NATA LIGHTNG CO.,LTD.
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Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,Ching

LumCAT: 2-1563-M
Luminaire: 92.70.278.00
Report No: 221220-B005
Test No: 221220-C005
LampCAT: CREE CXA 1830 LES12
Lamp flux(lm): 1970.8
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 34.6800
Current(A): 0.4320
Power (W): 14.9810
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 1795.80
Efficiency(%): 91.12%
Lumens(lm)/Power(W): 119.87
Central intensity(cd): 5163.995
Maximum intensity(cd): 5163.995
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=28.1
[C90/270]Total=28.1
Field angle(10%Imax): [C0/180]Total=70.2
[C90/270]Total=70.2
Maximum s/h(1/2): C0_180=0.48 C90_270=0.48
Maximum s/h(1/4): C0_180=0.46 C90_270=0.46
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.12%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.609%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5163.995	0.000	0	.000%	.000%
1.0	5157.422	4.939	4.939	.251%	.275%
2.0	5132.998	14.770	19.708	.749%	1.097%
3.0	5087.810	24.445	44.153	1.240%	2.459%
4.0	5014.762	33.817	77.97	1.716%	4.342%
5.0	4913.854	42.712	120.682	2.167%	6.720%
6.0	4752.820	50.801	171.483	2.578%	9.549%
7.0	4577.819	57.915	229.398	2.939%	12.774%
8.0	4373.539	64.063	293.461	3.251%	16.342%
9.0	4126.237	68.886	362.347	3.495%	20.178%
10.0	3832.999	72.028	434.376	3.655%	24.188%
11.0	3555.372	73.825	508.201	3.746%	28.299%
12.0	3245.180	74.340	582.54	3.772%	32.439%
13.0	2917.734	73.138	655.679	3.711%	36.512%
14.0	2604.480	70.684	726.362	3.587%	40.448%
15.0	2297.574	67.298	793.66	3.415%	44.195%
16.0	2020.246	63.268	856.928	3.210%	47.719%
17.0	1739.855	58.555	915.483	2.971%	50.979%
18.0	1509.806	53.580	969.063	2.719%	53.963%
19.0	1304.406	48.962	1018.024	2.484%	56.689%
20.0	1155.053	45.015	1063.039	2.284%	59.196%
21.0	1032.717	42.010	1105.049	2.132%	61.535%
22.0	941.086	39.664	1144.713	2.013%	63.744%
23.0	866.357	37.925	1182.638	1.924%	65.856%
24.0	801.376	36.463	1219.101	1.850%	67.886%
25.0	757.794	35.452	1254.553	1.799%	69.861%
26.0	724.078	34.980	1289.533	1.775%	71.808%
27.0	696.368	34.752	1324.284	1.763%	73.744%
28.0	671.899	34.642	1358.926	1.758%	75.673%
29.0	652.434	34.648	1393.574	1.758%	77.602%
30.0	635.524	34.775	1428.349	1.765%	79.539%
31.0	619.735	34.932	1463.281	1.772%	81.484%
32.0	604.416	35.070	1498.352	1.780%	83.437%
33.0	588.992	35.158	1533.51	1.784%	85.394%
34.0	566.099	34.956	1568.466	1.774%	87.341%
35.0	522.965	33.822	1602.289	1.716%	89.224%
36.0	469.628	31.604	1633.893	1.604%	90.984%
37.0	411.070	28.723	1662.616	1.457%	92.584%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	348.359	25.349	1687.965	1.286%	93.995%
39.0	276.768	21.337	1709.302	1.083%	95.184%
40.0	221.459	17.376	1726.679	.882%	96.151%
41.0	146.410	13.100	1739.778	.665%	96.881%
42.0	89.390	8.567	1748.345	.435%	97.358%
43.0	49.535	5.146	1753.492	.261%	97.644%
44.0	25.029	2.814	1756.306	.143%	97.801%
45.0	16.006	1.577	1757.883	.080%	97.889%
46.0	13.504	1.154	1759.037	.059%	97.953%
47.0	12.040	1.016	1760.053	.052%	98.010%
48.0	11.009	0.932	1760.985	.047%	98.062%
49.0	10.375	0.878	1761.863	.045%	98.110%
50.0	9.912	0.846	1762.709	.043%	98.158%
51.0	9.605	0.826	1763.534	.042%	98.204%
52.0	9.441	0.817	1764.352	.041%	98.249%
53.0	9.262	0.814	1765.165	.041%	98.294%
54.0	9.127	0.811	1765.976	.041%	98.339%
55.0	9.000	0.809	1766.785	.041%	98.385%
56.0	8.881	0.808	1767.593	.041%	98.430%
57.0	8.769	0.807	1768.4	.041%	98.474%
58.0	8.672	0.807	1769.206	.041%	98.519%
59.0	8.575	0.806	1770.013	.041%	98.564%
60.0	8.507	0.807	1770.82	.041%	98.609%
61.0	8.410	0.807	1771.627	.041%	98.654%
62.0	8.343	0.807	1772.434	.041%	98.699%
63.0	8.283	0.809	1773.243	.041%	98.744%
64.0	8.231	0.810	1774.053	.041%	98.789%
65.0	8.186	0.812	1774.866	.041%	98.835%
66.0	8.126	0.814	1775.68	.041%	98.880%
67.0	8.089	0.815	1776.495	.041%	98.925%
68.0	8.074	0.819	1777.314	.042%	98.971%
69.0	8.029	0.822	1778.135	.042%	99.017%
70.0	7.992	0.823	1778.958	.042%	99.062%
71.0	7.962	0.825	1779.783	.042%	99.108%
72.0	7.955	0.828	1780.61	.042%	99.154%
73.0	7.910	0.830	1781.44	.042%	99.201%
74.0	7.887	0.830	1782.27	.042%	99.247%
75.0	7.895	0.834	1783.104	.042%	99.293%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.865	0.837	1783.941	.042%	99.340%
77.0	7.850	0.838	1784.779	.043%	99.387%
78.0	7.858	0.841	1785.62	.043%	99.433%
79.0	7.828	0.843	1786.462	.043%	99.480%
80.0	7.835	0.844	1787.307	.043%	99.527%
81.0	7.917	0.852	1788.159	.043%	99.575%
82.0	7.895	0.857	1789.016	.044%	99.622%
83.0	7.843	0.856	1789.872	.043%	99.670%
84.0	7.813	0.853	1790.724	.043%	99.718%
85.0	7.768	0.850	1791.575	.043%	99.765%
86.0	7.753	0.848	1792.423	.043%	99.812%
87.0	7.693	0.845	1793.269	.043%	99.859%
88.0	7.693	0.843	1794.111	.043%	99.906%
89.0	7.671	0.842	1794.953	.043%	99.953%
90.0	7.686	0.842	1795.795	.043%	100.000%

Zonal flux distribution table

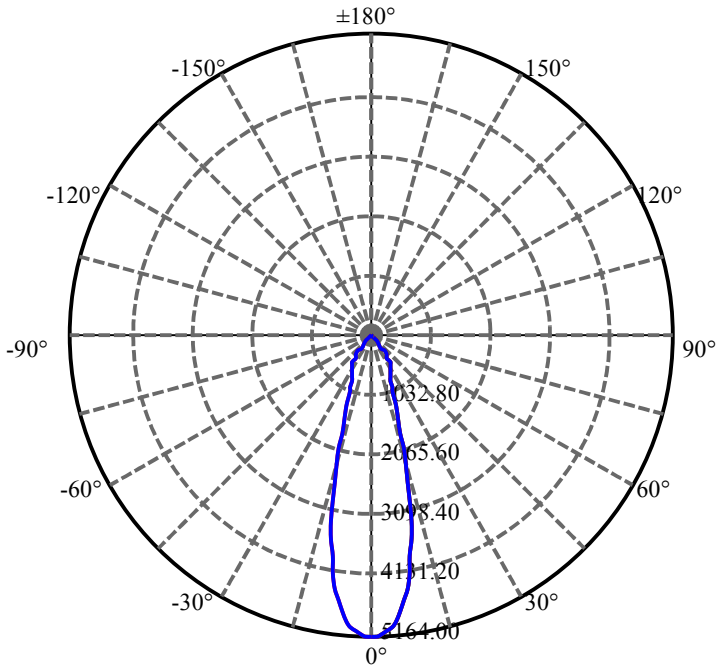
ZONAL LUMEN SUMMARY

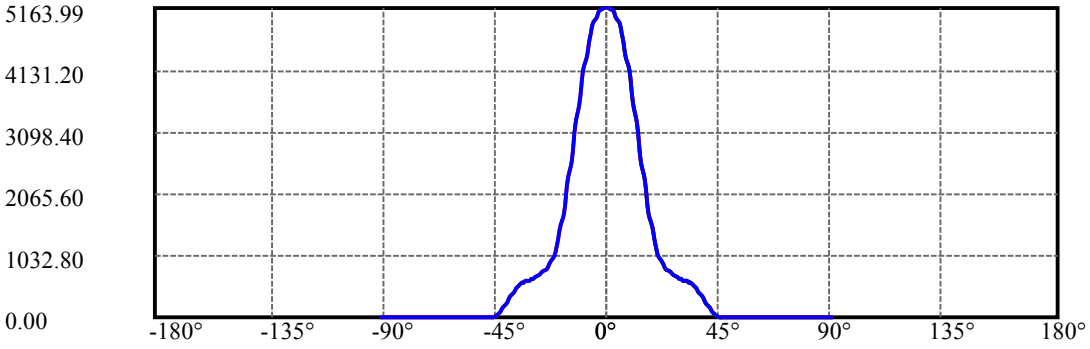
Zone	Lumens	%Lamp	%Fixt
0-30	1428.35	72.48%	79.54%
0-40	1726.68	87.61%	96.15%
0-60	1770.82	89.85%	98.61%
0-90	1794.95	91.08%	99.95%
0-120	1794.95	91.08%	99.95%
0-180	1795.80	91.12%	100.00%
60-90	24.94	1.27%	1.39%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-30.24	1436.64	72.90%	80.00%

ZONAL LUMEN SUMMARY

0-10	434.38
10-20	628.66
20-30	365.31
30-40	298.33
40-50	36.03
50-60	8.11
60-70	8.14
70-80	8.35
80-90	7.65
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):

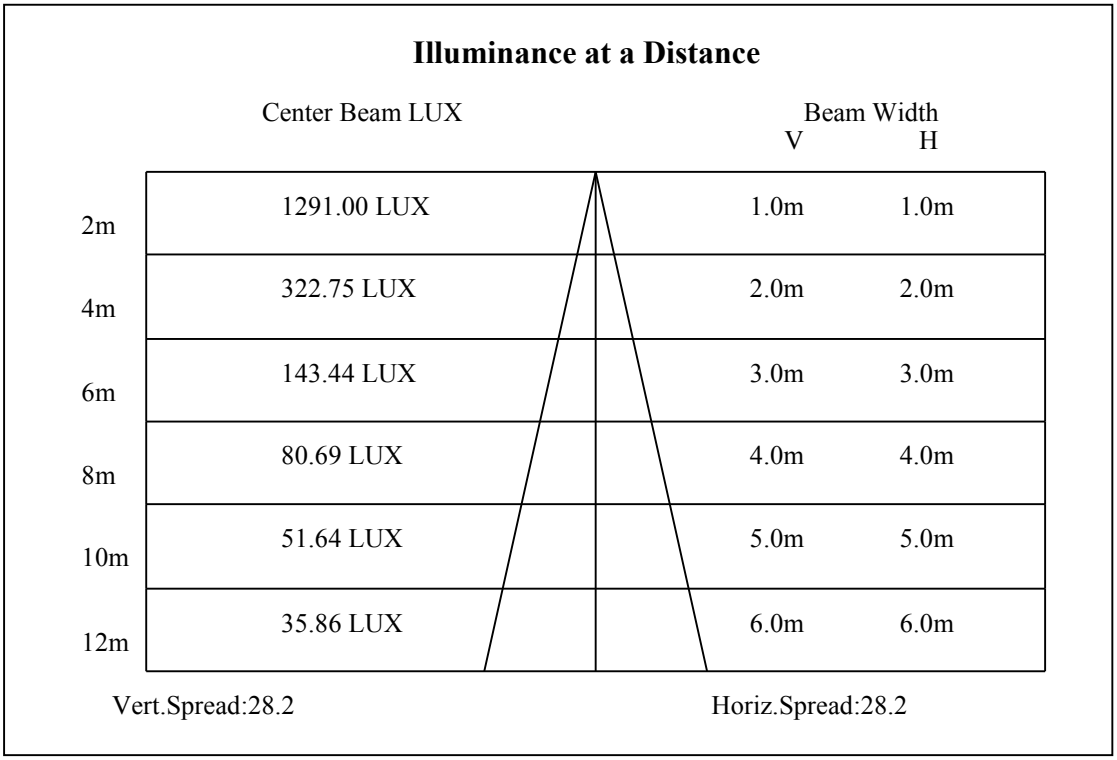
C0/C180:

C90/C270:

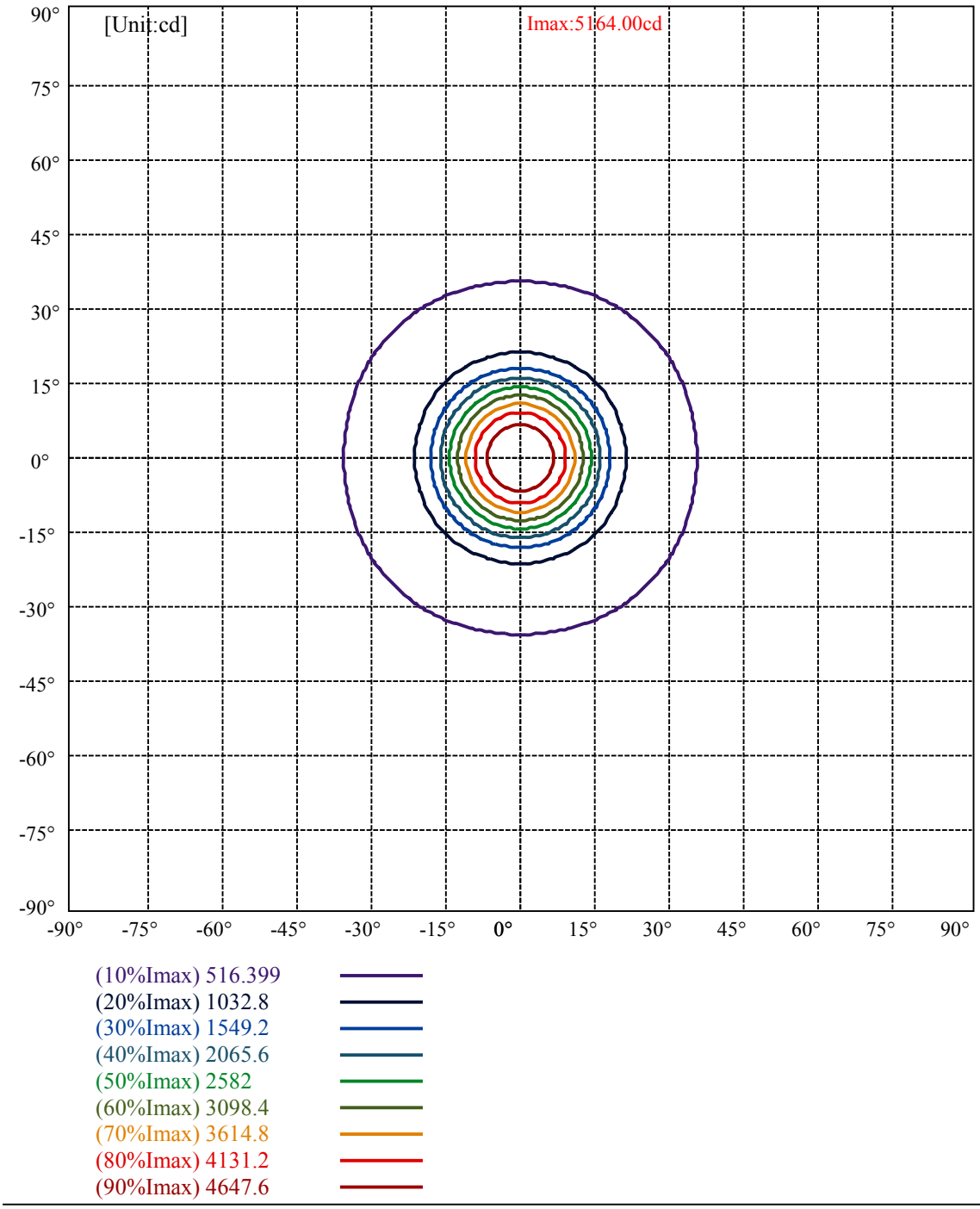
Field angle(10%Imax):C0/180Left:35.1 Right:35.1
:C90/270Left:35.1 Right:35.1

Beam Angle(50%Imax):C0/180Left:14.1 Right:14.1
:C90/270Left:14.1 Right:14.1

Lux distance Curve



ISO-Intensity(V-H)

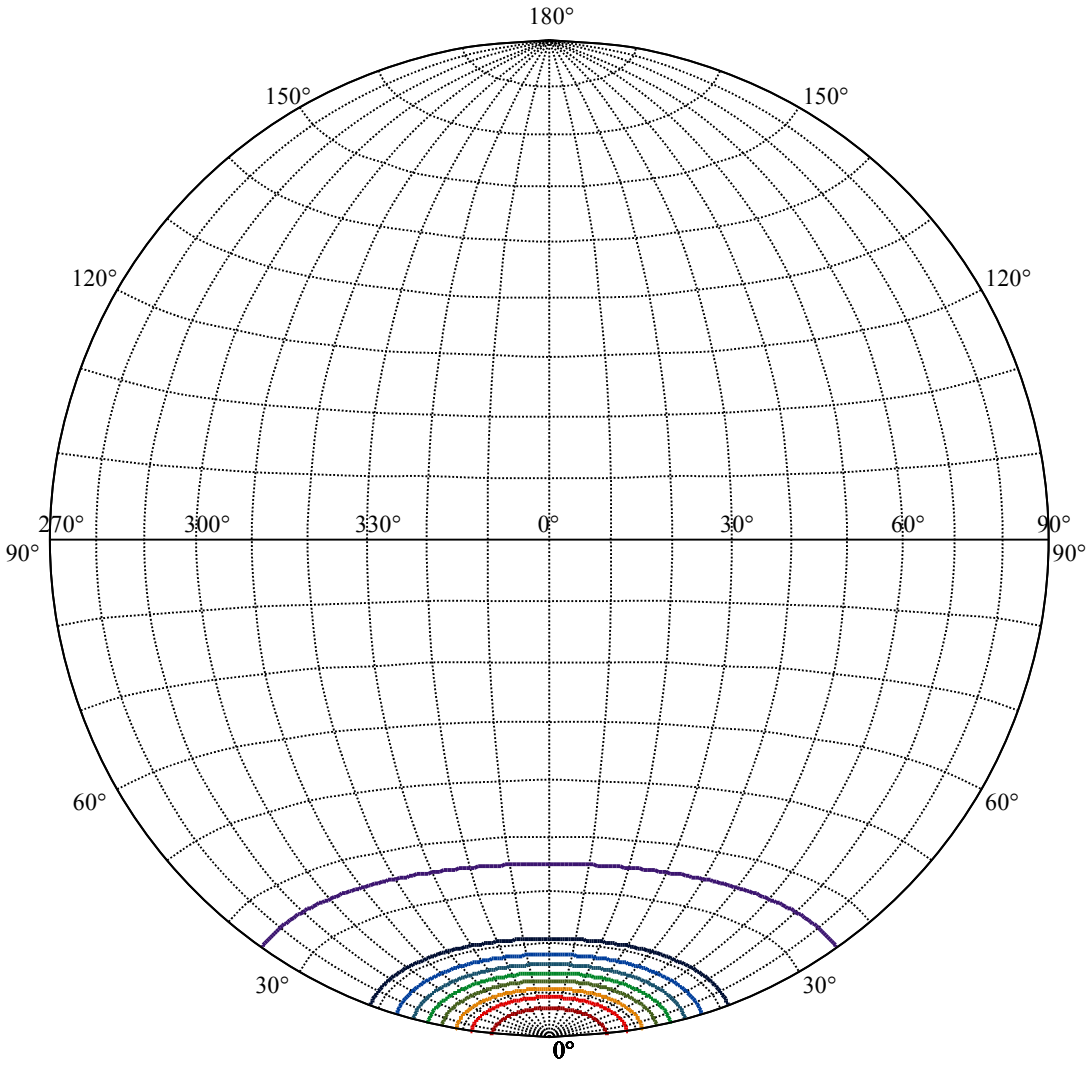


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/12/20
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

ISO candela diagram on circular web



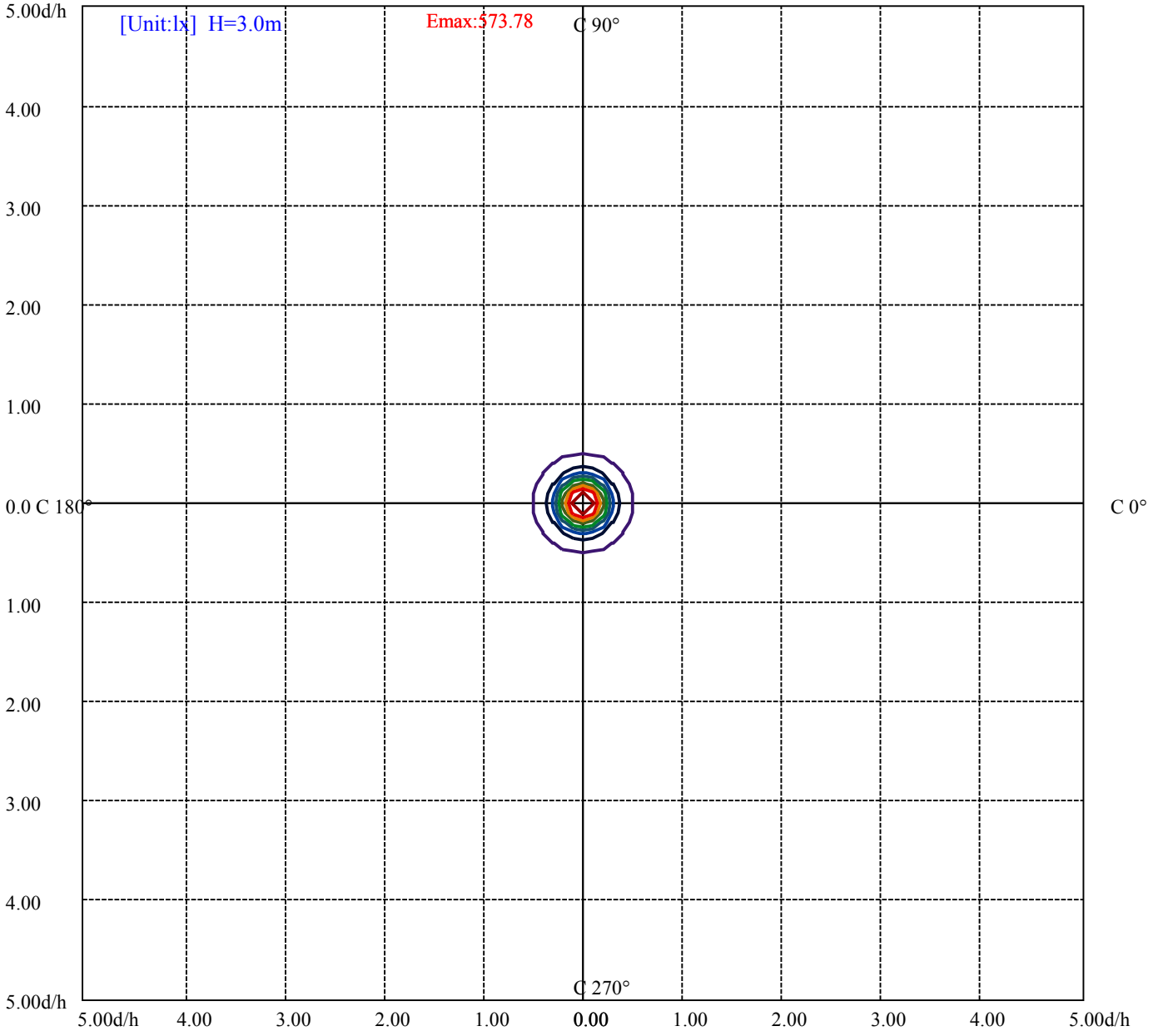
House [Unit:cd] Road

Imax:5164.00

(10%Imax) 516.399
(20%Imax) 1032.8
(30%Imax) 1549.2
(40%Imax) 2065.6
(50%Imax) 2582
(60%Imax) 3098.4
(70%Imax) 3614.8
(80%Imax) 4131.2
(90%Imax) 4647.6

Equipment: GMS1980 Date: 2022/12/20 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

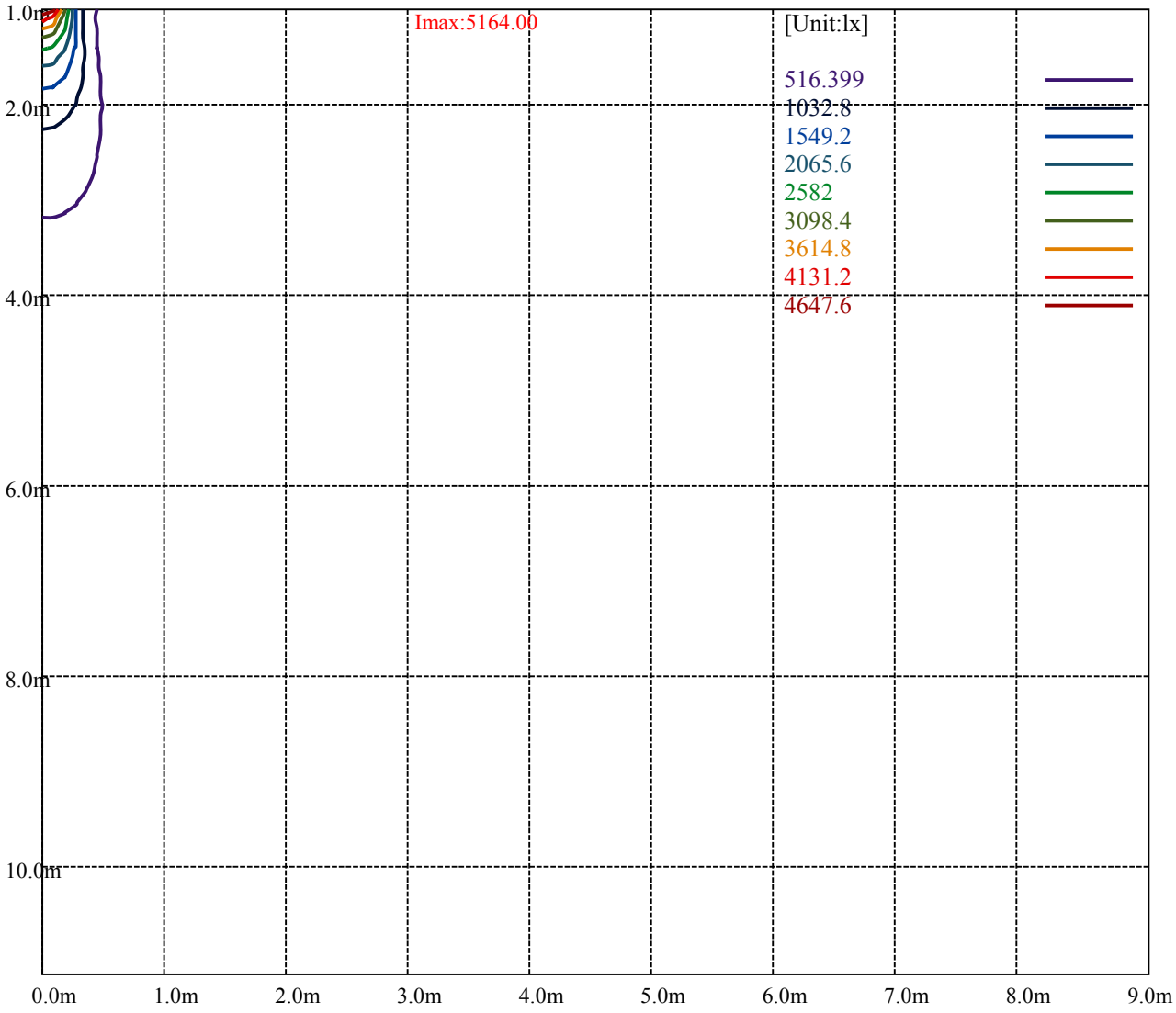
ISO illuminance diagram



(10%Emax) 57.37767
(20%Emax) 114.7556
(30%Emax) 172.1333
(40%Emax) 229.5111
(50%Emax) 286.8889
(60%Emax) 344.2667
(70%Emax) 401.6444
(80%Emax) 459.0211
(90%Emax) 516.3989

Equipment: GMS1980
Temperature(°C): 25.0
Date: 2022/12/20
Humidity(%): 65.0%
Operator: NT07
Distance(m): 7.73

Space ISO Lux diagram



Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/12/20
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

2-1563-M

Luminance Limitting Curve(no luminous side)

Luminance Table

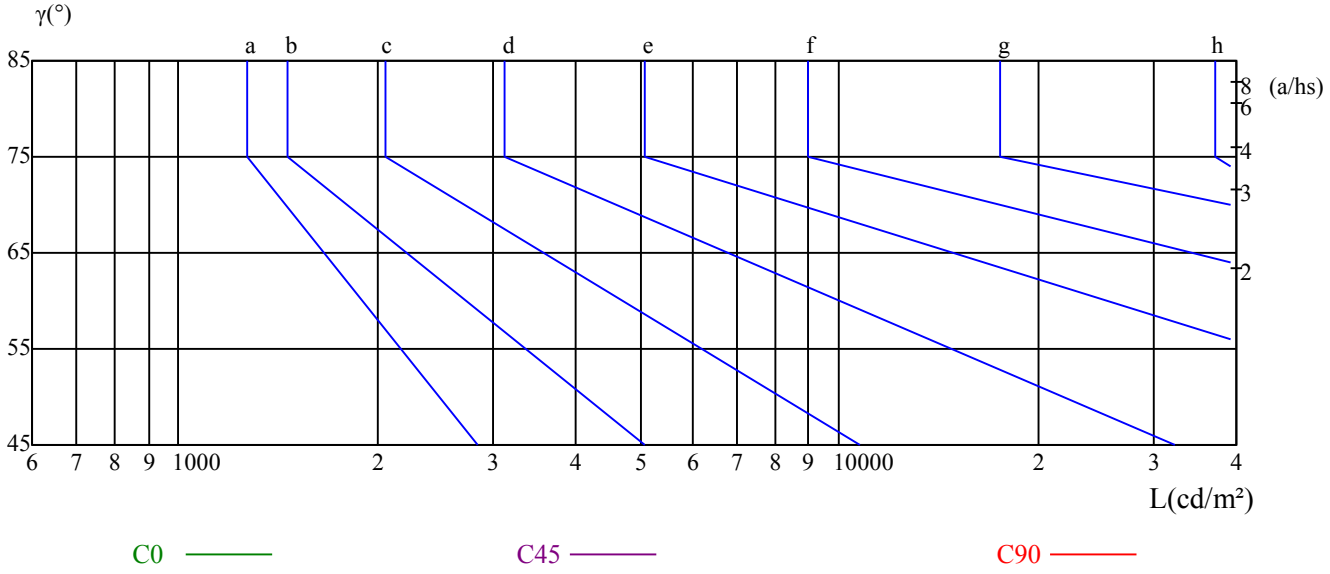
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

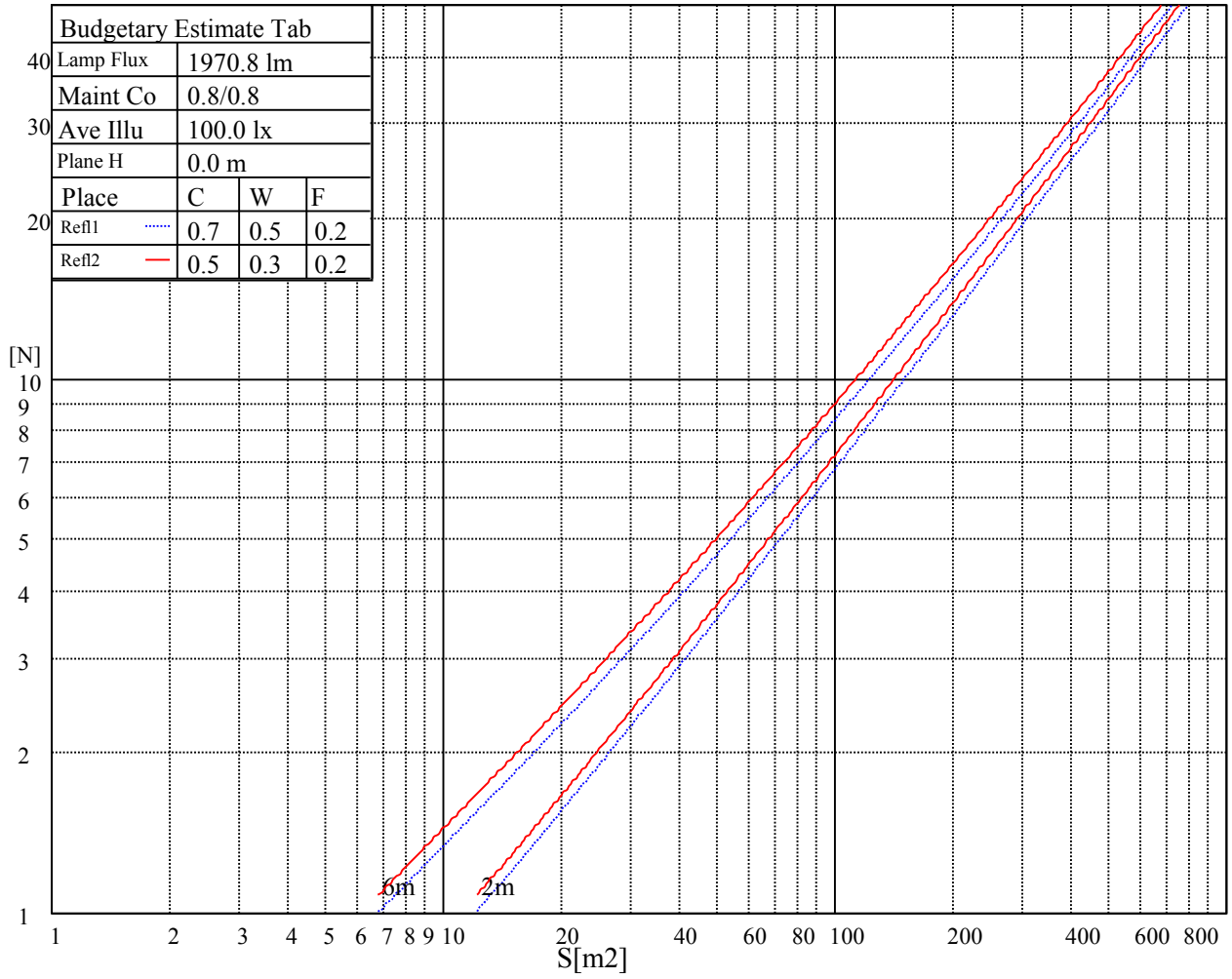


Equipment: GMS1980
Temperature(°C): 25.0

Date: 2022/12/20
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.73

Budgetary Estimate Table

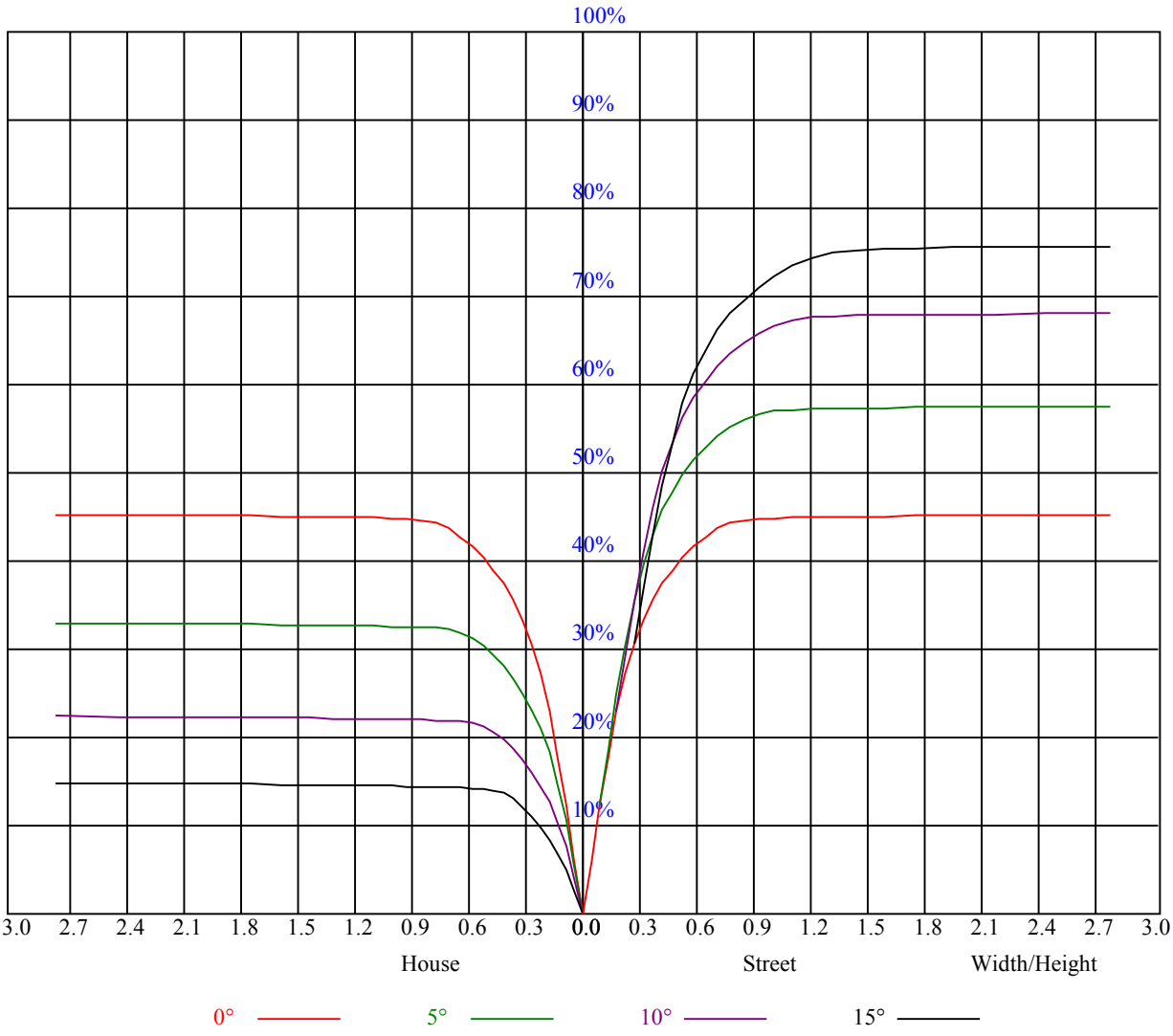


Equipment: GMS1980 Date: 2022/12/20 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 65.0% Distance(m): 7.73

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	1.08	1.08	1.08	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.02	0.99	0.98	1.00	0.98	0.96	0.96	0.94	0.93	0.93	0.91	0.90	0.89	0.89	0.88	0.86
2	0.96	0.92	0.90	0.94	0.91	0.89	0.91	0.89	0.87	0.88	0.86	0.85	0.86	0.84	0.83	0.82
3	0.90	0.86	0.83	0.89	0.85	0.82	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.77
4	0.86	0.81	0.78	0.85	0.81	0.77	0.83	0.79	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.74
5	0.81	0.77	0.73	0.81	0.76	0.73	0.79	0.75	0.72	0.78	0.74	0.72	0.76	0.73	0.71	0.70
6	0.78	0.73	0.70	0.77	0.72	0.69	0.76	0.72	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
7	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
8	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.66	0.63	0.69	0.65	0.62	0.68	0.65	0.62	0.61
9	0.68	0.63	0.60	0.68	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.59
10	0.65	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.58	0.64	0.60	0.58	0.63	0.60	0.57	0.56

Coefficient Utilization Curve



Equipment: GMS1980	Date: 2022/12/20	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	5159.07	5160.86	5152.49	5122.62	5065.85	4966.66	4825.05	4661.32	4441.43
45.0	5165.04	5156.68	5127.99	5056.29	4964.87	4839.39	4627.26	4423.51	4196.45
90.0	5166.83	5159.66	5130.98	5078.40	4979.81	4855.52	4667.30	4439.04	4208.99
135.0	5165.04	5167.43	5152.49	5120.82	5063.46	4992.95	4827.44	4669.69	4507.76
180.0	5159.07	5148.31	5115.45	5067.64	4995.34	4879.42	4721.67	4548.39	4311.17
225.0	5165.04	5154.29	5132.77	5102.90	5049.12	4966.06	4867.47	4723.47	4559.74
270.0	5166.83	5159.07	5135.76	5092.14	5031.79	4958.89	4805.93	4660.13	4504.77
315.0	5165.04	5153.09	5116.04	5061.67	4967.86	4851.94	4680.44	4497.00	4257.99
360.0	5159.07	5160.86	5152.49	5122.62	5065.85	4966.66	4825.05	4661.32	4441.43

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4220.94	3946.08	3648.51	3366.48	3039.03	2703.82	2409.24	2127.80	1809.92
45.0	3906.64	3593.54	3298.36	2957.77	2653.63	2326.78	2023.83	1777.65	1526.69
90.0	3952.65	3611.47	3323.46	3025.89	2685.30	2357.25	2081.79	1794.98	1541.03
135.0	4232.30	3945.48	3706.47	3340.19	3003.18	2734.89	2370.40	2097.33	1839.19
180.0	4072.76	3776.98	3460.29	3167.50	2831.09	2497.07	2216.24	1949.74	1646.79
225.0	4364.35	4081.72	3828.97	3555.90	3233.83	2902.20	2607.02	2280.77	1973.04
270.0	4244.25	3982.53	3758.46	3419.66	3098.79	2846.03	2479.75	2199.50	1936.59
315.0	4015.99	3726.19	3418.46	3128.06	2797.03	2467.79	2192.33	1934.20	1645.59
360.0	4220.94	3946.08	3648.51	3366.48	3039.03	2703.82	2409.24	2127.80	1809.92

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1591.22	1407.18	1253.62	1100.05	1000.26	919.00	838.93	789.93	751.09
45.0	1325.32	1178.33	1063.60	942.90	875.98	818.02	764.24	731.38	705.68
90.0	1351.61	1176.77	1055.89	949.89	875.92	811.03	761.67	728.09	698.45
135.0	1547.60	1363.56	1190.88	1036.12	945.29	872.99	807.26	758.26	726.00
180.0	1433.47	1191.71	1088.46	967.22	885.66	815.87	763.58	728.33	697.44
225.0	1729.25	1485.46	1182.09	1130.82	1001.58	912.01	834.51	777.44	739.80
270.0	1646.79	1448.41	1281.10	1115.59	1010.42	926.17	844.31	793.52	754.08
315.0	1453.19	1183.82	1124.79	1019.15	933.58	855.78	796.51	755.40	720.08
360.0	1591.22	1407.18	1253.62	1100.05	1000.26	919.00	838.93	789.93	751.09

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	717.03	690.15	670.43	651.31	633.98	620.24	605.89	592.75	562.87
45.0	681.18	659.07	640.55	622.63	607.69	593.35	572.43	537.78	490.57
90.0	676.94	656.27	637.86	622.27	608.11	590.84	574.29	543.03	488.48
135.0	696.72	672.82	654.29	636.37	621.43	605.89	592.15	573.63	533.59
180.0	674.97	653.58	634.70	619.70	605.77	589.58	571.72	538.02	479.76
225.0	710.58	681.06	659.97	645.51	628.36	612.47	599.86	583.55	550.09
270.0	718.83	691.34	671.03	651.90	634.58	620.24	605.30	591.55	559.29
315.0	694.69	670.91	650.65	634.52	617.96	602.73	590.30	568.49	519.07
360.0	717.03	690.15	670.43	651.31	633.98	620.24	605.89	592.75	562.87

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	514.47	459.50	405.72	316.69	309.52	185.11	115.74	68.06	34.24
45.0	420.66	361.51	307.13	226.46	159.24	104.09	54.08	24.92	15.48
90.0	436.20	377.10	306.95	235.31	173.94	113.95	62.92	32.33	16.37
135.0	478.62	422.45	362.70	307.73	217.92	159.30	99.13	51.03	25.99
180.0	426.22	366.46	288.73	226.22	166.41	100.33	57.18	28.68	15.06
225.0	504.61	436.20	385.65	315.67	238.06	187.39	124.64	75.47	34.96
270.0	510.29	458.30	399.15	319.08	301.75	187.86	119.74	73.44	38.84
315.0	465.95	407.04	330.85	266.98	204.83	133.25	81.68	42.36	19.30
360.0	514.47	459.50	405.72	316.69	309.52	185.11	115.74	68.06	34.24

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	17.51	14.40	12.91	11.35	10.46	9.92	9.62	9.44	9.26
45.0	13.80	12.31	11.11	10.52	10.04	9.56	9.32	9.20	9.08
90.0	14.04	12.31	10.88	10.34	9.98	9.74	9.56	9.38	9.20
135.0	15.12	13.50	12.19	11.05	10.64	9.92	9.62	9.44	9.26
180.0	13.74	12.25	10.93	10.46	9.86	9.44	9.26	9.20	9.02
225.0	19.12	14.22	12.79	11.41	10.46	10.04	9.74	9.56	9.38
270.0	19.24	15.42	13.80	12.13	11.23	10.76	9.98	9.74	9.56
315.0	15.48	13.62	11.71	10.82	10.34	9.92	9.74	9.56	9.32
360.0	17.51	14.40	12.91	11.35	10.46	9.92	9.62	9.44	9.26

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	9.14	8.96	8.90	8.72	8.66	8.54	8.43	8.37	8.31
45.0	8.90	8.84	8.72	8.66	8.54	8.48	8.43	8.31	8.25
90.0	9.14	8.96	8.84	8.72	8.66	8.54	8.48	8.37	8.31
135.0	9.08	9.02	8.84	8.78	8.66	8.60	8.54	8.43	8.37
180.0	8.90	8.78	8.66	8.60	8.48	8.37	8.37	8.31	8.25
225.0	9.20	9.08	8.96	8.84	8.78	8.66	8.60	8.48	8.43
270.0	9.38	9.26	9.14	8.96	8.84	8.78	8.66	8.54	8.48
315.0	9.26	9.08	8.96	8.84	8.72	8.60	8.54	8.48	8.37
360.0	9.14	8.96	8.90	8.72	8.66	8.54	8.43	8.37	8.31

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	8.25	8.19	8.13	8.07	8.07	8.01	8.01	7.95	7.95
45.0	8.25	8.19	8.13	8.07	8.07	8.07	8.01	7.95	7.95
90.0	8.25	8.19	8.19	8.07	8.07	8.07	8.01	8.01	7.95
135.0	8.31	8.25	8.19	8.13	8.07	8.07	8.01	7.95	7.95
180.0	8.19	8.13	8.13	8.07	8.01	8.01	7.95	7.95	7.95
225.0	8.37	8.31	8.25	8.19	8.13	8.13	8.07	8.07	8.01
270.0	8.37	8.37	8.31	8.25	8.19	8.19	8.13	8.07	8.01
315.0	8.31	8.25	8.19	8.19	8.13	8.07	8.07	8.01	7.95
360.0	8.25	8.19	8.13	8.07	8.07	8.01	8.01	7.95	7.95

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	7.95	7.89	7.83	7.83	7.83	7.83	7.83	7.83	7.77
45.0	7.95	7.89	7.89	7.95	7.89	7.89	7.89	7.83	7.89
90.0	7.95	7.89	7.89	7.89	7.89	7.89	7.89	7.83	7.89
135.0	7.95	7.89	7.89	7.89	7.83	7.83	7.83	7.83	7.83
180.0	7.89	7.89	7.83	7.83	7.83	7.77	7.83	7.77	7.77
225.0	8.01	7.95	7.95	7.95	7.95	7.89	7.89	7.89	7.89
270.0	8.01	8.01	7.95	7.95	7.89	7.89	7.89	7.83	7.89
315.0	7.95	7.89	7.89	7.89	7.83	7.83	7.83	7.83	7.77
360.0	7.95	7.89	7.83	7.83	7.83	7.83	7.83	7.83	7.77

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	7.77	7.77	7.77	7.77	7.77	7.77	7.71	7.59	7.65
45.0	8.31	8.07	7.83	7.83	7.77	7.71	7.71	7.71	7.71
90.0	8.25	8.19	7.83	7.83	7.71	7.71	7.65	7.71	7.71
135.0	7.77	7.83	7.83	7.83	7.71	7.71	7.71	7.65	7.65
180.0	7.77	7.83	7.77	7.77	7.65	7.65	7.65	7.71	7.59
225.0	7.83	7.83	8.01	7.89	7.83	7.89	7.71	7.77	7.71
270.0	7.89	7.89	7.95	7.83	7.89	7.77	7.77	7.77	7.71
315.0	7.77	7.77	7.77	7.77	7.83	7.83	7.65	7.65	7.65
360.0	7.77	7.77	7.77	7.77	7.77	7.77	7.71	7.59	7.65

Intensity data(cd)

C/γ(°)	90.0
0.0	7.65
45.0	7.77
90.0	7.71
135.0	7.65
180.0	7.65
225.0	7.71
270.0	7.71
315.0	7.65
360.0	7.65