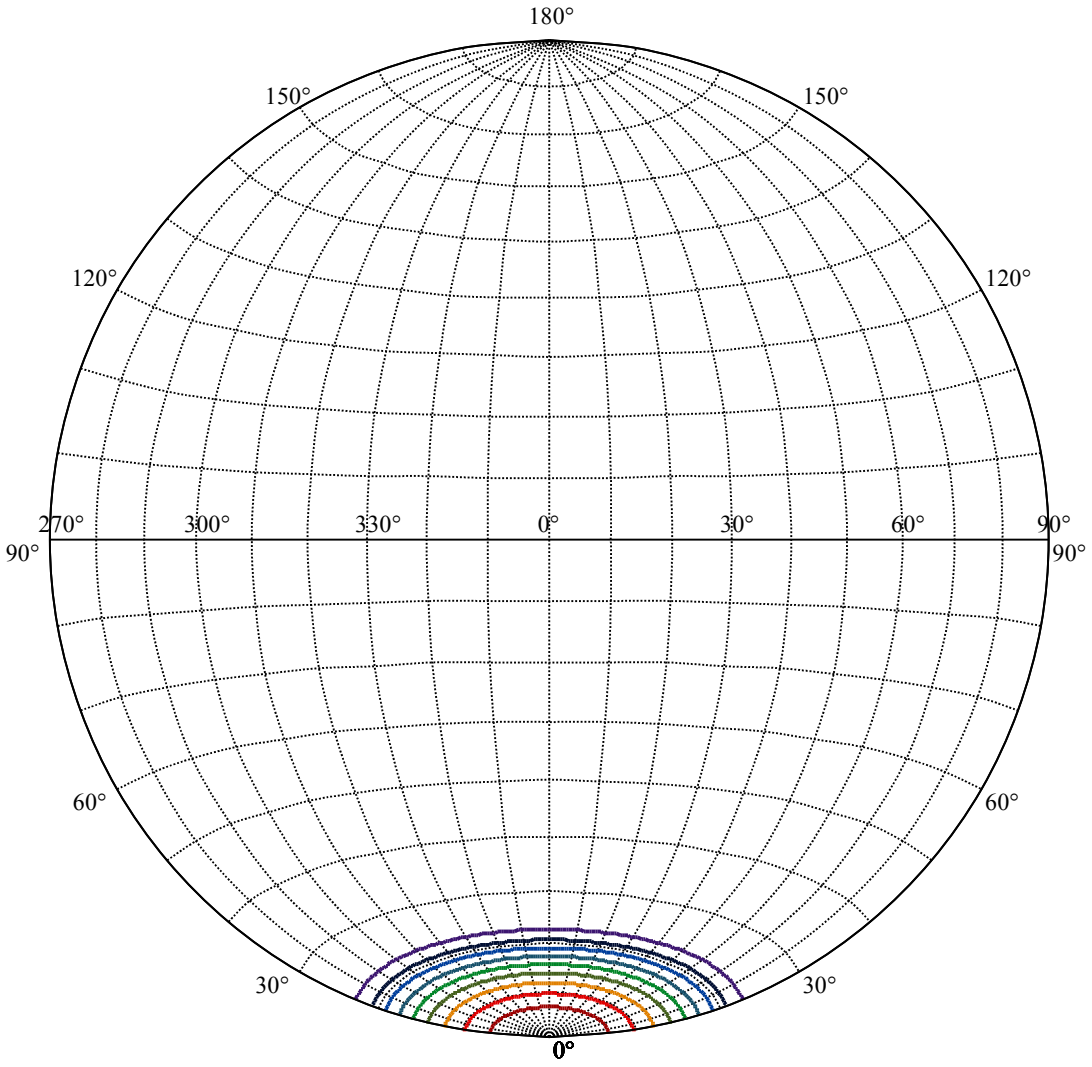


Equipment: GMS1980
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.73

ISO candela diagram on circular web



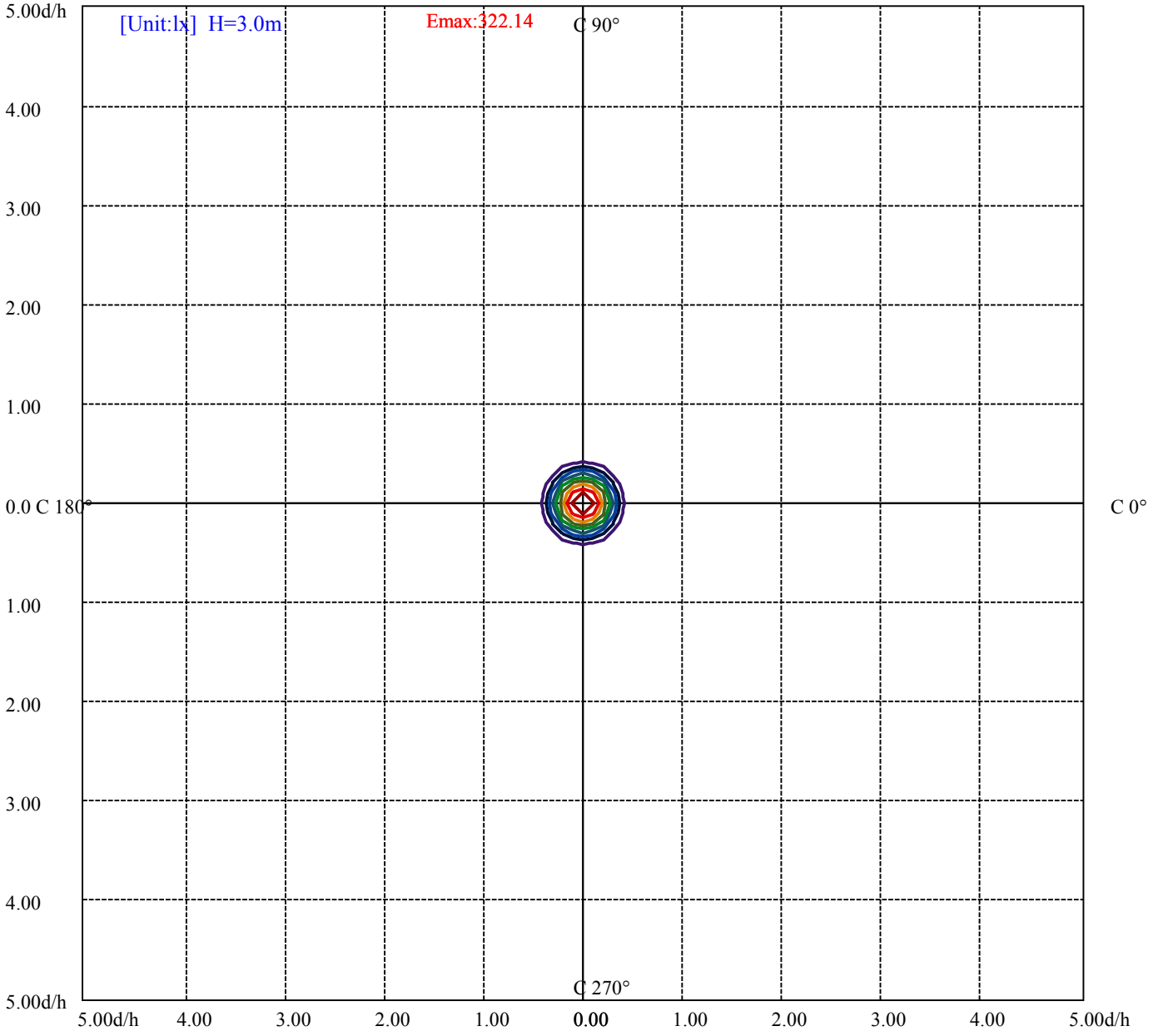
House [Unit:cd] Road

Imax:2899.21

(10%Imax) 289.921
(20%Imax) 579.842
(30%Imax) 869.763
(40%Imax) 1159.68
(50%Imax) 1449.61
(60%Imax) 1739.53
(70%Imax) 2029.45
(80%Imax) 2319.37
(90%Imax) 2609.29

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

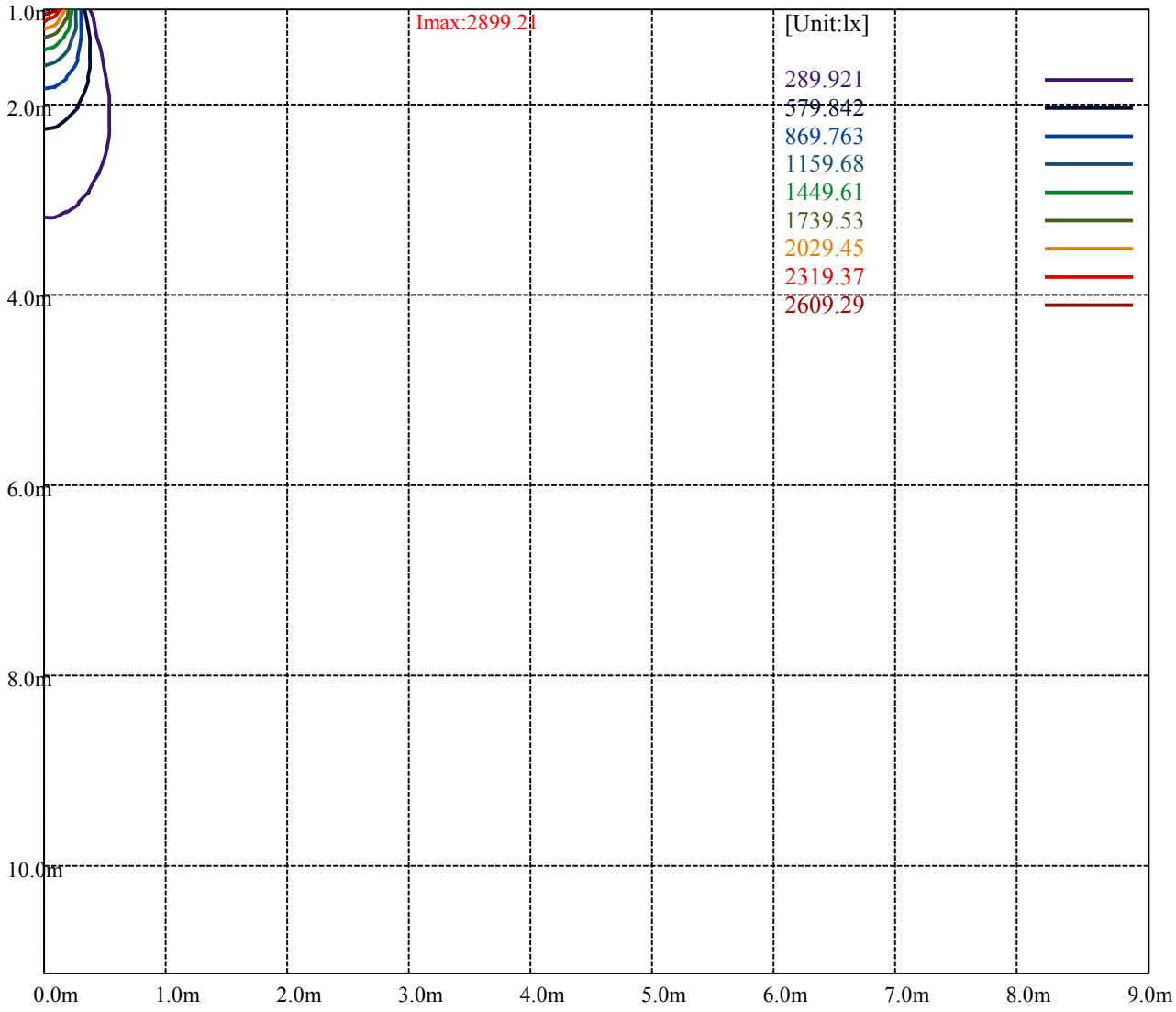
ISO illuminance diagram



(10%Emax) 32.21344
(20%Emax) 64.42689
(30%Emax) 96.64034
(40%Emax) 128.8533
(50%Emax) 161.0678
(60%Emax) 193.2811
(70%Emax) 225.4944
(80%Emax) 257.7078
(90%Emax) 289.9211

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

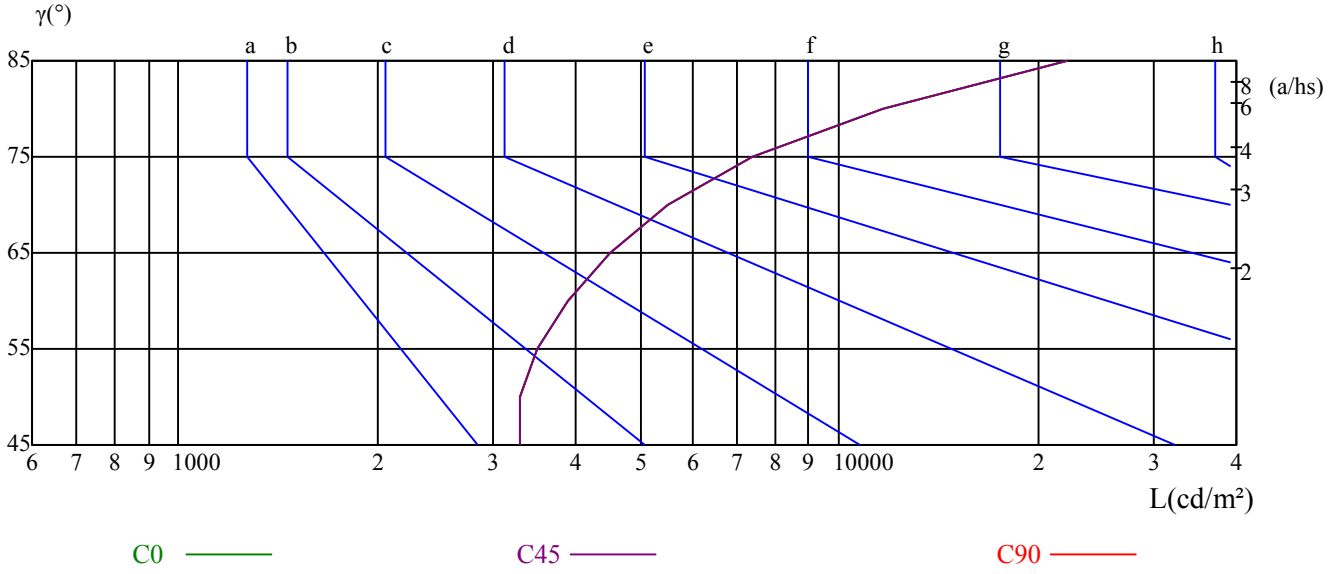
γ	45	50	55	60	65	70	75	80	85
C0	3291	3299	3486	3878	4502	5504	7382	11655	22247
C45	3291	3299	3486	3878	4502	5504	7382	11655	22247
C90	3291	3299	3486	3878	4502	5504	7382	11655	22247

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4502	4502	4502	7382	7382	7382	22247	22247	22247

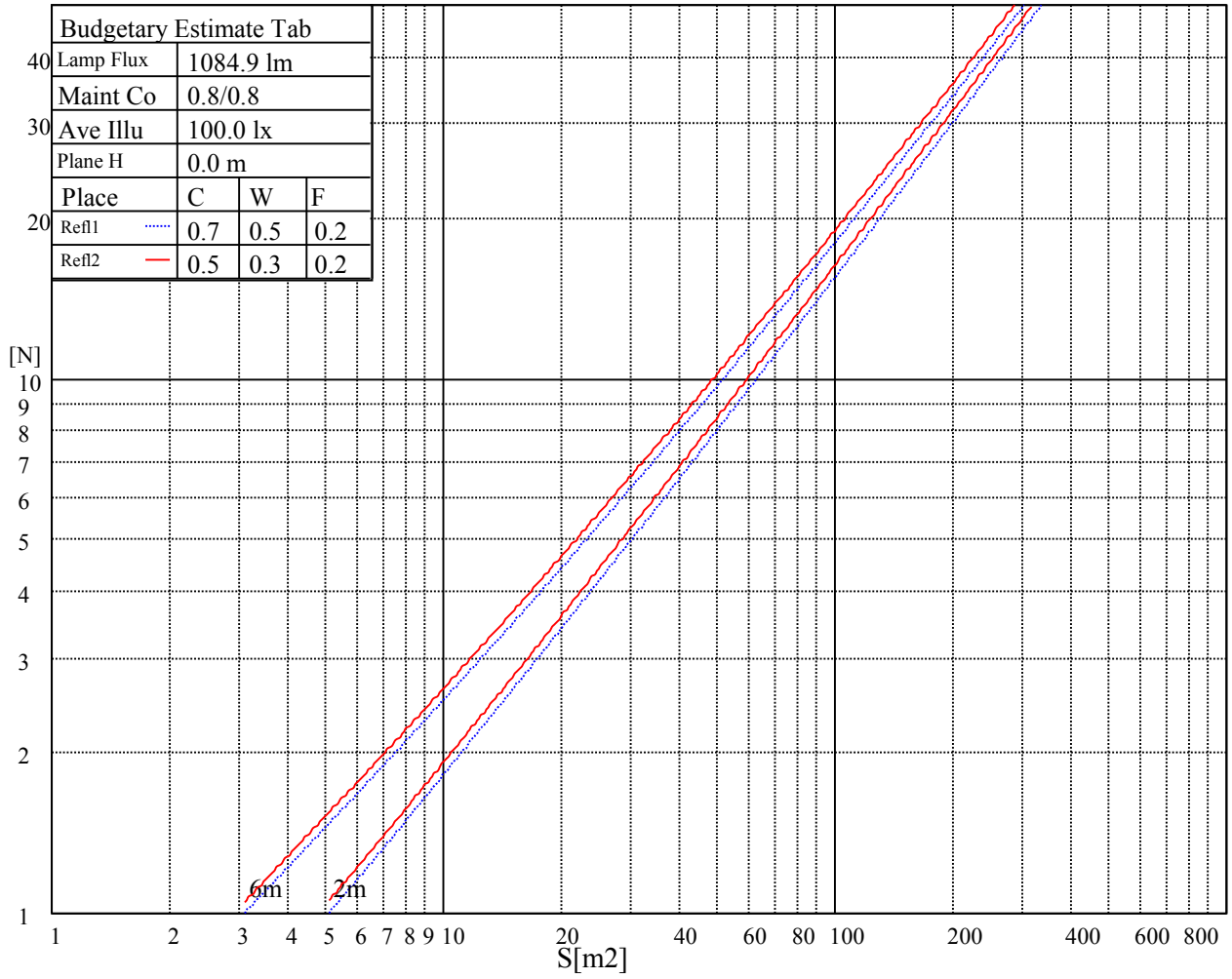
Glare Table

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

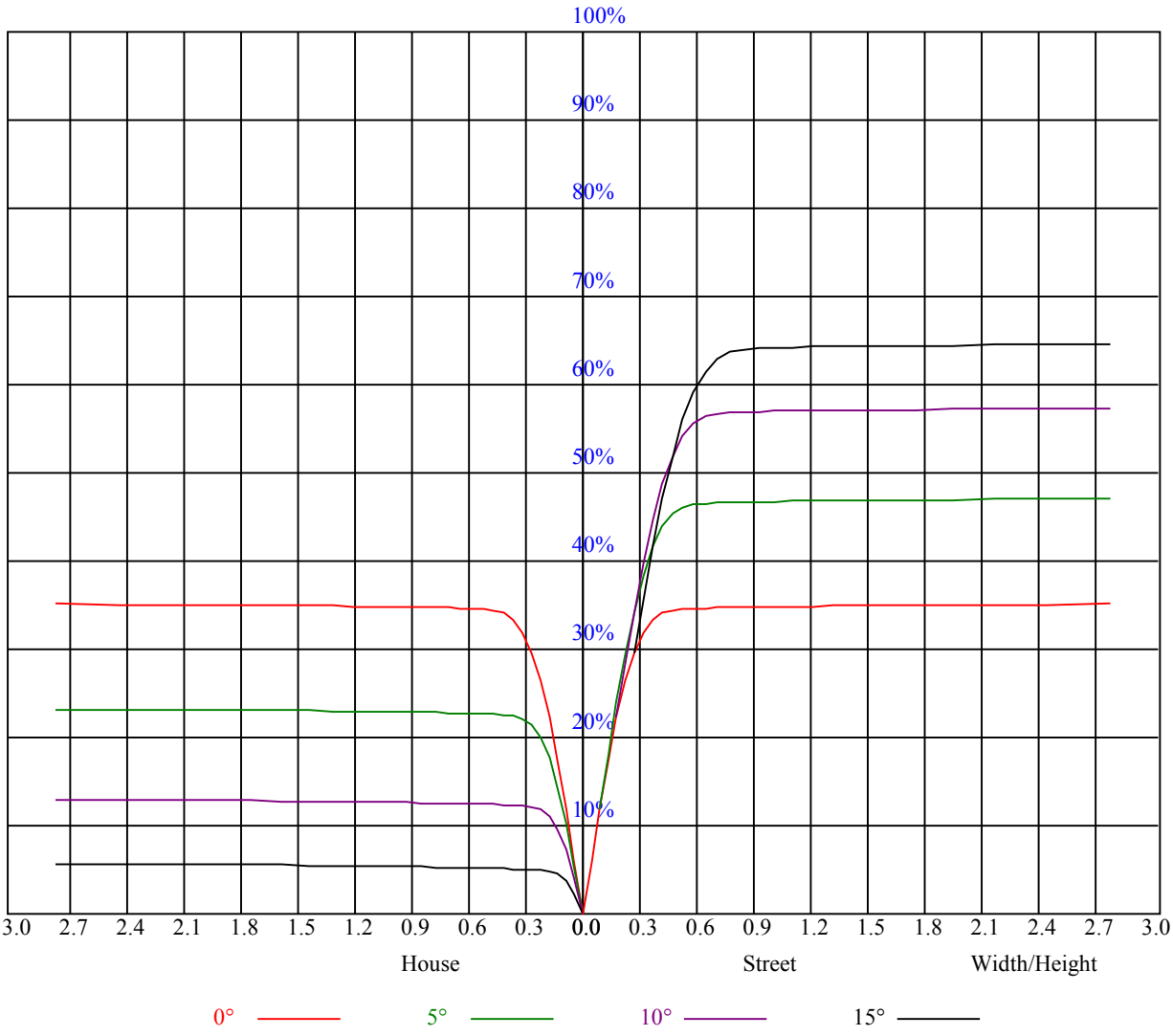


Equipment: GMS1980 Date: 2022/6/08 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

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	0.84	0.84	0.84	0.82	0.82	0.82	0.79	0.79	0.79	0.75	0.75	0.75	0.72	0.72	0.72	0.71
1	0.80	0.78	0.77	0.78	0.77	0.76	0.75	0.74	0.73	0.73	0.72	0.71	0.70	0.70	0.69	0.68
2	0.76	0.74	0.72	0.75	0.73	0.71	0.73	0.71	0.70	0.71	0.69	0.68	0.69	0.68	0.67	0.66
3	0.73	0.70	0.68	0.72	0.69	0.68	0.70	0.68	0.67	0.68	0.67	0.66	0.67	0.66	0.65	0.64
4	0.70	0.67	0.65	0.69	0.67	0.65	0.68	0.66	0.64	0.67	0.65	0.63	0.65	0.64	0.63	0.62
5	0.68	0.65	0.62	0.67	0.64	0.62	0.66	0.63	0.62	0.65	0.63	0.61	0.64	0.62	0.61	0.60
6	0.65	0.62	0.60	0.65	0.62	0.60	0.64	0.61	0.60	0.63	0.61	0.59	0.62	0.60	0.59	0.58
7	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	0.57	0.57
8	0.61	0.59	0.57	0.61	0.58	0.56	0.60	0.58	0.56	0.60	0.58	0.56	0.59	0.57	0.56	0.55
9	0.60	0.57	0.55	0.59	0.57	0.55	0.59	0.56	0.55	0.58	0.56	0.55	0.58	0.56	0.54	0.54
10	0.58	0.55	0.53	0.58	0.55	0.53	0.57	0.55	0.53	0.57	0.55	0.53	0.56	0.54	0.53	0.52

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	2899.81	2897.42	2882.48	2864.55	2830.49	2770.14	2713.38	2645.86	2551.45
45.0	2900.41	2890.25	2857.98	2813.76	2764.17	2694.26	2611.80	2525.76	2433.74
90.0	2896.22	2883.08	2854.40	2810.78	2748.04	2684.10	2611.20	2508.43	2409.24
135.0	2900.41	2894.43	2880.69	2847.82	2807.19	2736.68	2674.54	2601.64	2517.39
180.0	2899.81	2894.43	2870.53	2831.09	2777.91	2713.98	2644.66	2557.42	2451.66
225.0	2900.41	2908.17	2900.41	2886.07	2852.60	2806.00	2758.19	2672.15	2596.86
270.0	2896.22	2899.21	2896.22	2880.09	2852.01	2802.41	2739.07	2672.15	2596.86
315.0	2900.41	2895.63	2877.70	2850.81	2808.39	2752.82	2688.28	2603.43	2505.44
360.0	2899.81	2897.42	2882.48	2864.55	2830.49	2770.14	2713.38	2645.86	2551.45

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2449.27	2347.69	2223.41	2105.69	1958.70	1806.93	1665.91	1492.63	1308.59
45.0	2302.28	2177.99	2051.32	1907.91	1759.72	1618.71	1447.22	1264.37	1090.49
90.0	2304.07	2160.66	2040.56	1913.89	1747.17	1605.56	1452.00	1185.02	1102.68
135.0	2399.08	2292.72	2182.18	2042.35	1896.56	1765.10	1605.56	1429.89	1261.38
180.0	2348.89	2226.39	2097.92	1974.24	1843.38	1674.87	1526.69	1368.34	1161.90
225.0	2510.22	2393.10	2286.15	2164.25	2026.22	1879.23	1744.78	1582.85	1424.51
270.0	2489.90	2397.29	2287.34	2156.48	2022.04	1891.78	1737.61	1572.10	1413.75
315.0	2412.22	2290.33	2160.07	2036.98	1904.32	1730.44	1584.05	1426.30	1180.36
360.0	2449.27	2347.69	2223.41	2105.69	1958.70	1806.93	1665.91	1492.63	1308.59

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1147.26	977.56	770.21	607.69	454.72	317.29	173.88	105.22	71.88
45.0	904.06	730.18	550.32	383.61	311.31	146.99	88.91	57.54	41.23
90.0	908.48	740.04	559.65	392.52	244.21	145.80	88.08	58.56	39.20
135.0	1080.93	920.19	726.60	543.15	382.42	313.11	129.60	77.02	55.33
180.0	993.21	825.73	615.51	459.50	317.35	186.61	107.08	66.15	44.64
225.0	1180.66	1055.42	886.79	702.75	522.42	370.11	242.42	124.23	77.08
270.0	1230.91	1067.19	878.97	692.54	534.79	369.27	302.35	130.98	80.97
315.0	1057.27	893.60	706.28	528.10	380.15	240.15	143.88	84.07	58.74
360.0	1147.26	977.56	770.21	607.69	454.72	317.29	173.88	105.22	71.88

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	46.91	32.33	23.42	17.21	13.15	10.76	9.02	7.95	7.05
45.0	28.14	19.24	14.70	11.53	9.26	8.13	7.23	6.51	6.15
90.0	27.07	18.76	13.86	10.99	8.96	7.71	6.99	6.51	6.04
135.0	35.55	24.20	17.57	12.97	10.22	8.60	7.47	6.75	6.27
180.0	30.77	20.55	14.82	11.77	9.74	8.01	7.23	6.63	6.15
225.0	54.61	34.48	24.26	18.22	13.50	11.05	9.38	8.01	7.29
270.0	53.00	36.57	25.75	19.30	14.28	11.59	9.62	8.31	7.47
315.0	41.35	27.96	20.20	15.54	12.49	9.92	8.60	7.65	6.93
360.0	46.91	32.33	23.42	17.21	13.15	10.76	9.02	7.95	7.05

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	6.51	6.09	5.68	5.38	5.20	4.96	4.78	4.60	4.48
45.0	5.86	5.50	5.26	5.08	4.84	4.72	4.54	4.42	4.30
90.0	5.68	5.44	5.20	4.96	4.78	4.66	4.48	4.36	4.24
135.0	5.86	5.56	5.32	5.08	4.84	4.72	4.54	4.42	4.30
180.0	5.74	5.44	5.20	4.96	4.78	4.60	4.48	4.36	4.24
225.0	6.63	6.09	5.80	5.44	5.20	5.02	4.84	4.66	4.54
270.0	6.81	6.33	5.92	5.62	5.38	5.14	4.90	4.78	4.66
315.0	6.39	6.04	5.68	5.44	5.14	4.96	4.84	4.66	4.48
360.0	6.51	6.09	5.68	5.38	5.20	4.96	4.78	4.60	4.48

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	4.36	4.24	4.18	4.06	4.00	3.88	3.82	3.82	3.76
45.0	4.24	4.12	4.06	4.00	3.94	3.88	3.82	3.76	3.70
90.0	4.18	4.06	4.00	3.94	3.88	3.82	3.76	3.76	3.70
135.0	4.18	4.12	4.06	3.94	3.88	3.82	3.76	3.76	3.70
180.0	4.12	4.06	3.94	3.88	3.88	3.76	3.76	3.70	3.64
225.0	4.42	4.30	4.18	4.12	4.06	4.00	3.94	3.88	3.82
270.0	4.48	4.42	4.30	4.24	4.12	4.12	4.06	4.00	3.94
315.0	4.42	4.36	4.24	4.12	4.12	4.06	4.00	3.94	3.88
360.0	4.36	4.24	4.18	4.06	4.00	3.88	3.82	3.82	3.76

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	3.70	3.70	3.64	3.64	3.59	3.53	3.53	3.53	3.47
45.0	3.70	3.64	3.64	3.64	3.59	3.53	3.53	3.53	3.53
90.0	3.64	3.59	3.59	3.59	3.59	3.53	3.53	3.47	3.47
135.0	3.64	3.64	3.64	3.59	3.59	3.53	3.53	3.53	3.47
180.0	3.59	3.59	3.59	3.53	3.53	3.47	3.47	3.47	3.47
225.0	3.76	3.70	3.70	3.70	3.64	3.64	3.59	3.59	3.59
270.0	3.88	3.88	3.82	3.82	3.76	3.76	3.76	3.70	3.70
315.0	3.88	3.82	3.82	3.82	3.76	3.76	3.76	3.76	3.76
360.0	3.70	3.70	3.64	3.64	3.59	3.53	3.53	3.53	3.47

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

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	3.41	3.41	3.41	3.41	3.41	3.35	3.41	3.41	3.41
45.0	3.47	3.47	3.47	3.41	3.41	3.47	3.47	3.47	3.47
90.0	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41
135.0	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41
180.0	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.41	3.47
225.0	3.47	3.41	3.47	3.47	3.47	3.47	3.47	3.41	3.47
270.0	3.64	3.64	3.64	3.70	3.64	3.70	3.64	3.64	3.70
315.0	3.76	3.76	3.76	4.06	4.54	5.08	5.44	5.74	5.62
360.0	3.41	3.41	3.41	3.41	3.41	3.35	3.41	3.41	3.41

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	3.41	3.41	3.41	3.47	3.47	3.47	3.47	3.29	3.29
45.0	3.47	3.53	3.53	3.59	3.53	3.35	3.35	3.35	3.35
90.0	3.41	3.41	3.41	3.47	3.35	3.29	3.35	3.35	3.35
135.0	3.47	3.41	3.41	3.41	3.35	3.29	3.29	3.29	3.29
180.0	3.53	3.53	3.53	3.53	3.23	3.29	3.29	3.23	3.23
225.0	3.47	3.47	3.41	3.47	3.53	3.53	3.35	3.35	3.35
270.0	3.76	3.82	3.94	4.00	4.00	4.06	3.64	3.35	3.35
315.0	5.20	4.30	4.12	4.12	4.24	4.42	3.35	3.29	3.29
360.0	3.41	3.41	3.41	3.47	3.47	3.47	3.47	3.29	3.29

Intensity data(cd)

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