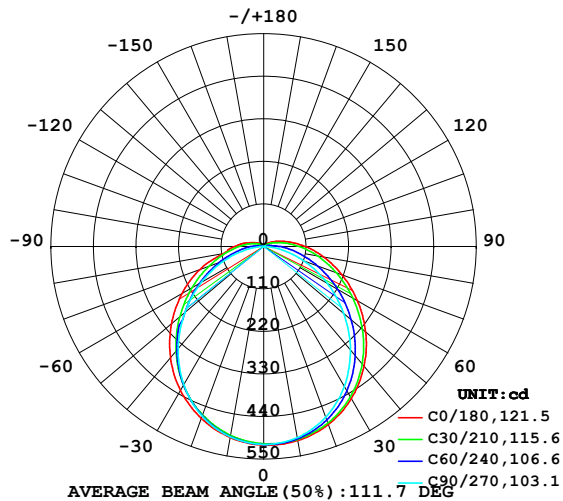


## LUMINAIRE PHOTOMETRIC TEST REPORT

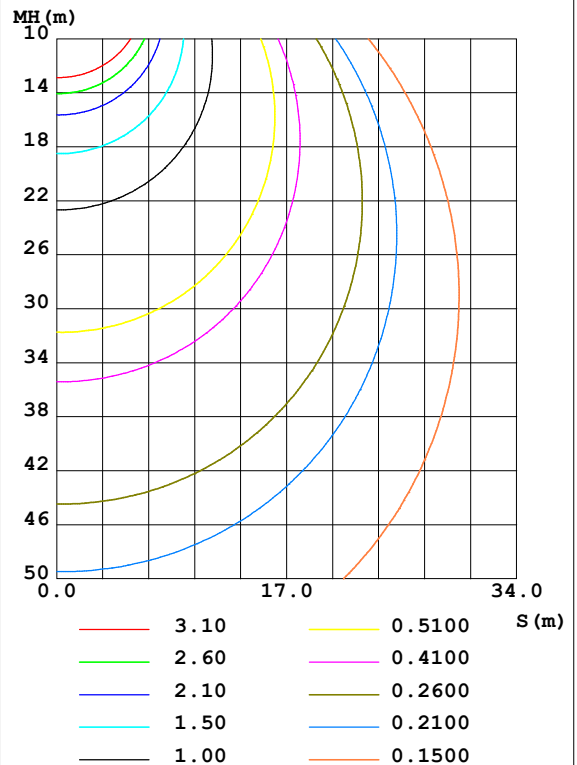
Test:U:220.5V I:0.0530A P:11.26W PF:0.9636 Freq:50.00Hz Lamp Flux:1500x1 lm		
NAME: T5 LED TUBE	TYPE:	WEIGHT:0.2
SPEC.:	DIM.:	SERIAL No.:
	SUR.:0.016*1.2	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 144.07 lm/W			
MODEL	NET-55-01-09	I <sub>max</sub> (cd)	514.3	S/MH (C0/180)	1.25
NOMINAL POWER (W)	11	LOR (%)	108.1	S/MH (C90/270)	1.21
RATED VOLTAGE (V)	AC220	TOTAL FLUX (lm)	1622.2	η UP, DN (C0-180)	3.3, 52.0
NOMINAL FLUX (lm)	1500	CIE CLASS	DIRECT	η UP, DN (C180-360)	2.9, 49.9
LAMPS INSIDE	1	η up (%)	6.2	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	AC220	η down (%)	101.9	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: HXQ  
 Test Date: 2020-03-12

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity: 65.0%  
 Test Distance: 11.300m [K=1.0000]  
 Remarks:

## ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	509.6	505.6	501.9	488.2	501.4	497.2	500.0	492.9	0- 10	48.02	48.02	2.96,3.2
20	489.8	481.7	469.8	458.6	472.8	464.2	466.5	469.9	10- 20	137.3	185.4	11.4,12.4
30	453.9	439.9	417.7	412.0	430.3	414.7	413.3	429.1	20- 30	207.4	392.7	24.2,26.2
40	404.1	382.4	349.4	351.8	375.0	351.2	344.2	373.1	30- 40	248.4	641.2	39.5,42.7
50	344.4	314.5	270.8	283.2	311.6	275.1	266.5	307.5	40- 50	256.1	897.3	55.3,59.8
60	279.5	243.1	189.6	212.7	244.1	203.1	186.7	237.9	50- 60	232.9	1130	69.7,75.3
70	215.8	174.5	111.5	147.0	176.8	137.1	109.6	170.9	60- 70	188.0	1318	81.3,87.9
80	157.5	114.1	41.31	91.13	105.2	83.21	40.32	111.3	70- 80	131.8	1450	89.4,96.7
90	107.4	66.73	0.5393	50.65	75.14	47.96	0.5860	64.63	80- 90	79.22	1529	94.3,102
100	68.30	35.45	0.4333	26.38	50.72	26.53	0.4691	32.12	90-100	44.76	1574	97,105
110	40.24	17.96	0.6861	13.73	30.03	14.57	0.7398	16.98	100-110	24.01	1598	98.5,107
120	22.22	8.350	0.9931	7.471	17.34	7.629	1.074	7.567	110-120	12.19	1610	99.3,107
130	11.72	3.952	1.309	4.380	9.732	4.455	1.380	3.707	120-130	5.844	1616	99.6,108
140	5.863	2.346	1.589	2.738	5.312	2.993	1.670	2.370	130-140	2.921	1619	99.8,108
150	2.665	1.859	1.850	2.120	3.013	2.297	1.922	1.927	140-150	1.571	1620	99.9,108
160	2.103	2.013	2.067	2.089	2.383	2.225	2.112	2.071	150-160	0.9697	1621	99.9,108
170	2.283	2.184	2.220	2.158	2.482	2.265	2.220	2.193	160-170	0.6178	1622	100,108
180	2.455	2.301	2.338	2.252	2.464	2.297	2.292	2.306	170-180	0.2168	1622	100,108
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 770.36 lm

%lum = 47.5%

%lamp = 51.4%

Conical surface Flux(120deg): 1130.1 lm

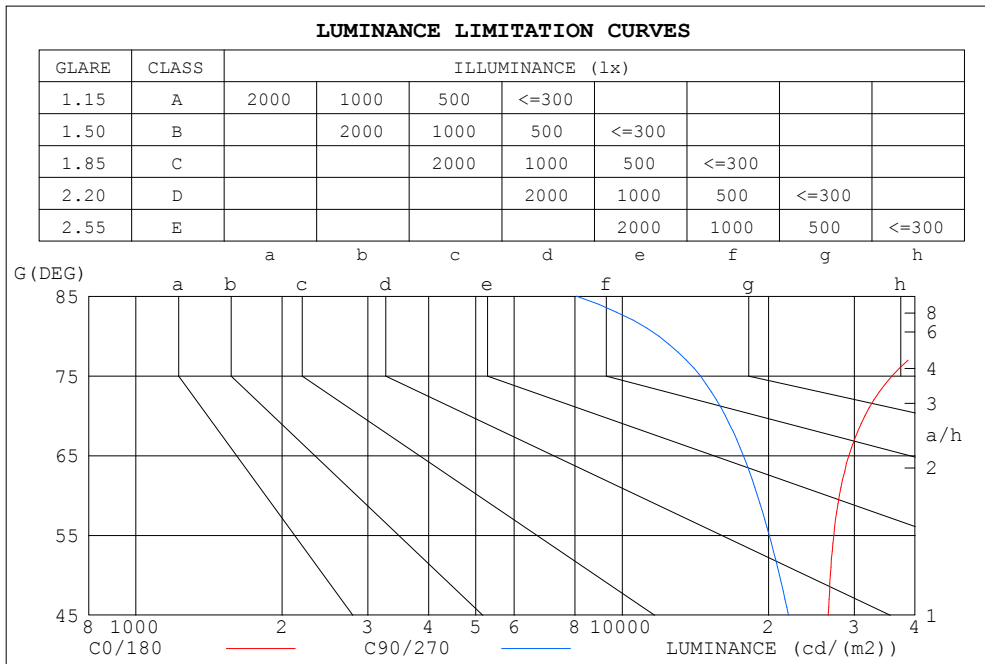
%lum = 69.7%

%lamp = 75.3%

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:HXQ  
 Test Date:2020-03-12

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity:65.0%  
 Test Distance:11.300m [K=1.0000]  
 Remarks:

## LUMINANCE LIMITATION CURVES



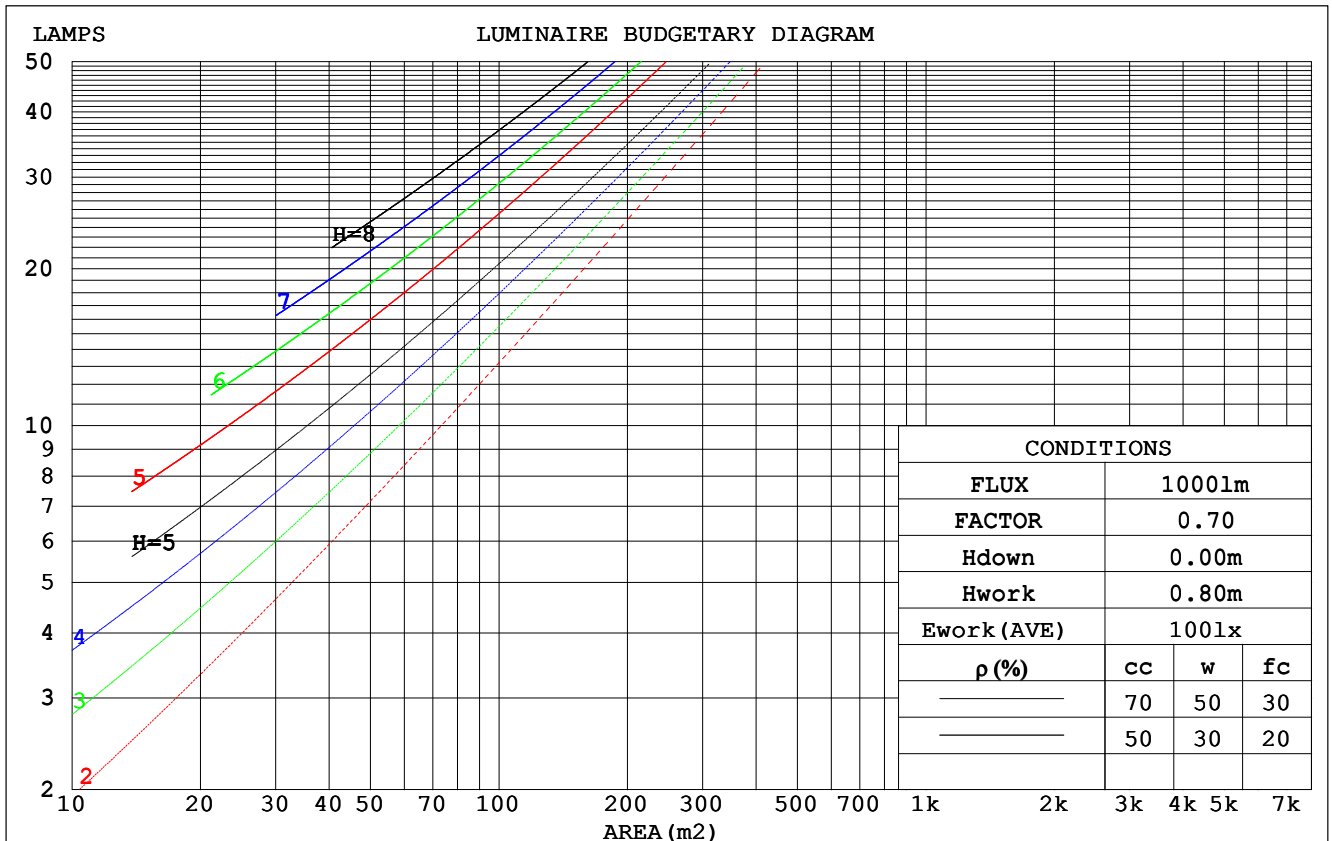
LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	75334	8044
80	45341	11895
75	35886	14476
70	31545	16297
65	29254	17744
60	27953	18959
55	27225	20060
50	26788	21066
45	26523	21975

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: HXQ  
 Test Date: 2020-03-12

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity: 65.0%  
 Test Distance: 11.300m [K=1.0000]  
 Remarks:

## CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Coefficients of Utilization (CU)												
0.0	1.27	1.27	1.27	1.24	1.24	1.24	1.17	1.17	1.17	1.10	1.10	1.10	1.05	1.05	1.05	1.02
1.0	1.09	1.04	.99	1.06	1.01	.97	.00	.96	.92	.95	.91	.89	.90	.87	.85	.82
2.0	.94	.86	.80	.92	.84	.78	.87	.81	.75	.82	.77	.73	.78	.74	.70	.67
3.0	.82	.73	.66	.80	.72	.65	.76	.69	.63	.72	.66	.61	.69	.63	.59	.56
4.0	.73	.63	.55	.71	.62	.55	.67	.60	.53	.64	.57	.52	.61	.55	.51	.48
5.0	.65	.55	.48	.63	.54	.47	.60	.52	.46	.58	.50	.45	.55	.49	.44	.41
6.0	.58	.49	.41	.57	.48	.41	.54	.46	.40	.52	.45	.39	.50	.43	.38	.36
7.0	.53	.43	.37	.52	.43	.36	.50	.41	.35	.47	.40	.35	.45	.39	.34	.32
8.0	.48	.39	.33	.47	.38	.32	.45	.37	.32	.43	.36	.31	.42	.35	.31	.28
9.0	.44	.35	.29	.43	.35	.29	.42	.34	.29	.40	.33	.28	.39	.32	.28	.26
10.0	.41	.32	.26	.40	.32	.26	.39	.31	.26	.37	.30	.25	.36	.30	.25	.23



C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: HXQ  
 Test Date: 2020-03-12

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity: 65.0%  
 Test Distance: 11.300m [K=1.0000]  
 Remarks:

## WEC AND CCEC

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.374	.213	.067	.365	.208	.066	.347	.199	.064	.330	.190	.061	.315	.182	.059	
2.0	.336	.184	.057	.328	.180	.056	.311	.173	.054	.297	.166	.052	.283	.160	.050	
3.0	.304	.162	.049	.297	.159	.048	.282	.153	.047	.269	.147	.045	.257	.142	.044	
4.0	.277	.144	.042	.271	.142	.042	.258	.137	.041	.246	.132	.040	.235	.127	.039	
5.0	.254	.130	.038	.248	.127	.037	.237	.123	.036	.226	.119	.035	.216	.115	.035	
6.0	.235	.118	.034	.229	.116	.033	.219	.112	.033	.209	.109	.032	.200	.105	.031	
7.0	.217	.108	.030	.213	.106	.030	.203	.103	.030	.194	.100	.029	.186	.097	.028	
8.0	.202	.099	.028	.198	.098	.028	.190	.095	.027	.182	.092	.027	.174	.089	.026	
9.0	.189	.092	.026	.185	.090	.025	.178	.088	.025	.170	.085	.024	.163	.083	.024	
10.0	.178	.085	.024	.174	.084	.023	.167	.082	.023	.160	.080	.023	.154	.077	.022	

pcc	80%			70%			50%			30%			10%			0
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Ceiling Cavity Exitance Coefficients (CCEC)												
0.0	.253	.253	.253	.216	.216	.216	.148	.148	.148	.085	.085	.085	.027	.027	.027	
1.0	.245	.216	.190	.210	.186	.163	.144	.128	.113	.083	.074	.066	.026	.024	.021	
2.0	.237	.191	.152	.203	.164	.131	.139	.113	.091	.080	.066	.054	.026	.021	.017	
3.0	.229	.172	.127	.196	.148	.110	.135	.103	.077	.078	.060	.045	.025	.020	.015	
4.0	.220	.158	.110	.189	.136	.096	.130	.095	.068	.075	.056	.040	.024	.018	.013	
5.0	.212	.147	.099	.182	.127	.086	.125	.089	.061	.073	.052	.036	.023	.017	.012	
6.0	.204	.138	.091	.175	.119	.079	.121	.084	.056	.070	.049	.033	.023	.016	.011	
7.0	.196	.131	.084	.169	.113	.074	.117	.079	.052	.068	.047	.031	.022	.015	.010	
8.0	.189	.124	.080	.163	.108	.070	.113	.076	.049	.066	.045	.029	.021	.015	.010	
9.0	.182	.119	.076	.157	.103	.066	.109	.073	.047	.063	.043	.028	.021	.014	.009	
10.0	.176	.114	.073	.152	.099	.064	.105	.070	.045	.061	.041	.027	.020	.014	.009	

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:HXQ  
 Test Date:2020-03-12

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity:65.0%  
 Test Distance:11.300m [K=1.0000]  
 Remarks:

**UGR(Unified Glare Rating) Table**

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	23.0	24.4	23.3	24.8	25.1	21.5	22.9	21.8	23.3	23.6
3H	25.1	26.5	25.5	26.8	27.2	22.8	24.2	23.2	24.5	24.9
4H	26.2	27.6	26.6	27.9	28.3	23.4	24.7	23.8	25.0	25.4
6H	27.5	28.7	27.9	29.1	29.5	23.7	24.9	24.1	25.3	25.7
8H	28.1	29.3	28.5	29.7	30.1	23.8	25.0	24.2	25.4	25.8
12H	28.9	30.0	29.3	30.4	30.8	23.8	25.0	24.3	25.4	25.8
4H 2H	23.5	24.8	23.9	25.2	25.5	22.4	23.7	22.8	24.0	24.4
3H	25.9	27.1	26.4	27.5	27.9	24.0	25.1	24.4	25.5	25.9
4H	27.2	28.3	27.7	28.7	29.2	24.7	25.7	25.1	26.1	26.6
6H	28.7	29.6	29.1	30.1	30.5	25.2	26.1	25.7	26.6	27.1
8H	29.4	30.3	29.9	30.8	31.3	25.4	26.2	25.9	26.7	27.2
12H	30.3	31.1	30.8	31.6	32.2	25.5	26.3	26.0	26.7	27.3
8H 4H	27.5	28.4	28.0	28.9	29.4	25.4	26.3	25.9	26.7	27.3
6H	29.3	30.0	29.8	30.5	31.0	26.2	26.9	26.7	27.4	28.0
8H	30.2	30.9	30.8	31.4	32.0	26.5	27.2	27.1	27.7	28.3
12H	31.4	31.9	31.9	32.5	33.1	26.8	27.4	27.3	27.9	28.5
12H 4H	27.6	28.4	28.1	28.9	29.4	25.6	26.4	26.1	26.9	27.4
6H	29.3	30.0	29.9	30.5	31.1	26.6	27.2	27.1	27.8	28.3
8H	30.4	31.0	31.0	31.5	32.1	27.0	27.6	27.6	28.2	28.8
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.1 / - 0.4				

CIE Pub.117, 1500 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 1.4)

C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:HXQ  
Test Date:2020-03-12

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
Humidity:65.0%  
Test Distance:11.300m [K=1.0000]  
Remarks:

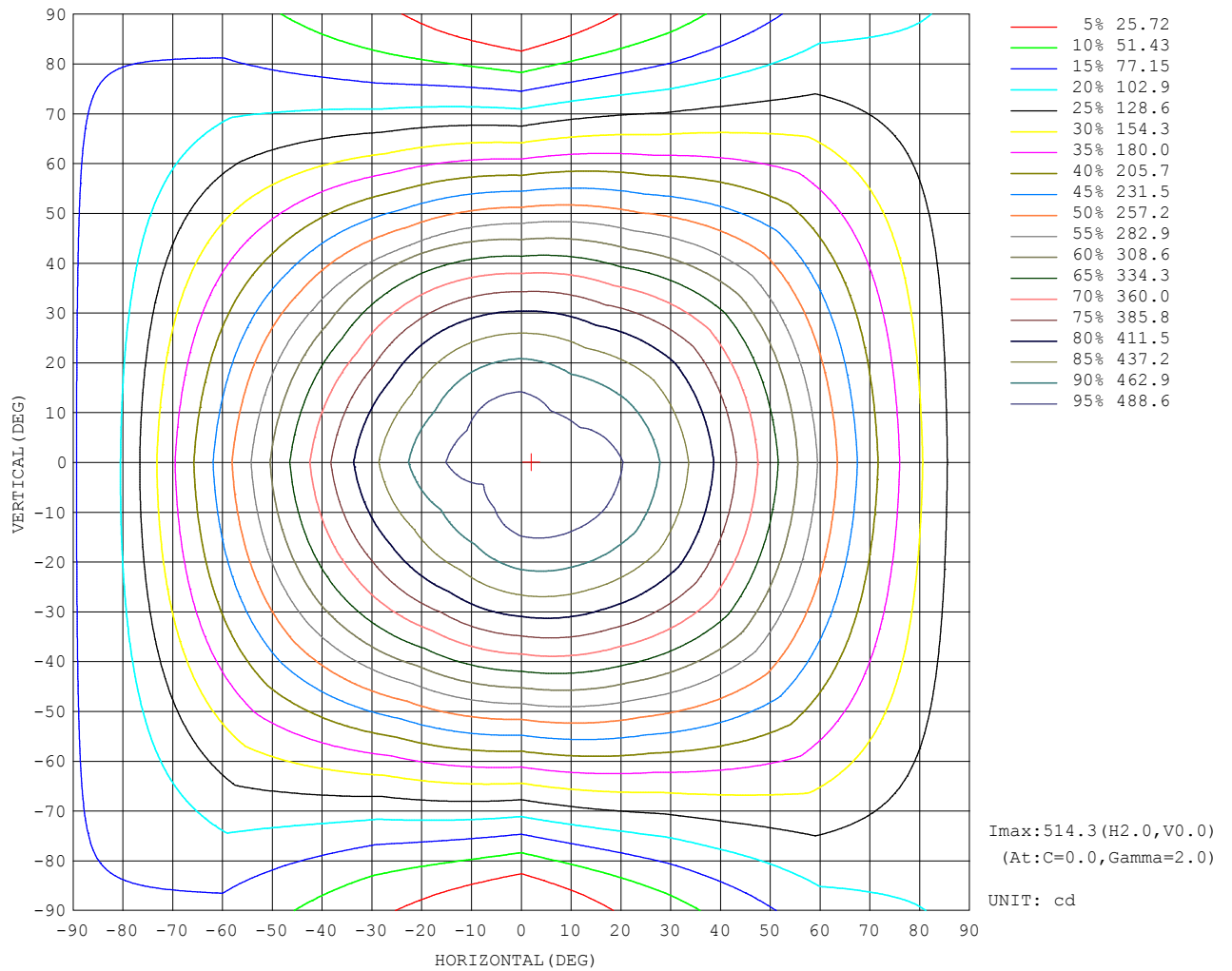
## UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	59	46	38	58	46	38	56	45	38	31
0.80	69	56	48	68	56	48	66	55	47	39
1.00	78	65	57	76	64	56	74	66	56	48
1.25	85	73	65	84	72	64	80	70	63	55
1.50	91	79	71	89	78	70	85	76	69	60
2.00	98	88	80	96	86	79	91	83	77	67
2.50	103	93	86	100	91	85	95	88	82	72
3.00	106	98	91	104	96	90	98	92	87	76
4.00	111	104	98	108	101	96	102	97	92	81
5.00	114	108	102	111	105	100	105	100	96	84
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: HXQ  
 Test Date: 2020-03-12

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity: 65.0%  
 Test Distance: 11.300m [K=1.0000]  
 Remarks:

## ISOCANDELA DIAGRAM

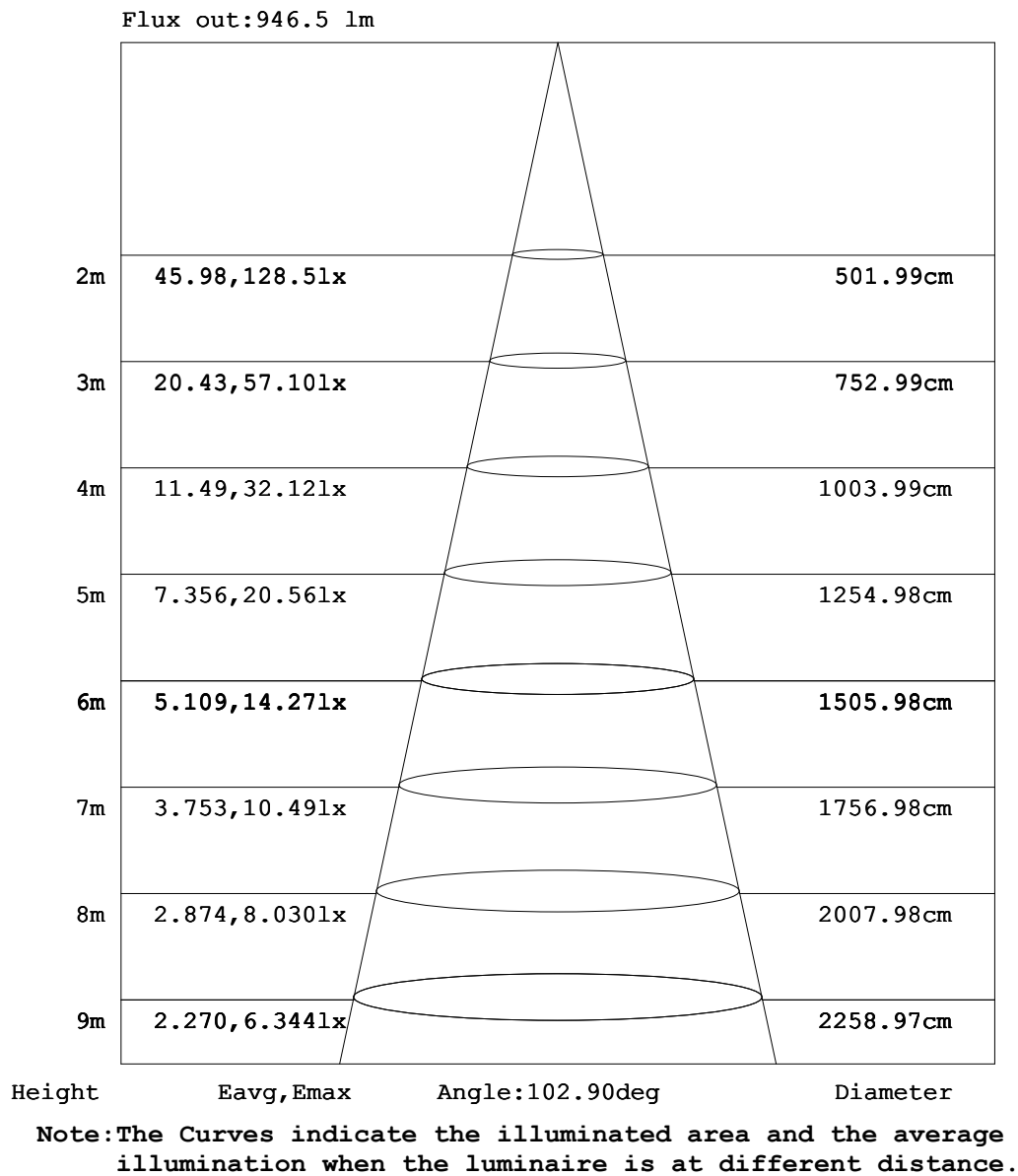


C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: HXQ  
Test Date: 2020-03-12

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
Humidity: 65.0%  
Test Distance: 11.300m [K=1.0000]  
Remarks:



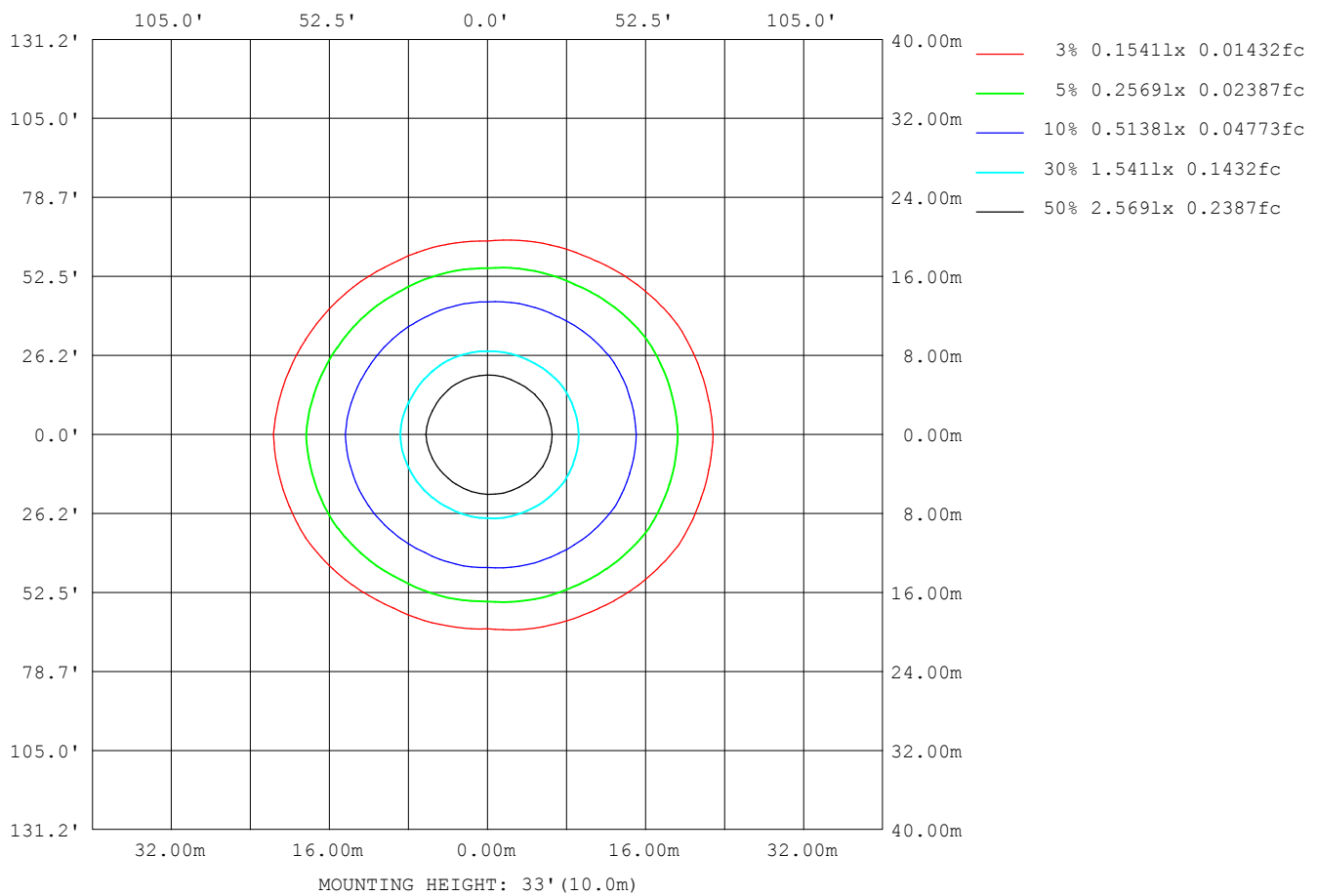
### AAI Figure



C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: HXQ  
 Test Date: 2020-03-12

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity: 65.0%  
 Test Distance: 11.300m [K=1.0000]  
 Remarks:

## ISOLUX DIAGRAM



C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: HXQ  
Test Date: 2020-03-12

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
Humidity: 65.0%  
Test Distance: 11.300m [K=1.0000]  
Remarks:

## LED Avg.L Report

Test:U:220.5V I:0.0530A P:11.26W PF:0.9636 Freq:50.00Hz Lamp Flux:1500x1 lm		
NAME: T5 LED TUBE	TYPE:	WEIGHT:0.2
SPEC.:	DIM.:	SERIAL No.:
	SUR.:0.016*1.2	Shielding Angle:

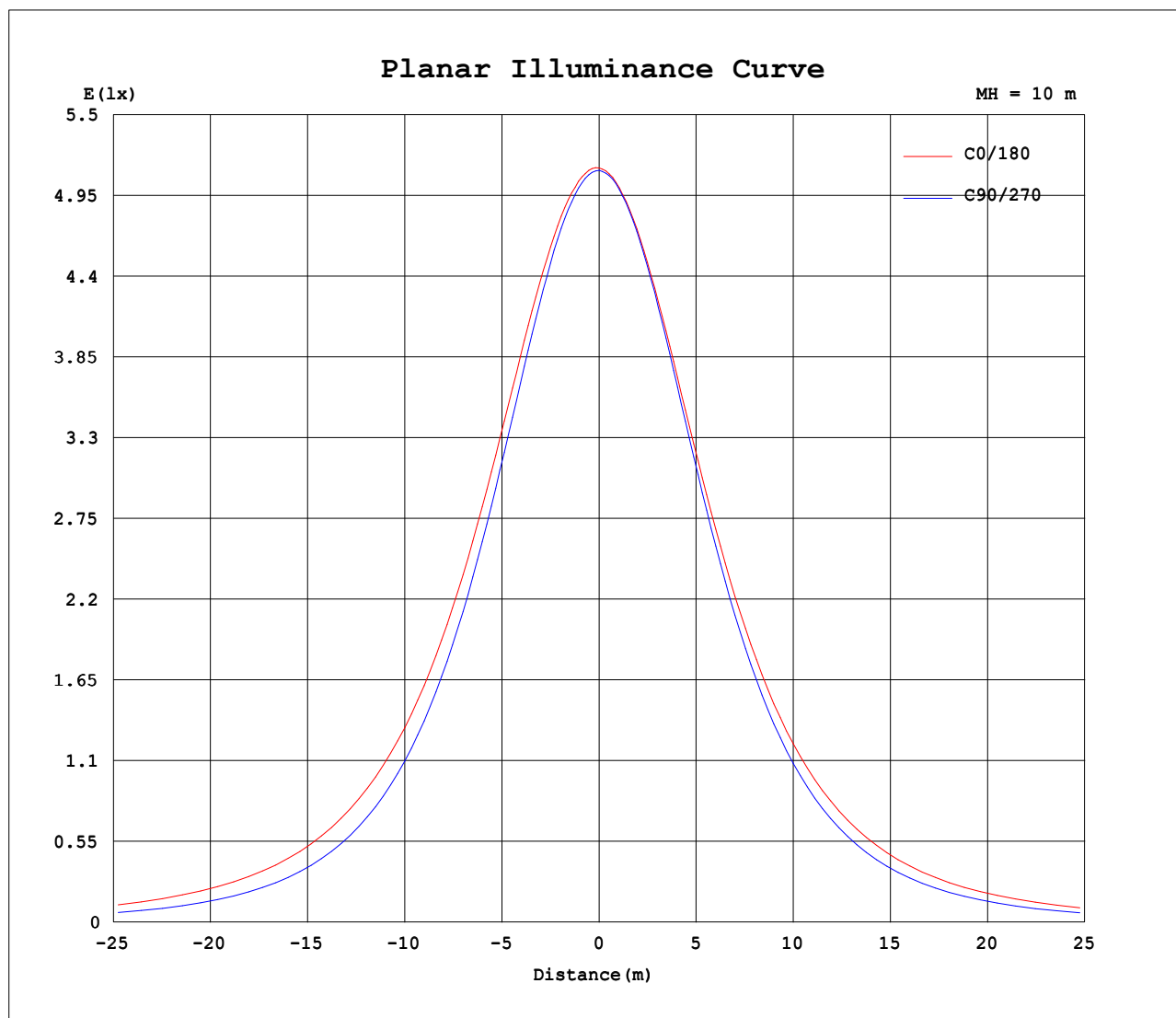
AvgL	cd/m2
L_0~180 (65) av	27096
L_0~180 (75) av	31570
L_0~180 (85) av	63803
L_90~270 (65) av	17598
L_90~270 (75) av	14335
L_90~270 (85) av	7918
L_45 (65) av	22486
L_45 (75) av	24784
L_45 (85) av	44906

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:HXQ  
 Test Date:2020-03-12

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity:65.0%  
 Test Distance:11.300m [K=1.0000]  
 Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: HXQ  
 Test Date: 2020-03-12

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity: 65.0%  
 Test Distance: 11.300m [K=1.0000]  
 Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	514	510	512	512	502	497	514	510	512	512	502	497						
5	514	510	511	510	499	494	510	505	508	509	500	497						
10	510	506	505	502	490	486	501	496	499	500	492	493						
15	502	498	494	488	477	474	489	481	485	486	480	487						
20	490	486	477	470	459	458	473	463	465	467	464	476						
25	474	469	456	446	436	438	453	441	442	442	442	460						
30	454	449	431	418	409	415	430	415	414	413	417	441						
35	430	424	401	385	378	388	404	385	383	380	388	417						
40	404	397	368	349	345	359	375	353	350	344	356	390						
45	375	366	333	311	309	328	344	318	314	306	322	360						
50	344	334	296	271	272	294	312	284	266	266	287	328						
55	312	300	258	230	235	261	278	248	229	226	250	295						
60	280	266	220	190	198	228	244	214	192	187	214	261						
65	247	232	184	150	162	196	211	182	156	148	179	228						
70	216	200	149	111	128	166	177	151	123	110	146	196						
75	186	170	116	74.9	96.9	138	141	124	93.0	73.5	113	166						
80	157	141	86.9	41.3	69.6	113	105	99.4	67.0	40.3	84.3	138						
85	131	115	61.6	14.0	47.2	90.2	91.1	79.1	46.7	13.6	59.3	113						
90	107	92.0	41.4	0.54	30.4	70.9	75.1	63.9	32.0	0.59	39.4	89.8						
95	86.4	71.8	24.3	0.32	18.9	54.5	63.0	51.0	20.9	0.36	22.5	70.1						
100	68.3	54.8	16.1	0.43	11.7	41.1	50.7	39.9	13.2	0.47	14.7	49.6						
105	52.9	41.0	10.3	0.54	7.54	30.4	37.3	30.6	8.71	0.60	9.18	38.3						
110	40.2	30.1	5.81	0.69	5.17	22.3	30.0	23.0	6.15	0.74	5.35	28.6						
115	30.2	21.6	3.84	0.83	3.68	16.4	23.3	16.6	4.45	0.91	3.48	19.5						
120	22.2	14.0	2.72	0.99	2.83	12.1	17.3	11.9	3.37	1.07	2.56	12.6						
125	16.2	9.23	2.12	1.15	2.30	9.11	13.0	8.85	2.71	1.24	2.00	8.30						
130	11.7	6.19	1.72	1.31	1.96	6.80	9.73	6.70	2.21	1.38	1.70	5.72						
135	8.34	4.34	1.55	1.45	1.78	5.04	7.28	5.25	1.96	1.53	1.56	4.20						
140	5.86	3.12	1.57	1.59	1.74	3.73	5.31	4.14	1.85	1.67	1.64	3.10						
145	3.96	2.29	1.71	1.73	1.82	2.86	3.95	3.21	1.93	1.81	1.77	2.36						
150	2.66	1.87	1.85	1.85	1.91	2.33	3.01	2.57	2.02	1.92	1.88	1.98						
155	2.02	1.91	1.95	1.97	1.99	2.11	2.49	2.28	2.09	2.01	2.01	1.99						
160	2.10	1.99	2.03	2.07	2.05	2.13	2.38	2.29	2.16	2.11	2.07	2.08						
165	2.20	2.11	2.14	2.15	2.12	2.18	2.44	2.31	2.20	2.16	2.14	2.14						
170	2.28	2.18	2.19	2.22	2.09	2.22	2.48	2.31	2.22	2.22	2.18	2.20						
175	2.36	2.24	2.26	2.28	2.23	2.24	2.49	2.32	2.26	2.26	2.23	2.25						
180	2.45	2.28	2.32	2.34	2.26	2.25	2.46	2.33	2.27	2.29	2.34	2.27						

C Range: 0 - 360DEG  
 C Interval: 30.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: HXQ  
 Test Date: 2020-03-12

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.361  
 Humidity: 65.0%  
 Test Distance: 11.300m [K=1.0000]  
 Remarks: