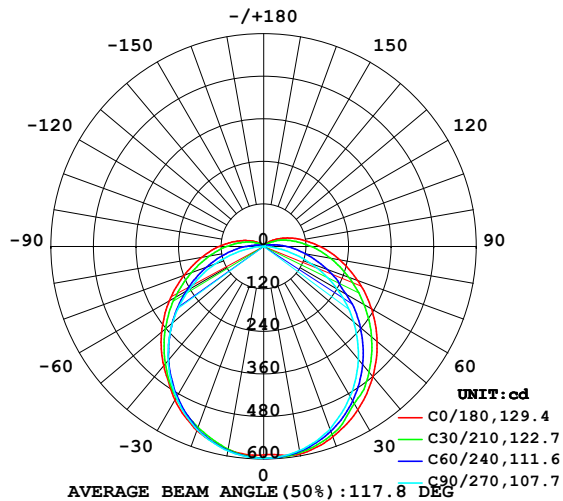


## LUMINAIRE PHOTOMETRIC TEST REPORT

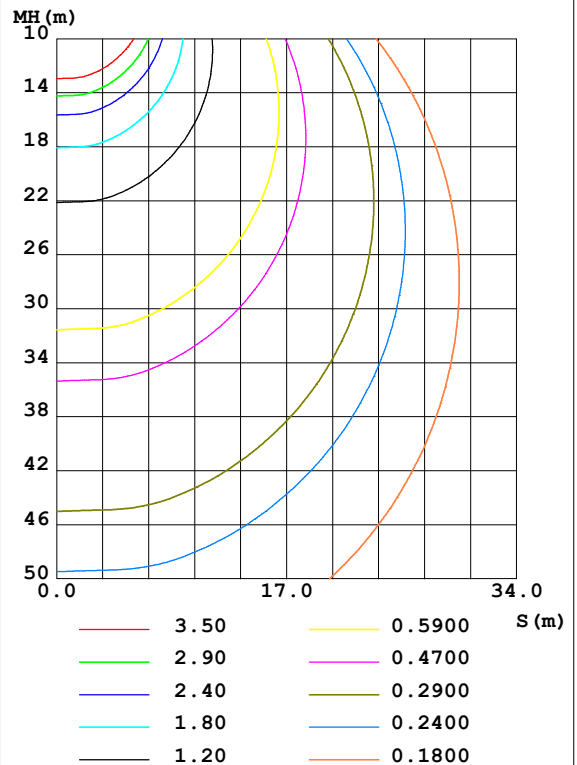
Test:U:220.5V I:0.0707A P:15.06W PF:0.9666 Freq:50.00Hz Lamp Flux:2000x1 lm		
NAME: T8 LED TUBE	TYPE:	WEIGHT:0.2
SPEC.:	DIM.:	SERIAL No.:
	SUR.:0.025*1.2	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 135.93 lm/W			
MODEL	NET-55-02-03	I <sub>max</sub> (cd)	597.9	S/MH (C0/180)	1.26
NOMINAL POWER (W)	15	LOR (%)	102.4	S/MH (C90/270)	1.23
RATED VOLTAGE (V)	AC220	TOTAL FLUX (lm)	2047.2	η UP, DN (C0-180)	4.0, 47.9
NOMINAL FLUX (lm)	2000	CIE CLASS	DIRECT	η UP, DN (C180-360)	3.6, 47.0
LAMPS INSIDE	1	η up (%)	7.5	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	AC220	η down (%)	94.8	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:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	594.6	588.7	584.5	582.6	581.2	582.1	585.2	590.0	0- 10	56.43	56.43	2.76,2.82
20	571.0	559.4	548.3	546.6	552.1	545.3	549.3	561.1	10- 20	161.5	217.9	10.6,10.9
30	531.4	507.3	488.5	491.2	500.7	491.4	492.4	511.9	20- 30	244.0	461.9	22.6,23.1
40	479.2	448.7	415.6	424.1	439.0	424.7	419.6	449.3	30- 40	294.6	756.5	37,37.8
50	417.6	376.8	331.1	348.7	376.4	349.7	335.9	374.1	40- 50	309.6	1066	52.1,53.3
60	351.2	297.3	238.8	269.6	307.7	271.2	242.6	299.7	50- 60	290.4	1356	66.3,67.8
70	282.0	224.0	142.7	194.4	239.0	195.0	146.6	222.7	60- 70	243.3	1600	78.1,80
80	217.6	155.0	51.81	128.4	177.2	128.9	55.06	153.3	70- 80	180.0	1780	86.9,89
90	159.6	99.44	0.5949	77.27	126.2	78.54	1.060	97.92	80- 90	117.0	1897	92.7,94.8
100	110.5	58.41	0.7492	42.79	83.04	43.75	0.8573	57.53	90-100	71.46	1968	96.1,98.4
110	71.24	32.34	1.110	21.80	50.07	22.65	1.164	30.39	100-110	40.75	2009	98.1,100
120	41.78	15.14	1.526	10.23	26.99	10.83	1.408	13.73	110-120	20.71	2030	99.1,101
130	21.34	6.544	1.950	4.537	12.27	5.189	1.733	6.047	120-130	9.152	2039	99.6,102
140	9.099	3.500	2.266	2.716	5.176	3.255	2.022	3.016	130-140	3.874	2043	99.8,102
150	3.893	2.825	2.564	2.698	3.529	3.019	2.635	2.464	140-150	1.973	2045	99.9,102
160	3.195	3.010	2.834	2.866	3.565	3.159	2.933	2.653	150-160	1.349	2046	99.9,102
170	3.204	3.177	3.024	2.978	3.545	3.281	3.069	2.915	160-170	0.8678	2047	100,102
180	3.014	3.317	3.186	3.042	3.042	3.308	3.159	3.014	170-180	0.2984	2047	100,102
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 911.69 lm

%lum = 44.5%

%lamp = 45.6%

Conical surface Flux(120deg): 1356.5 lm

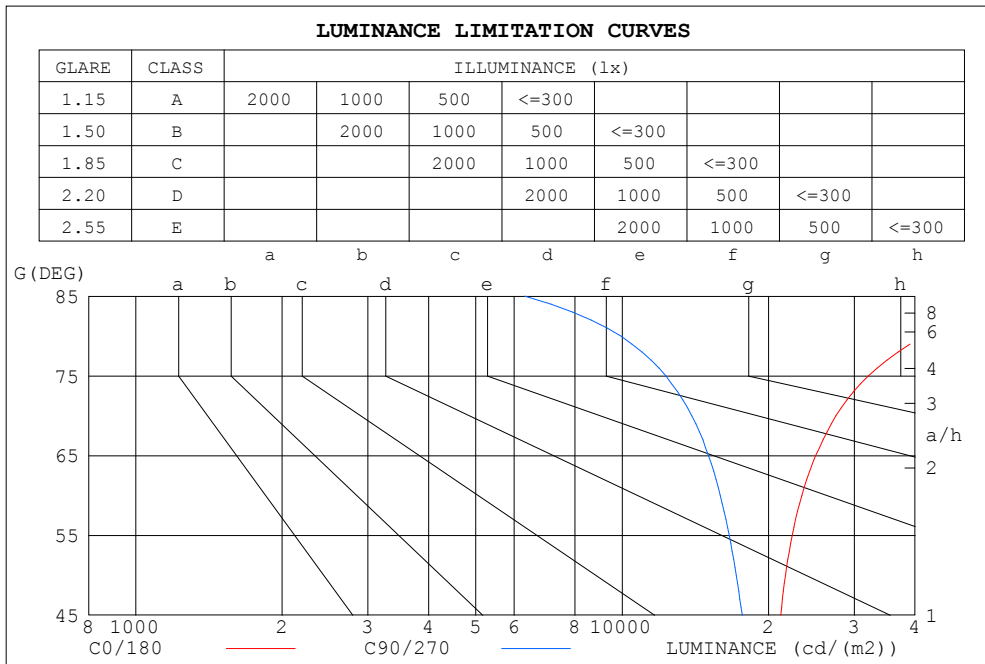
%lum = 66.3%

%lamp = 67.8%

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:

## LUMINANCE LIMITATION CURVES



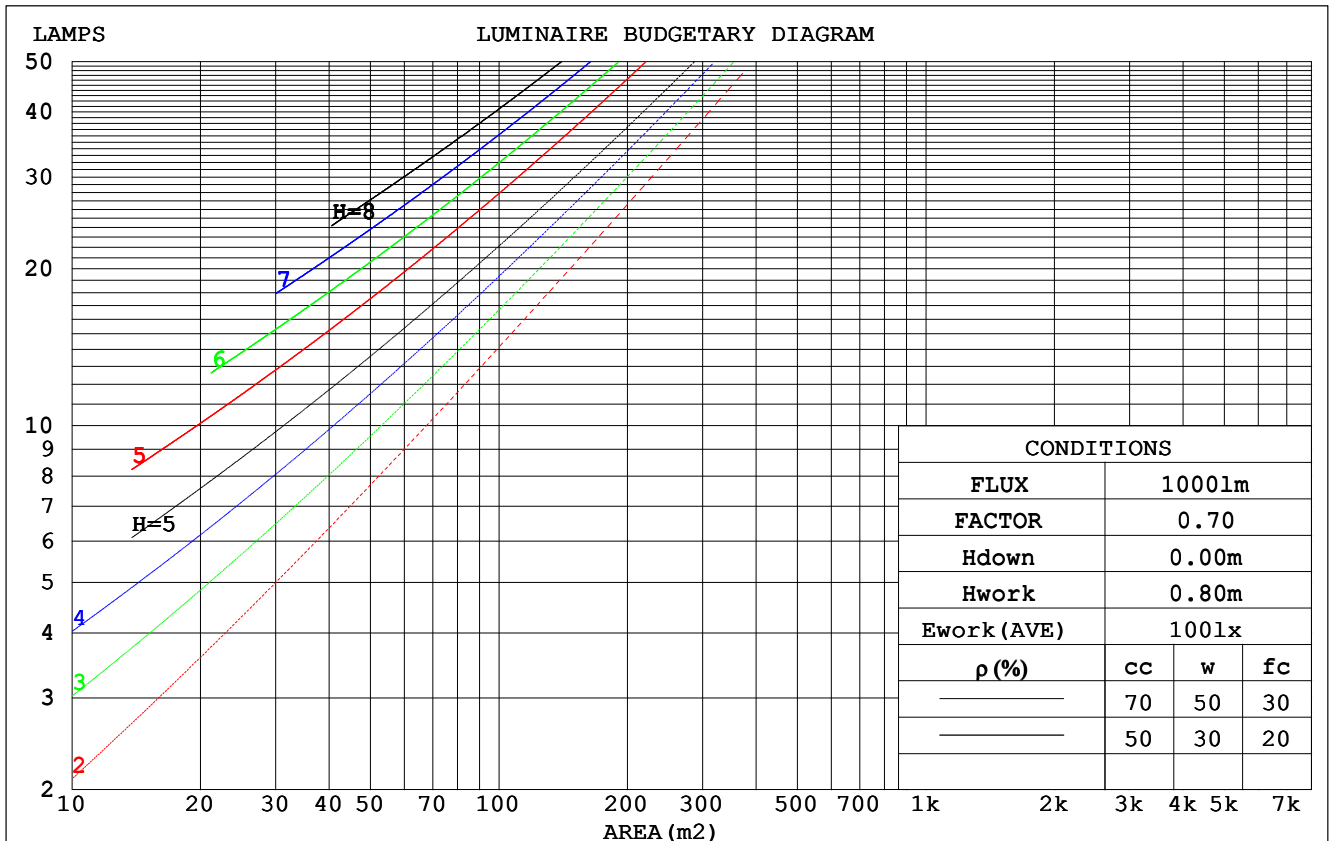
LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	71752	6301
80	41769	9945
75	32082	12301
70	27479	13907
65	25006	15044
60	23415	15917
55	22370	16598
50	21658	17170
45	21191	17655

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	1.20	1.20	1.20	1.16	1.16	1.16	1.10	1.10	1.10	1.03	1.03	1.03	.98	.98	.98	.95
1.0	1.02	.97	.92	.99	.94	.90	.93	.89	.86	.88	.84	.82	.83	.80	.78	.75
2.0	.88	.80	.74	.85	.78	.72	.80	.74	.69	.76	.71	.67	.71	.67	.64	.61
3.0	.77	.68	.60	.74	.66	.59	.70	.63	.57	.66	.60	.55	.63	.58	.54	.51
4.0	.68	.58	.51	.66	.57	.50	.62	.55	.49	.59	.52	.47	.56	.50	.46	.43
5.0	.60	.51	.43	.59	.50	.43	.55	.48	.42	.53	.46	.41	.50	.44	.39	.37
6.0	.54	.45	.38	.53	.44	.37	.50	.42	.36	.48	.41	.35	.45	.39	.35	.32
7.0	.49	.40	.33	.48	.39	.33	.45	.38	.32	.43	.36	.31	.41	.35	.31	.28
8.0	.45	.36	.30	.44	.35	.29	.42	.34	.29	.40	.33	.28	.38	.32	.27	.25
9.0	.41	.32	.26	.40	.32	.26	.38	.31	.26	.37	.30	.25	.35	.29	.25	.23
10.0	.38	.29	.24	.37	.29	.24	.35	.28	.23	.34	.27	.23	.32	.27	.22	.20



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	.369	.210	.066	.359	.205	.065	.341	.196	.062	.324	.187	.060	.309	.179	.058	
2.0	.327	.179	.055	.319	.175	.054	.302	.168	.052	.287	.161	.050	.274	.155	.049	
3.0	.294	.157	.047	.287	.154	.046	.272	.148	.045	.259	.142	.044	.246	.136	.042	
4.0	.267	.139	.041	.260	.136	.040	.247	.131	.039	.235	.126	.038	.224	.122	.037	
5.0	.244	.124	.036	.238	.122	.036	.226	.118	.035	.216	.114	.034	.205	.110	.033	
6.0	.225	.113	.032	.219	.111	.032	.209	.107	.031	.199	.103	.030	.190	.100	.030	
7.0	.208	.103	.029	.203	.101	.029	.193	.098	.028	.184	.095	.028	.176	.091	.027	
8.0	.193	.095	.027	.189	.093	.026	.180	.090	.026	.172	.087	.025	.164	.084	.025	
9.0	.181	.087	.024	.176	.086	.024	.169	.083	.024	.161	.081	.023	.154	.078	.023	
10.0	.169	.081	.023	.166	.080	.022	.158	.078	.022	.152	.075	.021	.145	.073	.021	

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	.252	.252	.252	.216	.216	.216	.147	.147	.147	.085	.085	.085	.027	.027	.027	
1.0	.246	.217	.191	.210	.186	.165	.144	.128	.114	.083	.074	.066	.027	.024	.021	
2.0	.238	.193	.155	.204	.166	.134	.140	.115	.093	.081	.067	.055	.026	.022	.018	
3.0	.230	.176	.132	.197	.151	.114	.136	.105	.080	.078	.061	.047	.025	.020	.015	
4.0	.222	.162	.117	.191	.140	.101	.131	.098	.071	.076	.057	.042	.024	.019	.014	
5.0	.214	.152	.106	.184	.132	.092	.127	.092	.065	.073	.054	.039	.024	.018	.013	
6.0	.207	.144	.098	.178	.124	.086	.123	.087	.061	.071	.051	.036	.023	.017	.012	
7.0	.200	.137	.093	.172	.118	.081	.119	.083	.057	.069	.049	.034	.022	.016	.011	
8.0	.193	.131	.088	.166	.114	.077	.115	.080	.055	.067	.047	.033	.022	.015	.011	
9.0	.186	.126	.085	.161	.109	.074	.111	.077	.053	.065	.045	.031	.021	.015	.010	
10.0	.180	.122	.082	.156	.106	.072	.108	.074	.051	.063	.044	.030	.020	.014	.010	

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	21.1	22.6	21.5	22.9	23.3	19.6	21.1	20.0	21.4	21.8
3H	23.5	24.8	23.9	25.2	25.6	21.1	22.5	21.5	22.8	23.2
4H	24.7	26.0	25.1	26.4	26.8	21.7	23.0	22.1	23.3	23.8
6H	26.1	27.3	26.5	27.7	28.1	22.0	23.3	22.5	23.7	24.1
8H	26.8	28.0	27.3	28.4	28.9	22.1	23.3	22.6	23.7	24.2
12H	27.7	28.8	28.1	29.2	29.7	22.2	23.3	22.6	23.7	24.2
4H 2H	21.7	23.0	22.1	23.4	23.8	20.6	21.9	21.0	22.2	22.7
3H	24.3	25.4	24.7	25.8	26.3	22.3	23.4	22.7	23.8	24.3
4H	25.7	26.8	26.2	27.2	27.7	23.0	24.1	23.5	24.5	25.0
6H	27.3	28.2	27.8	28.7	29.2	23.6	24.5	24.1	25.0	25.5
8H	28.1	29.0	28.7	29.5	30.1	23.8	24.6	24.3	25.1	25.7
12H	29.1	29.9	29.7	30.5	31.0	23.9	24.7	24.4	25.2	25.8
8H 4H	26.0	26.9	26.5	27.4	28.0	23.8	24.7	24.3	25.2	25.7
6H	27.9	28.6	28.4	29.2	29.7	24.7	25.4	25.3	26.0	26.6
8H	29.0	29.6	29.5	30.2	30.8	25.1	25.7	25.6	26.3	26.9
12H	30.2	30.8	30.8	31.4	32.0	25.3	25.9	25.9	26.5	27.1
12H 4H	26.0	26.9	26.6	27.4	27.9	24.0	24.9	24.6	25.4	25.9
6H	28.0	28.7	28.6	29.2	29.8	25.1	25.8	25.7	26.3	26.9
8H	29.2	29.7	29.8	30.3	31.0	25.6	26.2	26.2	26.8	27.4
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.2					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.1 / - 0.4				

CIE Pub.117, 2000 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 2.4)

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:

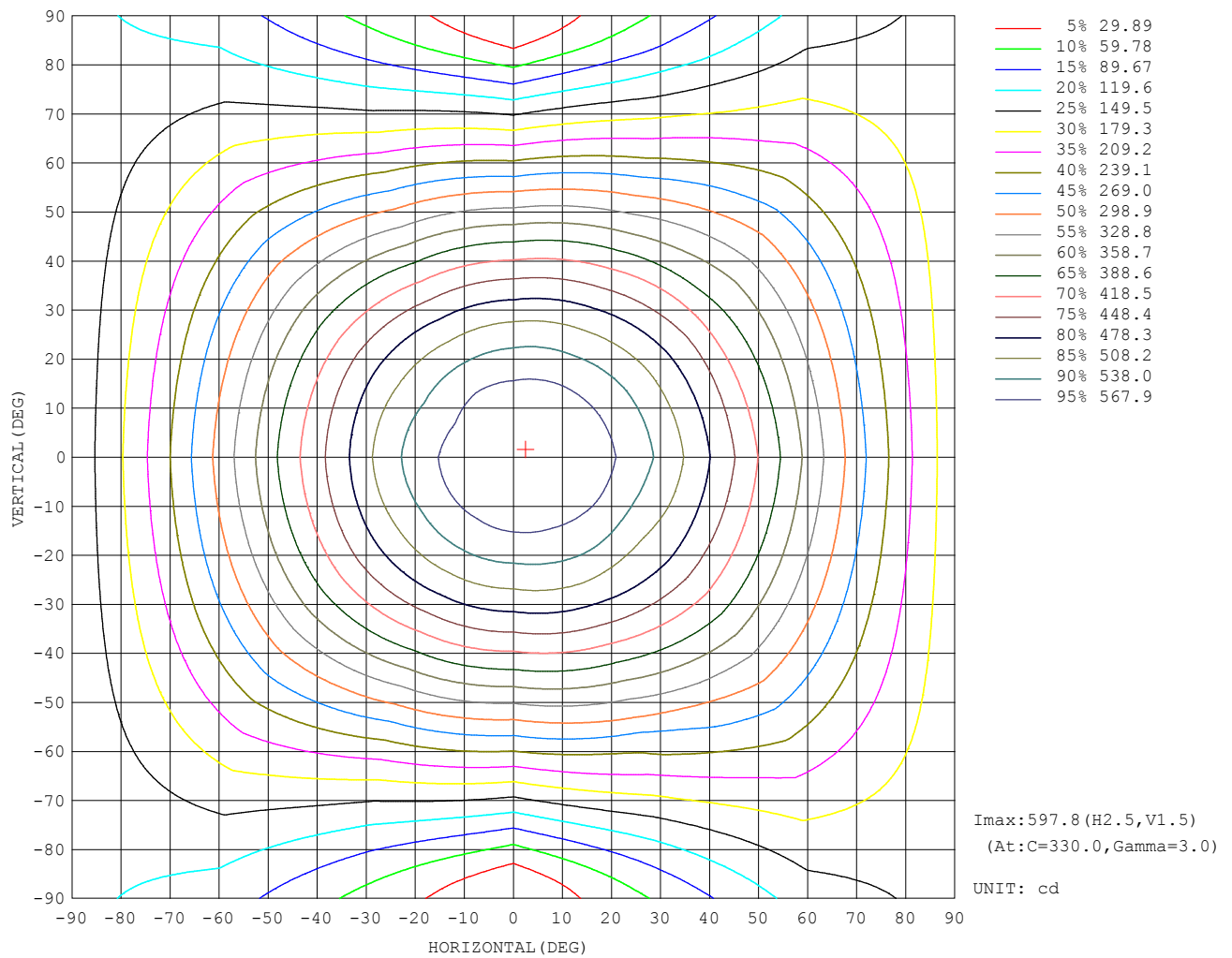
## UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	54	42	34	53	41	34	52	41	34	27
0.80	64	51	43	63	51	43	60	50	42	35
1.00	72	60	51	71	59	51	68	60	50	42
1.25	79	67	59	77	66	58	74	64	57	49
1.50	84	73	65	82	72	64	78	69	63	54
2.00	91	81	73	89	80	72	85	77	70	61
2.50	96	86	79	93	84	78	88	81	75	65
3.00	99	91	84	97	89	83	91	85	80	69
4.00	104	97	91	101	94	89	95	90	85	74
5.00	107	100	95	103	98	93	98	93	89	77
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

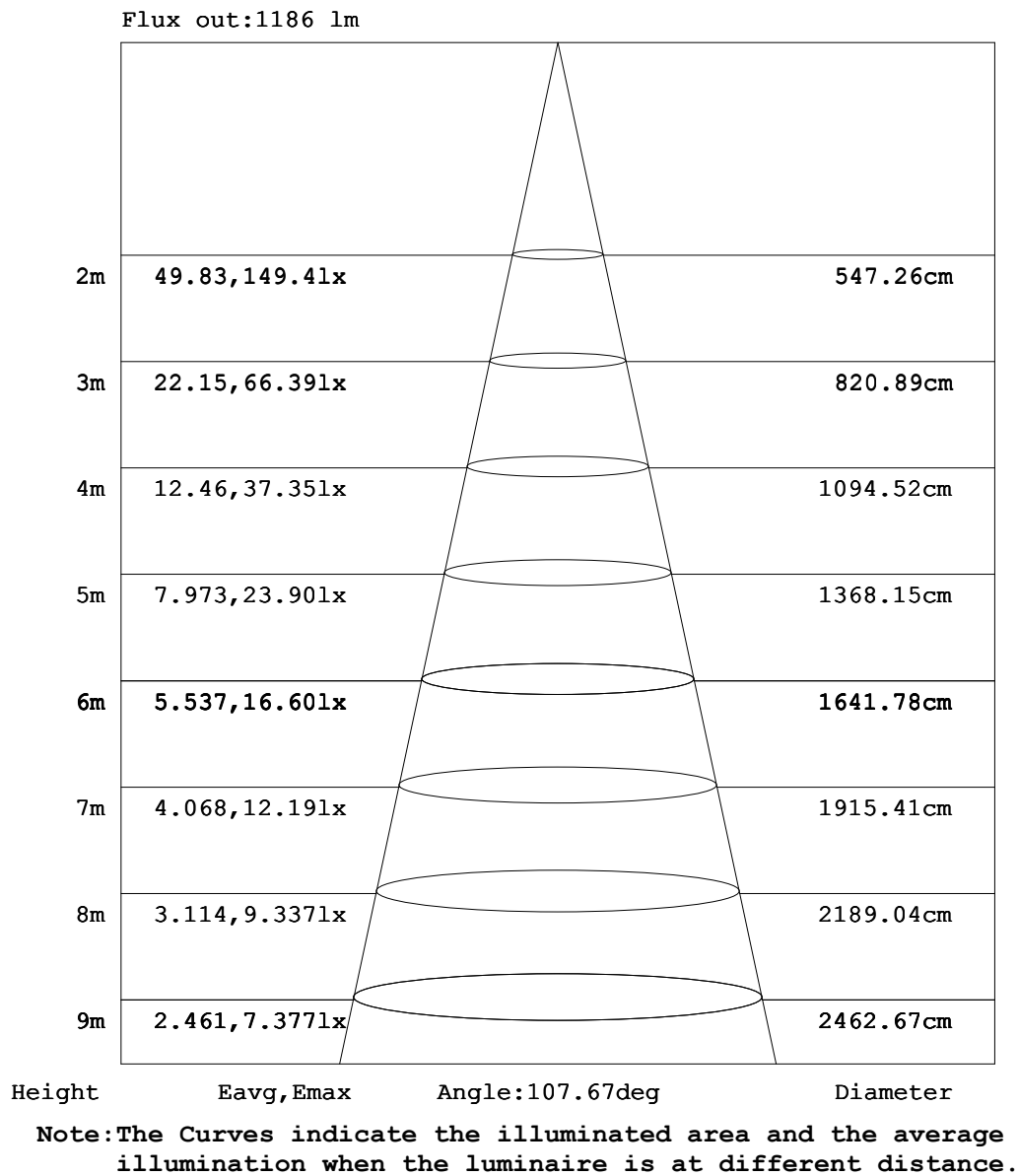


C Range: 0 - 360DEG  
C Interval: 30.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: HXQ  
Test Date: 2020-03-12

$\gamma$  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:



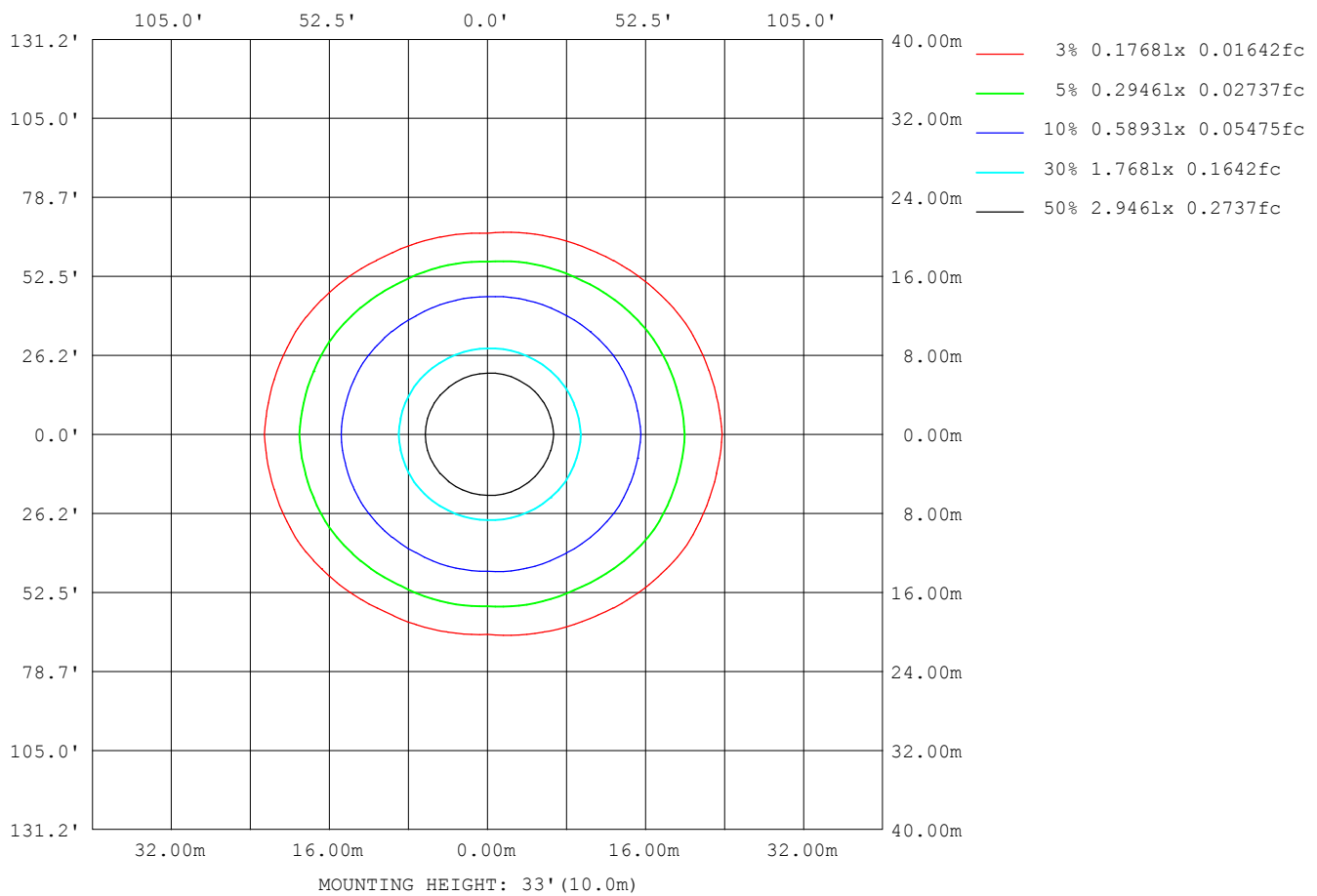
**AAI Figure**



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:0.0707A P:15.06W PF:0.9666 Freq:50.00Hz Lamp Flux:2000x1 lm		
NAME: T8 LED TUBE	TYPE:	WEIGHT:0.2
SPEC.:	DIM.:	SERIAL No.:
	SUR.:0.025*1.2	Shielding Angle:

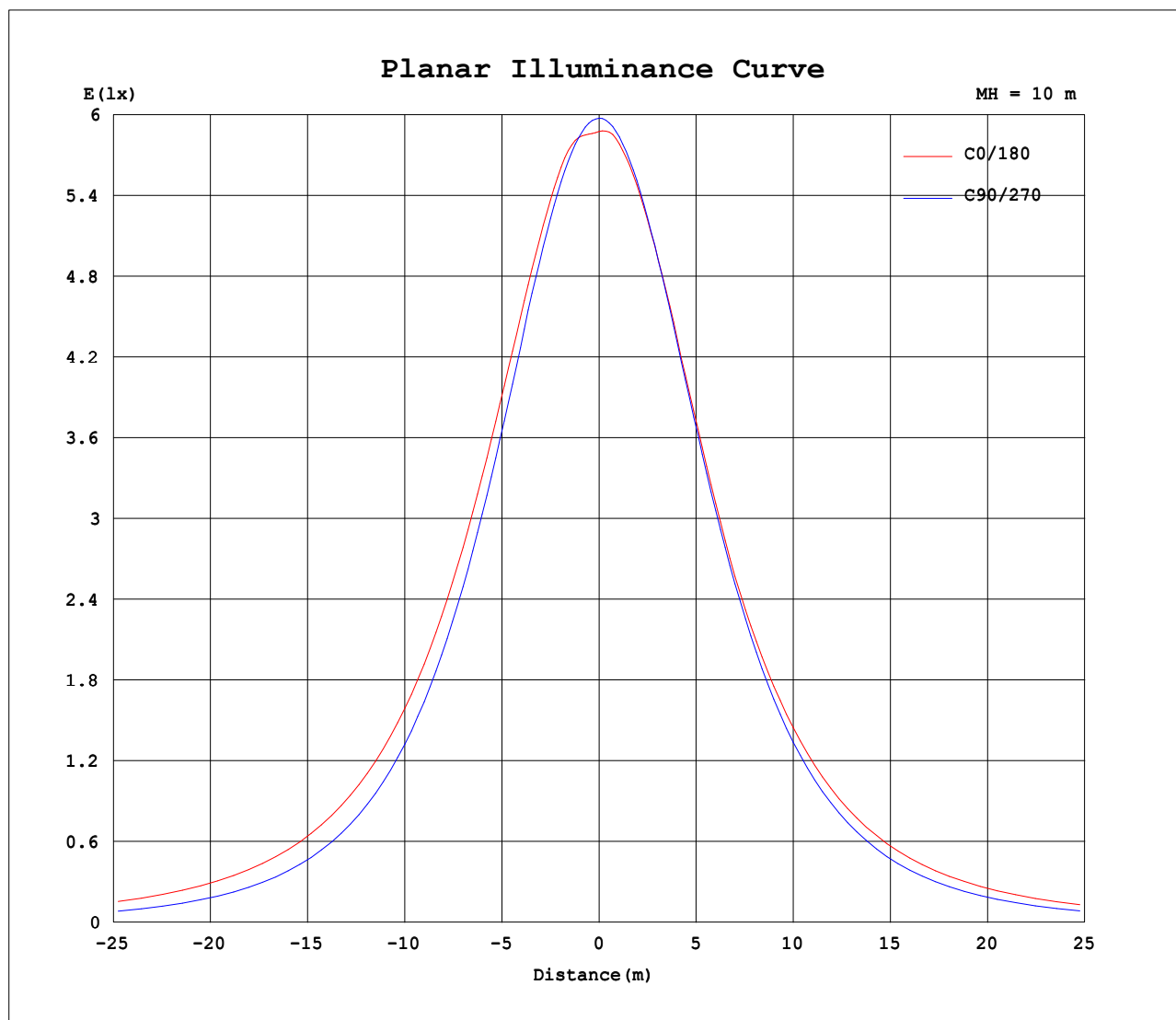
AvgL	cd/m2
L_0~180 (65) av	23291
L_0~180 (75) av	29368
L_0~180 (85) av	64780
L_90~270 (65) av	15206
L_90~270 (75) av	12544
L_90~270 (85) av	6795
L_45 (65) av	19467
L_45 (75) av	22507
L_45 (85) av	43976

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

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:

## 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	588	597	598	597	597	597	588	597	598	597	597	597						
5	591	596	595	594	593	593	589	592	593	594	596	597						
10	595	590	587	585	583	583	581	580	584	585	589	591						
15	586	580	573	569	566	567	569	563	568	570	576	580						
20	571	564	555	548	545	548	552	543	548	549	557	565						
25	553	541	531	519	519	521	528	520	519	523	532	545						
30	531	512	503	488	488	494	501	494	488	492	504	520						
35	507	493	471	454	454	464	468	464	454	458	472	492						
40	479	463	435	416	417	431	439	432	417	420	437	462						
45	450	431	396	375	377	397	409	398	378	379	399	427						
50	418	397	356	331	336	362	376	362	337	336	359	390						
55	385	362	315	286	294	325	342	326	295	290	317	360						
60	351	327	268	239	250	289	308	289	253	243	275	324						
65	317	291	232	191	209	254	274	253	212	195	234	289						
70	282	256	192	143	170	219	239	218	172	147	192	253						
75	249	223	154	95.5	133	187	207	185	136	99.3	153	217						
80	218	191	119	51.8	99.9	157	177	155	103	55.1	119	188						
85	188	161	89.2	16.5	72.1	129	151	128	74.7	19.1	87.5	158						
90	160	134	64.6	0.59	49.8	105	126	105	52.1	1.06	64.3	132						
95	134	110	45.6	0.59	33.0	83.1	103	83.5	34.9	0.72	45.1	108						
100	111	88.2	28.6	0.75	21.1	64.5	83.0	65.0	22.5	0.86	28.7	86.4						
105	89.7	69.4	19.7	0.92	13.0	48.8	65.3	49.4	14.1	1.01	19.6	67.9						
110	71.2	53.4	11.3	1.11	7.76	35.8	50.1	36.6	8.72	1.16	11.5	49.3						
115	55.4	39.9	6.84	1.32	4.57	25.5	37.3	26.3	5.36	1.28	6.85	36.8						
120	41.8	25.9	4.36	1.53	2.96	17.5	27.0	18.3	3.36	1.41	4.25	23.2						
125	30.5	16.7	3.04	1.74	2.28	11.4	18.5	12.3	2.55	1.56	2.86	15.3						
130	21.3	10.6	2.46	1.95	2.13	6.94	12.3	8.07	2.31	1.73	2.23	9.87						
135	14.2	6.93	2.29	2.12	2.26	4.36	7.74	5.37	2.44	1.91	1.99	6.19						
140	9.10	4.63	2.37	2.27	2.39	3.04	5.18	3.95	2.55	2.02	2.04	3.99						
145	5.73	3.46	2.52	2.43	2.52	2.74	3.83	3.42	2.65	2.34	2.24	2.89						
150	3.89	2.99	2.66	2.56	2.64	2.75	3.53	3.30	2.73	2.63	2.47	2.46						
155	3.25	2.99	2.80	2.72	2.72	2.83	3.54	3.35	2.82	2.76	2.70	2.42						
160	3.19	3.10	2.92	2.83	2.82	2.92	3.56	3.38	2.93	2.93	2.82	2.49						
165	3.23	3.17	3.01	2.92	2.89	2.96	3.56	3.47	3.03	3.01	2.92	2.66						
170	3.20	3.25	3.10	3.02	2.97	2.99	3.55	3.46	3.10	3.07	3.02	2.81						
175	3.09	3.26	3.16	3.11	3.03	3.00	3.25	3.38	3.16	3.10	3.09	2.87						
180	3.01	3.39	3.24	3.19	3.08	3.01	3.04	3.41	3.20	3.16	3.11	2.92						

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: