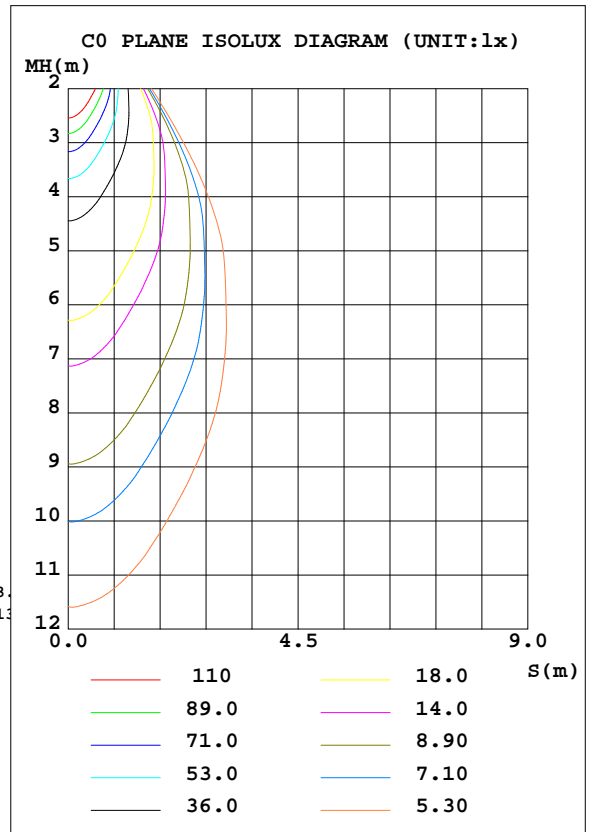
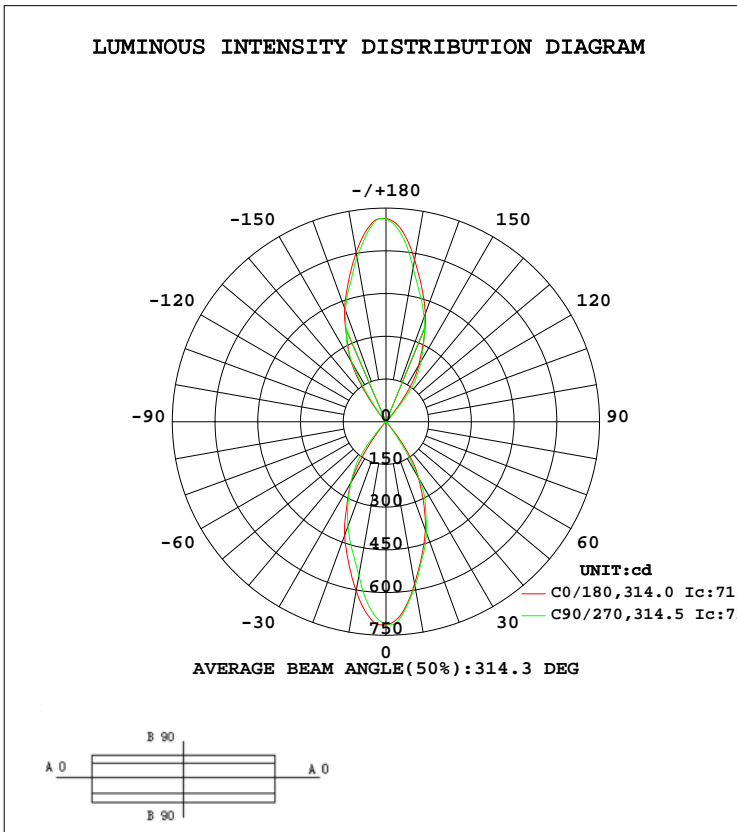


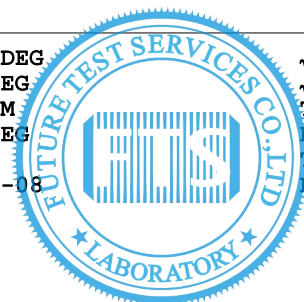
LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.1V I:0.0523A P:9.690W PF:0.8052 Freq:50.00Hz Lamp Flux:879.896x1 lm		
NAME: LIGHTING	TYPE:--	WEIGHT:--
SPEC.:HOWLDE-10/3K	DIM.: --	SERIAL No.:FTS21040703L-02
MFR.: ACT	SUR.:1160mm	Shielding Angle:--

DATA OF LAMP		PHOTOMETRIC DATA Eff: 90.80 lm/W			
MODEL	--	I _{max} (cd)	713.9	S/MH(C0/180)	0.72
NOMINAL POWER(W)	--	LOR(%)	100.0	S/MH(C90/270)	0.67
RATED VOLTAGE(V)	--	TOTAL FLUX(lm)	879.90	η UP, DN(C0-180)	25.7,24.3
NOMINAL FLUX(lm)	879.896	CIE CLASS	DIFFUSE	η UP, DN(C180-360)	24.3,25.7
LAMPS INSIDE	1	η up(%)	50.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	--	η down(%)	50.0	CIBSE SHR MAX	0.80



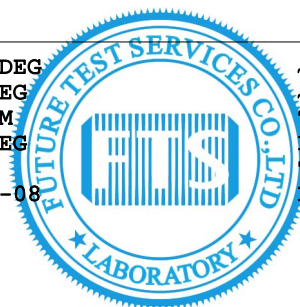
C Range: 0 - 360DEG γ Range: 0 - 180DEG
 C Interval: 5.0DEG γ Interval: 0.5DEG
 Test Speed: MEDIUM Test System:EVERFINE GO-2000_V1 SYSTEM V2.0.404.7
 Temperature:25.4DEG Humidity:61.2%
 Operators:魏兆文 Test Distance:13.650m [K=0.7326]
 Test Date:2021-04-08 Remarks: --



ZONAL FLUX DIAGRAM
ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	Φ lum,lamp
10	578.1	587.8	586.5	596.5	603.4	572.4	549.4	549.8	0- 10	60.98	60.98	6.93,6.93
20	404.1	409.7	417.1	422.5	425.3	403.8	391.0	388.0	10- 20	136.1	197.1	22.4,22.4
30	229.8	233.0	235.6	238.4	246.6	246.0	247.2	232.9	20- 30	146.5	343.6	39.1,39.1
40	31.79	16.87	18.96	20.34	27.78	53.13	71.25	59.12	30- 40	82.58	426.2	48.4,48.4
50	4.205	2.655	2.812	2.614	2.551	4.367	5.939	5.608	40- 50	8.276	434.5	49.4,49.4
60	3.046	1.641	1.433	1.485	1.324	2.352	2.677	2.966	50- 60	2.404	436.9	49.7,49.7
70	2.263	1.931	1.544	1.652	1.502	2.166	2.110	2.600	60- 70	2.030	438.9	49.9,49.9
80	0.1243	0.0366	0.0272	0.0361	0.0410	0.0846	0.1521	0.1520	70- 80	1.026	439.9	50,50
90	0	0	0	0	0	0	0	0	80- 90	0.0053	439.9	50,50
100	0.1243	0.1520	0.1521	0.0846	0.0410	0.0361	0.0272	0.0366	90-100	0.0053	440.0	50,50
110	2.263	2.600	2.110	2.166	1.502	1.652	1.544	1.931	100-110	1.026	441.0	50.1,50.1
120	3.046	2.966	2.677	2.352	1.324	1.485	1.433	1.641	110-120	2.030	443.0	50.3,50.3
130	4.205	5.608	5.939	4.367	2.551	2.614	2.812	2.655	120-130	2.404	445.4	50.6,50.6
140	31.79	59.12	71.25	53.13	27.78	20.34	18.96	16.87	130-140	8.276	453.7	51.6,51.6
150	229.8	232.9	247.2	246.0	246.6	238.4	235.6	233.0	140-150	82.58	536.3	60.9,60.9
160	404.1	388.0	391.0	403.8	425.3	422.5	417.1	409.7	150-160	146.5	682.8	77.6,77.6
170	578.1	549.8	549.4	572.4	603.4	596.5	586.5	587.8	160-170	136.1	818.9	93.1,93.1
180	713.7	713.7	713.6	713.6	713.7	713.7	713.6	713.6	170-180	60.98	879.9	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

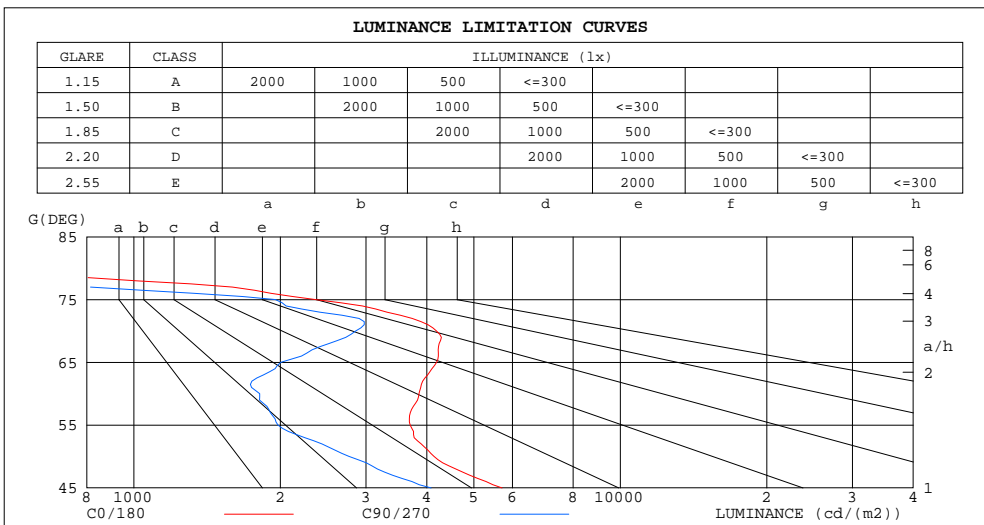
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: MEDIUM
 Temperature:25.4DEG
 Operators:魏兆文
 Test Date:2021-04-08



γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000_V1 SYSTEM V2.0.404.7
 Humidity:61.2%
 Test Distance:13.650m [K=0.7326]
 Remarks: --

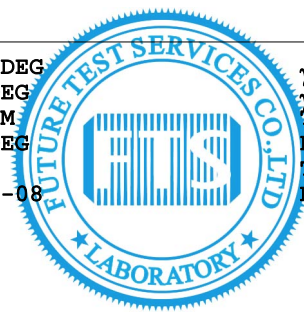
LUMINANCE LIMITATION CURVES

Test:U:230.1V I:0.0523A P:9.690W PF:0.8052 Freq:50.00Hz Lamp Flux:879.896x1 lm		
NAME: LIGHTING	TYPE:--	WEIGHT:--
SPEC.:HOWLDE-10/3K	DIM.: --	SERIAL No.:FTS21040703L-02
MFR.: ACT	SUR.:1160mm	Shielding Angle:--



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	0	0
80	453	99
75	2361	1954
70	4188	2858
65	4191	2004
60	3856	1815
55	3697	1978
50	4141	2769
45	5711	4083

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: MEDIUM
 Temperature:25.4DEG
 Operators:魏兆文
 Test Date:2021-04-08

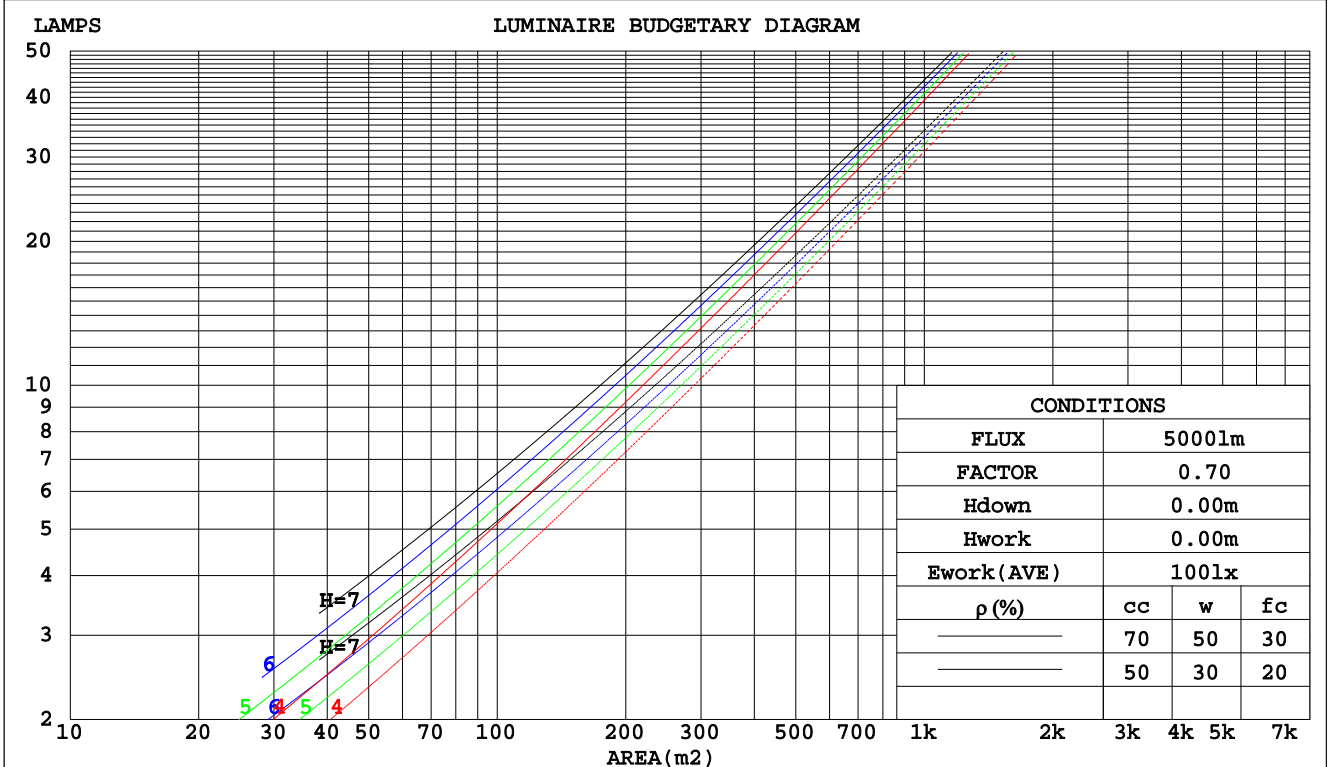


γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000_V1 SYSTEM V2.0.404.7
 Humidity:61.2%
 Test Distance:13.650m [K=0.7326]
 Remarks: --

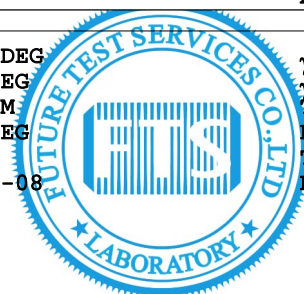
CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.1V I:0.0523A P:9.690W PF:0.8052 Freq:50.00Hz Lamp Flux:879.896x1 lm		
NAME: LIGHTING	TYPE:--	WEIGHT:--
SPEC.:HOWLDE-10/3K	DIM.: --	SERIAL No.:FTS21040703L-02
MFR.: ACT	SUR.:1160mm	Shielding Angle:--

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.07	1.07	1.07	.99	.99	.99	.83	.83	.83	.69	.69	.69	.56	.56	.56	.50
1.0	.97	.94	.91	.90	.87	.85	.77	.75	.73	.65	.63	.62	.53	.53	.52	.47
2.0	.88	.83	.79	.82	.78	.75	.71	.68	.66	.60	.58	.57	.51	.50	.49	.44
3.0	.80	.75	.70	.75	.70	.66	.65	.62	.59	.56	.54	.52	.48	.46	.45	.41
4.0	.74	.67	.63	.69	.64	.60	.61	.57	.54	.53	.50	.48	.45	.44	.42	.39
5.0	.68	.61	.57	.64	.58	.54	.56	.52	.49	.49	.47	.44	.43	.41	.39	.37
6.0	.63	.56	.52	.59	.54	.49	.53	.48	.45	.47	.43	.41	.41	.39	.37	.34
7.0	.58	.52	.47	.55	.49	.45	.49	.45	.42	.44	.41	.38	.39	.37	.35	.33
8.0	.54	.48	.44	.52	.46	.42	.46	.42	.39	.41	.38	.36	.37	.35	.33	.31
9.0	.51	.45	.40	.48	.43	.39	.44	.39	.36	.39	.36	.34	.35	.33	.31	.29
10.0	.48	.42	.38	.45	.40	.36	.41	.37	.34	.37	.34	.32	.33	.31	.29	.28



C Range: 0 - 360DEG
C Interval: 5.0DEG
Test Speed: MEDIUM
Temperature:25.4DEG
Operators:魏兆文
Test Date:2021-04-08



γ Range: 0 - 180DEG
γ Interval: 0.5DEG
Test System:EVERFINE GO-2000_V1 SYSTEM V2.0.404.7
Humidity:61.2%
Test Distance:13.650m [K=0.7326]
Remarks: --

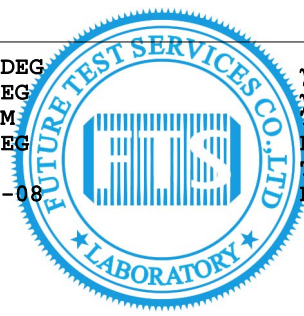
WEC AND CCEC

Test:U:230.1V I:0.0523A P:9.690W PF:0.8052 Freq:50.00Hz Lamp Flux:879.896x1 lm		
NAME: LIGHTING	TYPE:--	WEIGHT:--
SPEC.:HOWLDE-10/3K	DIM.: --	SERIAL No.:FTS21040703L-02
MFR.: ACT	SUR.:1160mm	Shielding Angle:--

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.213	.121	.038	.191	.109	.035	.150	.086	.028	.113	.065	.021	.078	.045	.015	
2.0	.199	.109	.033	.179	.099	.030	.142	.079	.025	.108	.061	.019	.076	.043	.014	
3.0	.186	.099	.030	.168	.090	.027	.134	.073	.022	.103	.056	.017	.074	.041	.013	
4.0	.174	.090	.027	.158	.083	.024	.127	.067	.020	.098	.053	.016	.071	.039	.012	
5.0	.163	.083	.024	.148	.076	.022	.120	.062	.018	.093	.049	.015	.069	.037	.011	
6.0	.154	.077	.022	.140	.071	.020	.114	.058	.017	.089	.046	.014	.066	.035	.010	
7.0	.145	.072	.020	.133	.066	.019	.108	.055	.016	.085	.044	.013	.064	.033	.010	
8.0	.138	.067	.019	.126	.062	.017	.103	.051	.015	.082	.041	.012	.062	.032	.009	
9.0	.130	.063	.018	.119	.058	.016	.098	.049	.014	.078	.039	.011	.060	.030	.009	
10.0	.124	.059	.017	.114	.055	.015	.094	.046	.013	.075	.037	.011	.057	.029	.008	

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.571	.571	.571	.488	.488	.488	.333	.333	.333	.191	.191	.191	.061	.061	.061	
1.0	.558	.541	.526	.477	.464	.453	.326	.319	.313	.188	.185	.182	.060	.060	.059	
2.0	.547	.519	.496	.468	.447	.429	.321	.309	.299	.185	.180	.175	.059	.058	.057	
3.0	.537	.502	.475	.460	.433	.412	.316	.301	.289	.183	.176	.170	.059	.057	.056	
4.0	.529	.490	.460	.454	.423	.400	.312	.295	.281	.181	.173	.166	.058	.056	.055	
5.0	.522	.480	.449	.448	.415	.391	.309	.290	.276	.179	.170	.164	.058	.056	.054	
6.0	.515	.472	.441	.443	.409	.384	.305	.286	.272	.177	.168	.161	.057	.055	.053	
7.0	.509	.465	.434	.438	.403	.379	.303	.283	.268	.176	.167	.160	.057	.055	.053	
8.0	.504	.460	.430	.434	.399	.375	.300	.280	.266	.175	.165	.158	.056	.054	.052	
9.0	.499	.455	.426	.430	.395	.371	.298	.278	.264	.173	.164	.157	.056	.054	.052	
10.0	.495	.451	.423	.426	.392	.369	.296	.276	.262	.172	.163	.156	.056	.054	.052	

C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: MEDIUM
 Temperature:25.4DEG
 Operators:魏兆文
 Test Date:2021-04-08



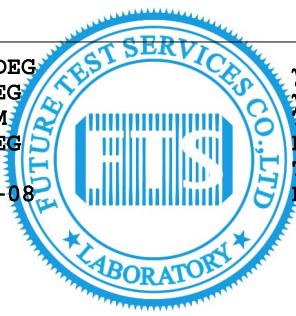
γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000_V1 SYSTEM V2.0.404.7
 Humidity:61.2%
 Test Distance:13.650m [K=0.7326]
 Remarks: --

UGR(Unified Glare Rating) Table

Test:U:230.1V I:0.0523A P:9.690W PF:0.8052 Freq:50.00Hz Lamp Flux:879.896x1 lm		
NAME: LIGHTING	TYPE:--	WEIGHT:--
SPEC.:HOWLDE-10/3K	DIM.: --	SERIAL No.:FTS21040703L-02
MFR.: ACT	SUR.:1160mm	Shielding Angle:--

ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
x = 2H y = 2H	15.5	16.2	16.3	17.0	18.0	14.5	15.2	15.3	16.0	17.0
3H	15.2	15.9	16.1	16.7	17.8	14.3	14.9	15.1	15.7	16.8
4H	15.1	15.7	16.0	16.5	17.6	14.1	14.7	15.0	15.6	16.7
6H	14.9	15.5	15.8	16.4	17.5	13.9	14.5	14.9	15.4	16.5
8H	14.8	15.4	15.8	16.3	17.4	13.9	14.4	14.8	15.3	16.4
12H	14.7	15.2	15.7	16.2	17.3	13.8	14.3	14.7	15.2	16.3
4H 2H	15.0	15.6	15.9	16.5	17.5	14.0	14.6	14.9	15.5	16.6
3H	14.8	15.3	15.7	16.2	17.3	13.8	14.3	14.7	15.2	16.4
4H	14.6	15.1	15.6	16.0	17.2	13.7	14.1	14.6	15.0	16.2
6H	14.5	14.8	15.4	15.8	17.0	13.5	13.9	14.5	14.8	16.0
8H	14.4	14.7	15.3	15.7	16.9	13.4	13.7	14.4	14.7	15.9
12H	14.3	14.6	15.3	15.6	16.8	13.3	13.6	14.3	14.6	15.9
8H 4H	14.4	14.7	15.4	15.7	16.9	13.4	13.8	14.4	14.7	16.0
6H	14.2	14.5	15.2	15.5	16.7	13.2	13.5	14.2	14.5	15.8
8H	14.1	14.3	15.1	15.3	16.6	13.1	13.4	14.1	14.4	15.7
12H	14.0	14.2	15.0	15.2	16.5	13.0	13.2	14.1	14.3	15.6
12H 4H	14.3	14.6	15.3	15.6	16.8	13.3	13.6	14.3	14.6	15.9
6H	14.1	14.3	15.1	15.3	16.6	13.1	13.4	14.1	14.4	15.7
8H	14.0	14.2	15.0	15.2	16.5	13.0	13.2	14.1	14.3	15.6
Variations with the observer position at spacings:										
S = 1.0H	+ 5.2 / - 7.6					+ 4.4 / - 5.4				
1.5H	+ 7.9 / - 7.3					+ 7.0 / - 5.0				
2.0H	+ 2.8 / - 1.2					+ 1.8 / - 0.8				

 CIE Pub.117, 879.9 lm Total Lamp Luminous Flux Correct ($8\log(F/F_0) = -0.4$)

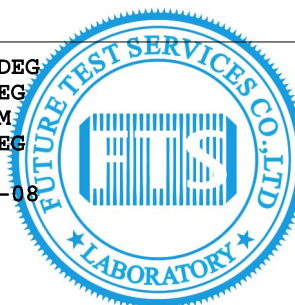
C Range: 0 - 360DEG		γ Range: 0 - 180DEG
C Interval: 5.0DEG		γ Interval: 0.5DEG
Test Speed: MEDIUM		Test System:EVERFINE GO-2000_V1 SYSTEM V2.0.404.7
Temperature:25.4DEG		Humidity:61.2%
Operators:魏兆文		Test Distance:13.650m [K=0.7326]
Test Date:2021-04-08		Remarks: --

UTILIZATION FACTORS TABLE

Test:U:230.1V I:0.0523A P:9.690W PF:0.8052 Freq:50.00Hz Lamp Flux:879.896x1 lm		
NAME: LIGHTING	TYPE:--	WEIGHT:--
SPEC.:HOWLDE-10/3K	DIM.: --	SERIAL No.:FTS21040703L-02
MFR.: ACT	SUR.:1160mm	Shielding Angle:--

REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	61	53	48	58	51	47	53	48	45	38
0.80	69	61	56	65	58	54	59	54	51	42
1.00	74	66	61	70	63	59	63	58	55	44
1.25	79	71	66	75	68	64	66	62	59	46
1.50	83	76	71	78	72	68	69	65	62	47
2.00	88	81	77	82	77	73	72	68	65	48
2.50	91	85	81	85	80	76	74	70	68	48
3.00	94	89	84	87	83	79	75	72	70	48
4.00	97	93	89	90	87	84	77	75	73	49
5.00	99	96	93	92	89	87	79	77	75	50
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

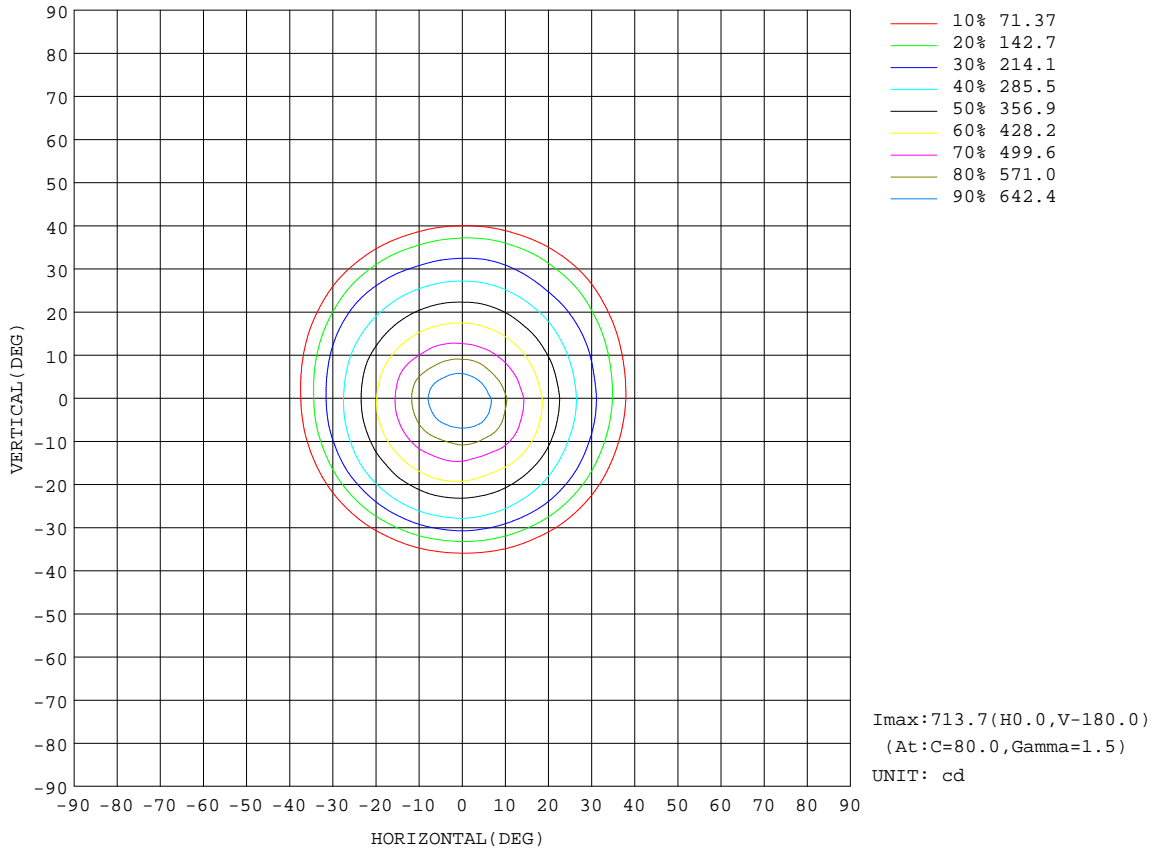
C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: MEDIUM
 Temperature:25.4DEG
 Operators:魏兆文
 Test Date:2021-04-08



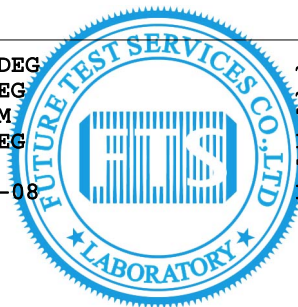
γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000_V1 SYSTEM V2.0.404.7
 Humidity:61.2%
 Test Distance:13.650m [K=0.7326]
 Remarks: --

ISOCANDELA DIAGRAM

Test:U:230.1V I:0.0523A P:9.690W PF:0.8052 Freq:50.00Hz Lamp Flux:879.896x1 lm		
NAME: LIGHTING	TYPE:--	WEIGHT:--
SPEC.:HOWLDE-10/3K	DIM.: --	SERIAL No.:FTS21040703L-02
MFR.: ACT	SUR.:1160mm	Shielding Angle:--



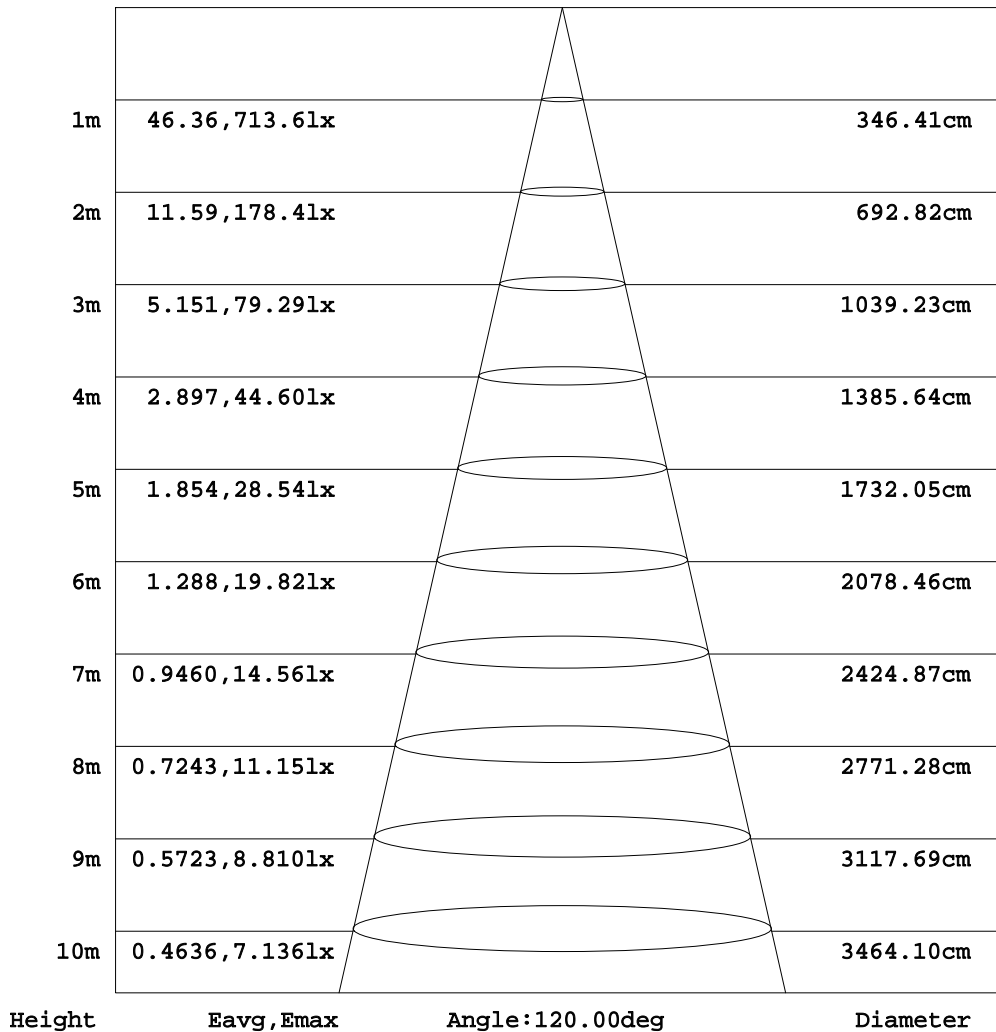
C Range: 0 - 360DEG γ Range: 0 - 180DEG
 C Interval: 5.0DEG γ Interval: 0.5DEG
 Test Speed: MEDIUM Test System: EVERFINE GO-2000_V1 SYSTEM V2.0.404.7
 Temperature: 25.4DEG Humidity: 61.2%
 Operators: 魏兆文 Test Distance: 13.650m [K=0.7326]
 Test Date: 2021-04-08 Remarks: --



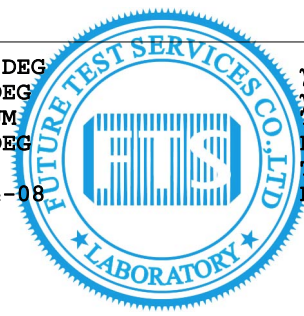
AAI Figure

Test:U:230.1V I:0.0523A P:9.690W PF:0.8052 Freq:50.00Hz Lamp Flux:879.896x1 lm		
NAME: LIGHTING	TYPE:--	WEIGHT:--
SPEC.:HOWLDE-10/3K	DIM.: --	SERIAL No.:FTS21040703L-02
MFR.: ACT	SUR.:1160mm	Shielding Angle:--

Flux out:436.9 lm

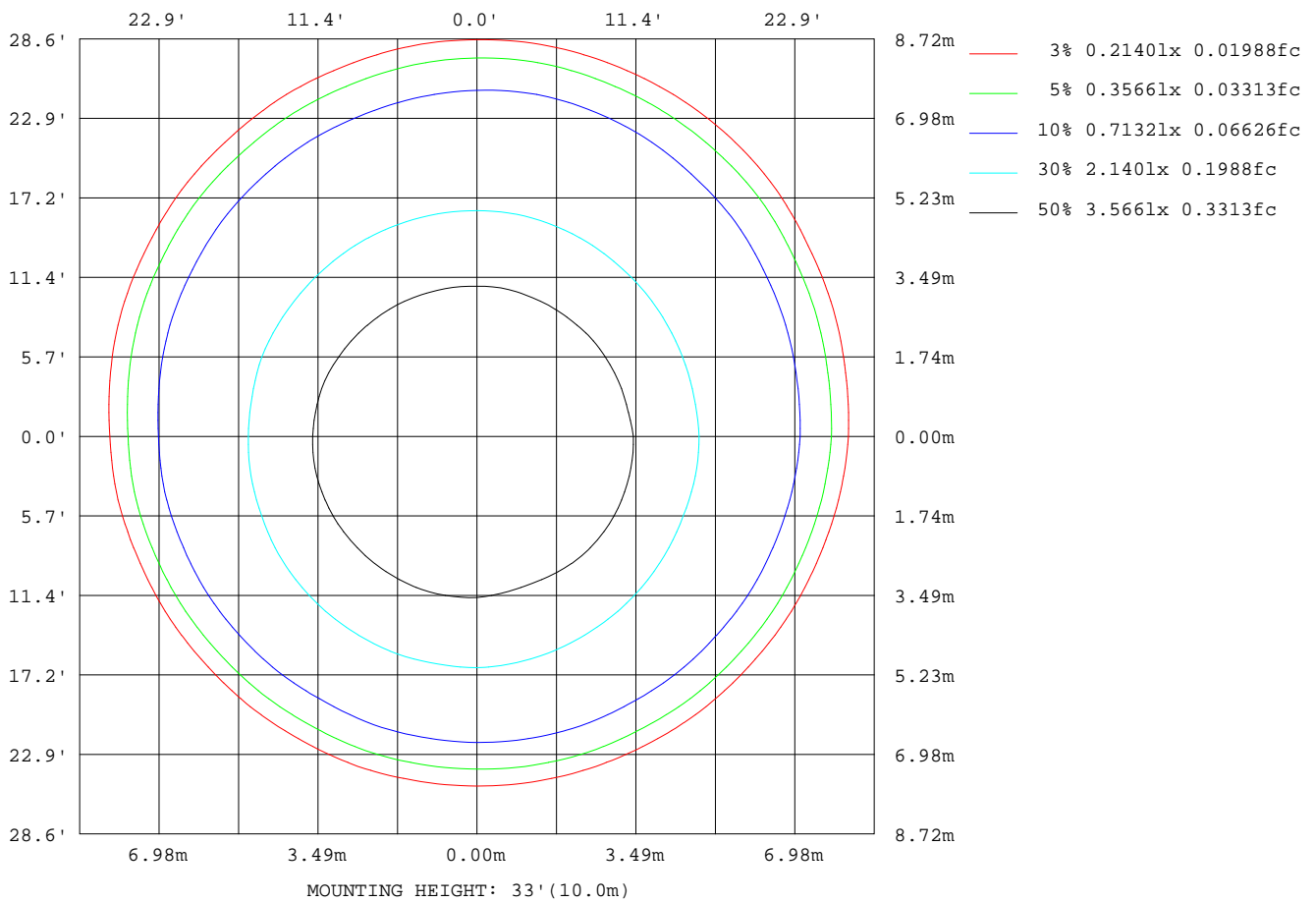


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

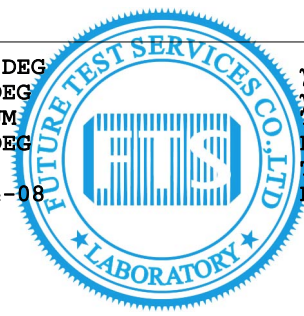
 C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: MEDIUM
 Temperature:25.4DEG
 Operators:魏兆文
 Test Date:2021-04-08

 γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000_V1 SYSTEM V2.0.404.7
 Humidity:61.2%
 Test Distance:13.650m [K=0.7326]
 Remarks: --

ISOLUX DIAGRAM

Test:U:230.1V I:0.0523A P:9.690W PF:0.8052 Freq:50.00Hz Lamp Flux:879.896x1 lm		
NAME: LIGHTING	TYPE:--	WEIGHT:--
SPEC.:HOWLDE-10/3K	DIM.: --	SERIAL No.:FTS21040703L-02
MFR.: ACT	SUR.:1160mm	Shielding Angle:--

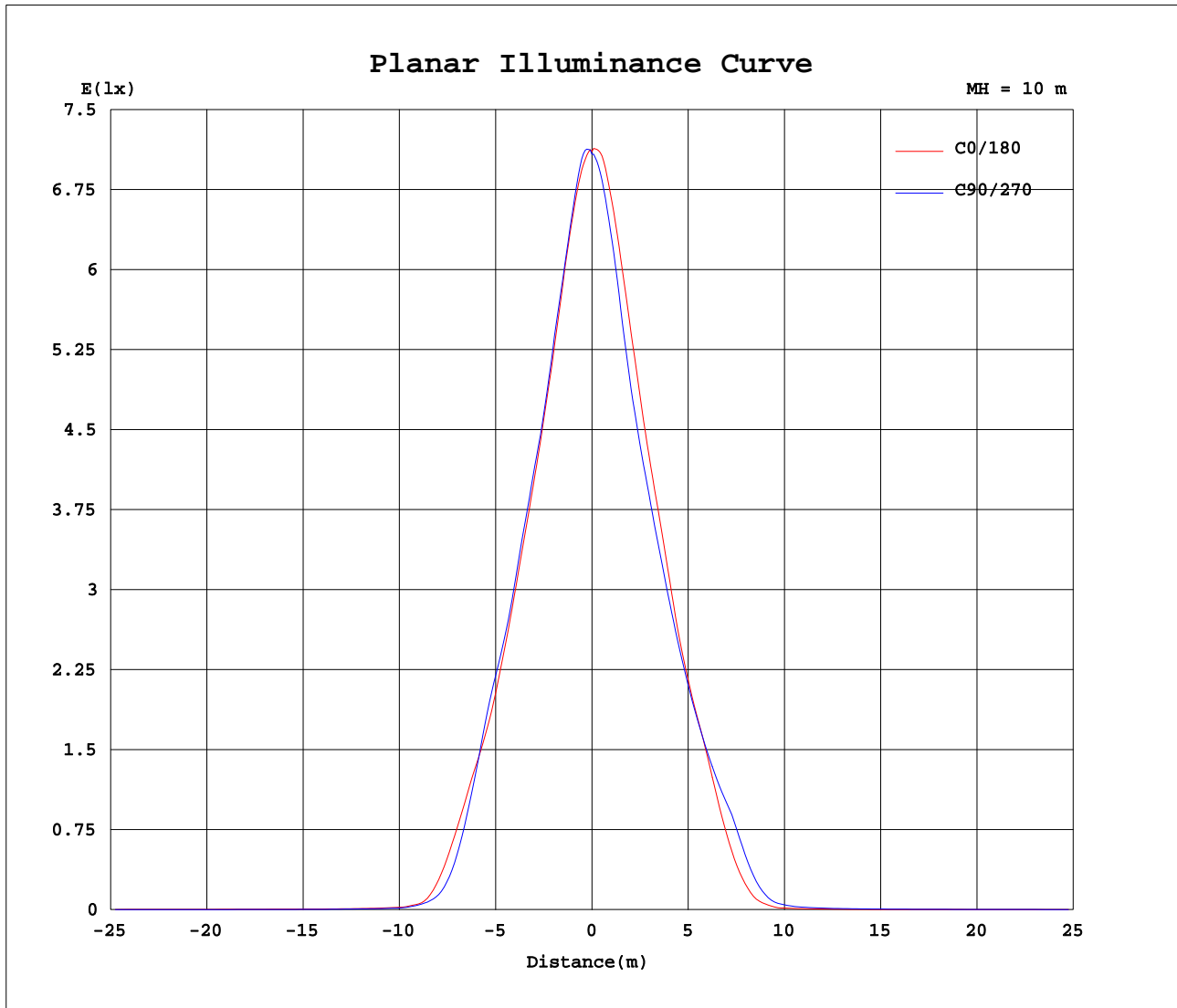


C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: MEDIUM
 Temperature:25.4DEG
 Operators:魏兆文
 Test Date:2021-04-08

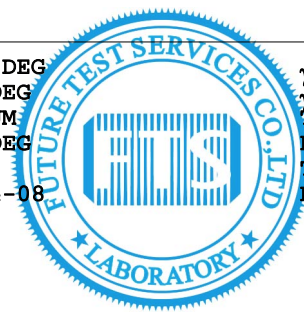


γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
 Test System:EVERFINE GO-2000_V1 SYSTEM V2.0.404.7
 Humidity:61.2%
 Test Distance:13.650m [K=0.7326]
 Remarks: --

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 5.0DEG
 Test Speed: MEDIUM
 Temperature: 25.4DEG
 Operators: 魏兆文
 Test Date: 2021-04-08



γ Range: 0 - 180DEG
 γ Interval: 0.5DEG
 Test System: EVERFINE GO-2000_V1 SYSTEM V2.0.404.7
 Humidity: 61.2%
 Test Distance: 13.650m [K=0.7326]
 Remarks: --