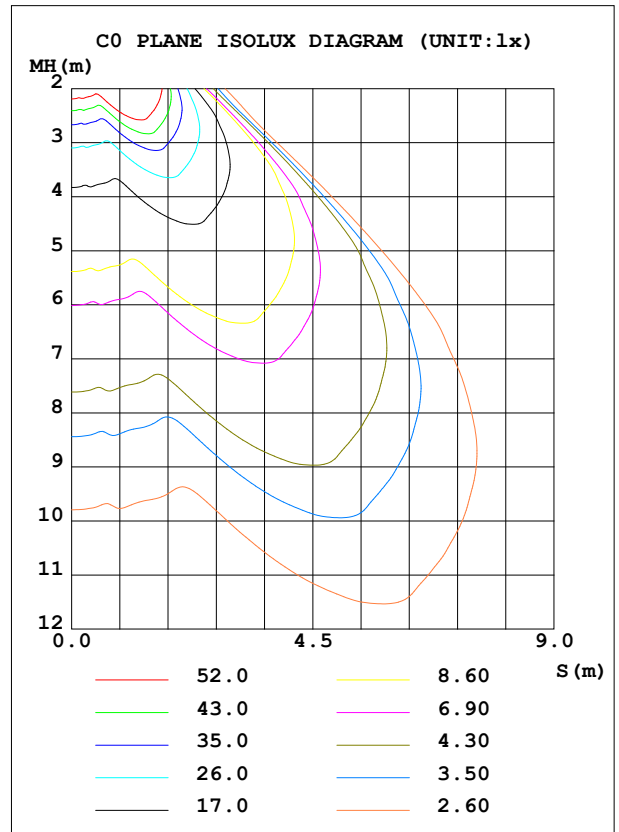
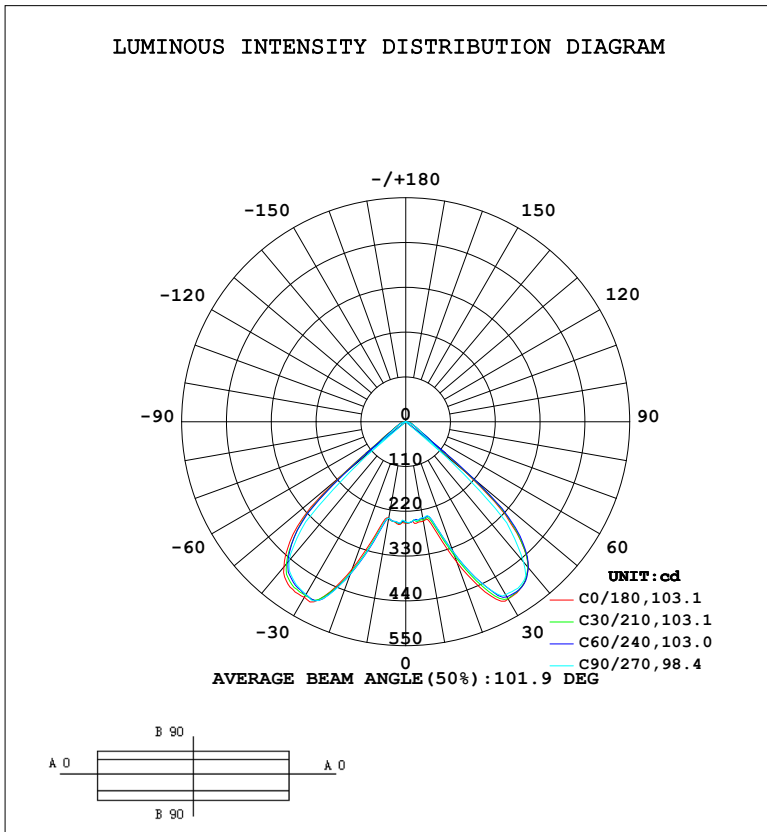


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.07V I:0.0856A P:10.446W PF:0.5543 Freq:50.00Hz		
Lamp Flux:989.195x1 lm		
NAME: HYO-240R-10W 3000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	

DATA OF LAMP		PHOTOMETRIC DATA			
MODEL		Imax (cd)	505.9	S/MH (C0/180)	1.67
NOMINAL POWER (W)		LOR (%)	100.0	S/MH (C90/270)	1.56
RATED VOLTAGE (V)	--	TOTAL FLUX (lm)	989.19	$\eta$ UP, DN (C0-180)	0.0, 50.2
NOMINAL FLUX (lm)	989.195	CIE CLASS	DIRECT	$\eta$ UP, DN (C180-360)	0.0, 49.8
LAMPS INSIDE	1	$\eta$ up (%)	0.0	CIBSE SHR NOM	1.00
TEST VOLTAGE (V)	--	$\eta$ down (%)	100.0	CIBSE SHR MAX	1.00



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature: 25.3°C  
 Operators: DAMIN  
 Test Date: 2023-08-15

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity: 65.0%  
 Test Distance: 9.000m [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	248.3	242.2	239.7	239.2	241.6	240.3	241.2	242.9	0- 10	23.36	23.36	2.36,2.36
20	366.9	338.6	339.2	351.2	384.8	398.6	397.0	387.5	10- 20	83.39	106.7	10.8,10.8
30	502.6	498.7	490.7	490.7	498.0	489.7	490.3	486.3	20- 30	209.8	316.6	32,32
40	468.0	469.4	450.0	464.7	465.7	450.5	445.3	446.5	30- 40	302.8	619.4	62.6,62.6
50	188.5	225.1	94.45	221.6	213.3	183.7	88.83	172.9	40- 50	273.9	893.3	90.3,90.3
60	32.30	32.28	32.42	33.53	33.54	31.39	28.11	30.96	50- 60	60.92	954.3	96.5,96.5
70	16.88	16.78	13.75	16.77	16.92	15.69	12.48	15.59	60- 70	22.06	976.3	98.7,98.7
80	8.606	6.028	0.8522	5.860	8.649	5.229	0.9512	4.975	70- 80	11.30	987.6	99.8,99.8
90	0.1359	0.1195	0.1002	0.1156	0.1580	0.1378	0.1137	0.1330	80- 90	1.560	989.2	100,100
100									90-100			
110									100-110			
120									110-120			
130									120-130			
140									130-140			
150									140-150			
160									150-160			
170									160-170			
180									170-180			
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 775.42 lm

%lum = 78.4%  
 %lamp = 78.4%

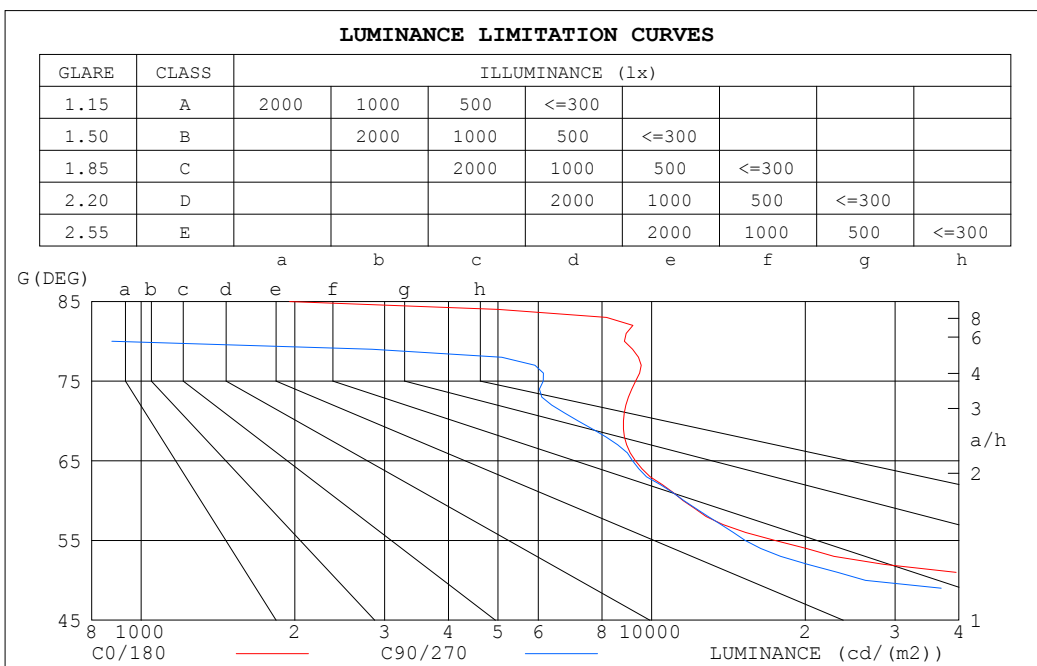
Conical surface Flux(120deg): 954.27 lm

%lum = 96.5%  
 %lamp = 96.5%

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature:25.3°C  
 Operators:DAMIN  
 Test Date:2023-08-15

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity:65.0%  
 Test Distance:9.000m [K=1.0000]  
 Remarks:

LUMINANCE LIMITATION CURVES



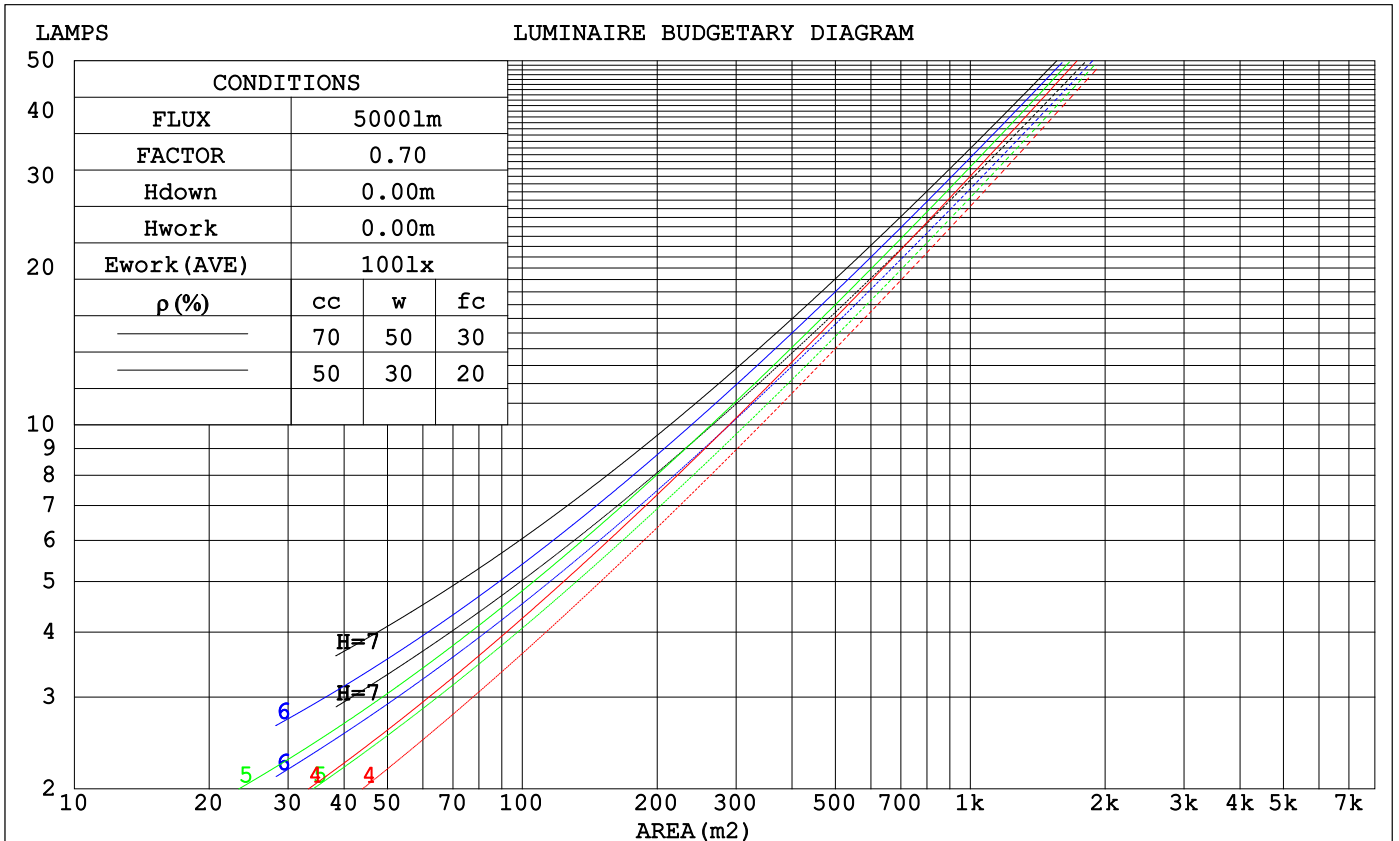
LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1953	427
80	8850	876
75	9304	6138
70	8811	7181
65	9298	9182
60	11535	11577
55	17466	15264
50	52367	26239
45	97245	88556

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature: 25.3°C  
 Operators: DAMIN  
 Test Date: 2023-08-15

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity: 65.0%  
 Test Distance: 9.000m [K=1.0000]  
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Coefficients of Utilization(CU)									
0.0	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1.0	1.08	1.05	1.02	1.06	1.03	1.00	1.02	.99	.97	.98	.96	.94	.94	.93	.91	.89
2.0	.97	.92	.87	.95	.90	.86	.92	.88	.84	.89	.85	.82	.86	.83	.81	.79
3.0	.87	.81	.75	.86	.80	.75	.83	.78	.74	.80	.76	.72	.78	.74	.71	.69
4.0	.79	.71	.66	.77	.71	.65	.75	.69	.64	.73	.68	.64	.71	.66	.63	.61
5.0	.71	.63	.58	.70	.63	.57	.68	.62	.57	.66	.61	.56	.64	.60	.56	.54
6.0	.64	.56	.51	.63	.56	.51	.62	.55	.50	.60	.54	.50	.59	.53	.49	.47
7.0	.58	.50	.45	.58	.50	.45	.56	.49	.44	.55	.49	.44	.54	.48	.44	.42
8.0	.53	.45	.40	.53	.45	.40	.51	.44	.40	.50	.44	.39	.49	.43	.39	.37
9.0	.49	.41	.36	.48	.41	.36	.47	.40	.36	.46	.40	.35	.45	.39	.35	.33
10.0	.45	.37	.32	.44	.37	.32	.43	.36	.32	.42	.36	.32	.41	.36	.32	.30



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature:25.3°C  
 Operators:DAMIN  
 Test Date:2023-08-15

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity:65.0%  
 Test Distance:9.000m [K=1.0000]  
 Remarks:

WEC AND CCEC

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.232	.132	.042	.225	.128	.041	.212	.122	.039	.201	.116	.037	.190	.110	.035	
2.0	.228	.125	.038	.222	.122	.038	.210	.117	.036	.200	.112	.035	.191	.108	.034	
3.0	.219	.116	.035	.213	.114	.034	.204	.110	.034	.195	.107	.033	.186	.103	.032	
4.0	.208	.108	.032	.204	.107	.032	.195	.104	.031	.187	.101	.030	.180	.098	.030	
5.0	.198	.101	.029	.194	.100	.029	.187	.097	.029	.179	.095	.028	.173	.092	.028	
6.0	.188	.094	.027	.185	.093	.027	.178	.091	.027	.172	.089	.026	.166	.087	.026	
7.0	.179	.088	.025	.176	.087	.025	.170	.086	.025	.164	.084	.024	.158	.082	.024	
8.0	.170	.083	.023	.167	.082	.023	.162	.081	.023	.156	.079	.023	.152	.078	.023	
9.0	.162	.078	.022	.159	.077	.022	.154	.076	.022	.149	.075	.021	.145	.074	.021	
10.0	.154	.074	.020	.151	.073	.020	.147	.072	.020	.143	.071	.020	.139	.070	.020	

$\rho_{cc}$	80%			70%			50%			30%			10%			0
$\rho_w$	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
$\rho_{fc}$	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.175	.157	.141	.150	.135	.121	.102	.093	.084	.059	.054	.049	.019	.017	.016	
2.0	.164	.132	.106	.140	.114	.091	.096	.079	.064	.055	.046	.037	.018	.015	.012	
3.0	.155	.114	.082	.133	.098	.071	.091	.068	.050	.053	.040	.029	.017	.013	.010	
4.0	.147	.100	.064	.126	.086	.056	.087	.060	.039	.050	.035	.023	.016	.011	.008	
5.0	.140	.089	.052	.120	.077	.045	.083	.054	.032	.048	.032	.019	.015	.010	.006	
6.0	.134	.081	.043	.115	.070	.037	.079	.049	.026	.046	.029	.016	.015	.009	.005	
7.0	.128	.074	.036	.110	.064	.031	.076	.045	.022	.044	.026	.013	.014	.009	.004	
8.0	.122	.068	.031	.105	.059	.027	.073	.041	.019	.042	.024	.011	.014	.008	.004	
9.0	.117	.063	.027	.101	.055	.023	.070	.039	.017	.041	.023	.010	.013	.007	.003	
10.0	.113	.059	.023	.097	.051	.020	.067	.036	.015	.039	.021	.009	.013	.007	.003	

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature:25.3°C  
 Operators:DAMIN  
 Test Date:2023-08-15

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity:65.0%  
 Test Distance:9.000m [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	25.7	27.1	26.0	27.2	27.4	25.3	26.7	25.6	26.8	27.0
3H	25.6	26.8	25.9	27.0	27.3	25.2	26.4	25.5	26.6	26.9
4H	25.6	26.7	25.9	27.0	27.2	25.2	26.3	25.5	26.5	26.8
6H	25.6	26.6	25.9	26.9	27.1	25.1	26.1	25.4	26.4	26.7
8H	25.6	26.6	25.9	26.8	27.1	25.0	26.0	25.4	26.3	26.6
12H	25.5	26.5	25.9	26.8	27.1	25.0	26.0	25.3	26.2	26.5
4H 2H	25.5	26.6	25.8	26.9	27.1	25.1	26.2	25.4	26.5	26.7
3H	25.4	26.4	25.8	26.7	27.0	25.0	26.0	25.4	26.3	26.6
4H	25.5	26.3	25.8	26.6	27.0	25.0	25.9	25.4	26.2	26.5
6H	25.5	26.3	25.9	26.6	27.0	25.0	25.7	25.3	26.1	26.4
8H	25.5	26.2	25.9	26.6	26.9	24.9	25.6	25.3	26.0	26.3
12H	25.5	26.1	25.9	26.5	26.9	24.9	25.5	25.3	25.9	26.3
8H 4H	25.4	26.1	25.8	26.4	26.8	24.9	25.6	25.3	26.0	26.4
6H	25.4	26.0	25.9	26.4	26.8	24.9	25.5	25.3	25.9	26.3
8H	25.5	26.0	25.9	26.4	26.8	24.8	25.3	25.3	25.8	26.2
12H	25.5	25.9	25.9	26.3	26.8	24.8	25.2	25.3	25.7	26.1
12H 4H	25.3	26.0	25.8	26.3	26.7	24.9	25.5	25.3	25.9	26.3
6H	25.4	25.9	25.9	26.3	26.8	24.9	25.4	25.3	25.8	26.2
8H	25.4	25.9	25.9	26.3	26.8	24.8	25.2	25.3	25.7	26.2
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 2.5 / - 4.9					+ 2.7 / - 6.2				
1.5H	+ 1.9 / - 5.7					+ 2.0 / - 6.3				
2.0H	+ 5.6 / - 5.2					+ 6.0 / - 6.2				

CIE Pub.117, 989.2 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -0.0)  
 Area: 0.0056 m2

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature:25.3°C  
 Operators:DAMIN  
 Test Date:2023-08-15

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity:65.0%  
 Test Distance:9.000m [K=1.0000]  
 Remarks:

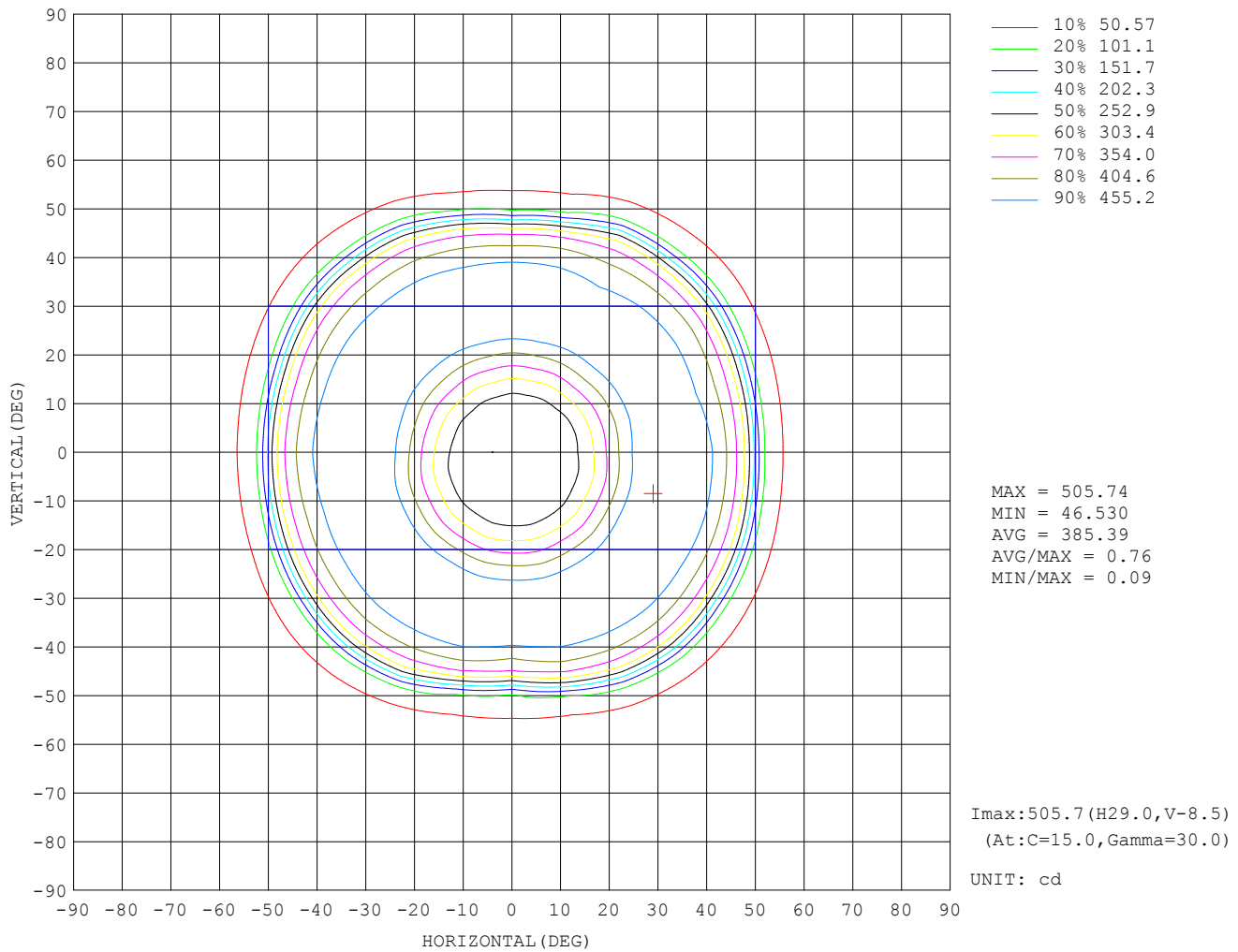
**UTILIZATION FACTORS TABLE**

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	68	58	52	67	58	52	66	57	52	46
0.80	78	69	63	77	69	63	76	68	62	57
1.00	87	78	72	86	78	72	84	78	72	66
1.25	93	85	80	92	85	80	90	83	79	73
1.50	97	90	85	96	89	84	93	88	83	77
2.00	103	96	92	101	95	91	98	93	90	83
2.50	105	100	95	103	98	94	100	96	92	85
3.00	108	103	99	106	101	98	102	98	95	88
4.00	110	106	103	108	104	101	104	101	99	91
5.00	112	108	105	109	106	104	105	103	101	92
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature: 25.3°C  
 Operators: DAMIN  
 Test Date: 2023-08-15

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System: EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity: 65.0%  
 Test Distance: 9.000m [K=1.0000]  
 Remarks:

ISOCANDELA DIAGRAM

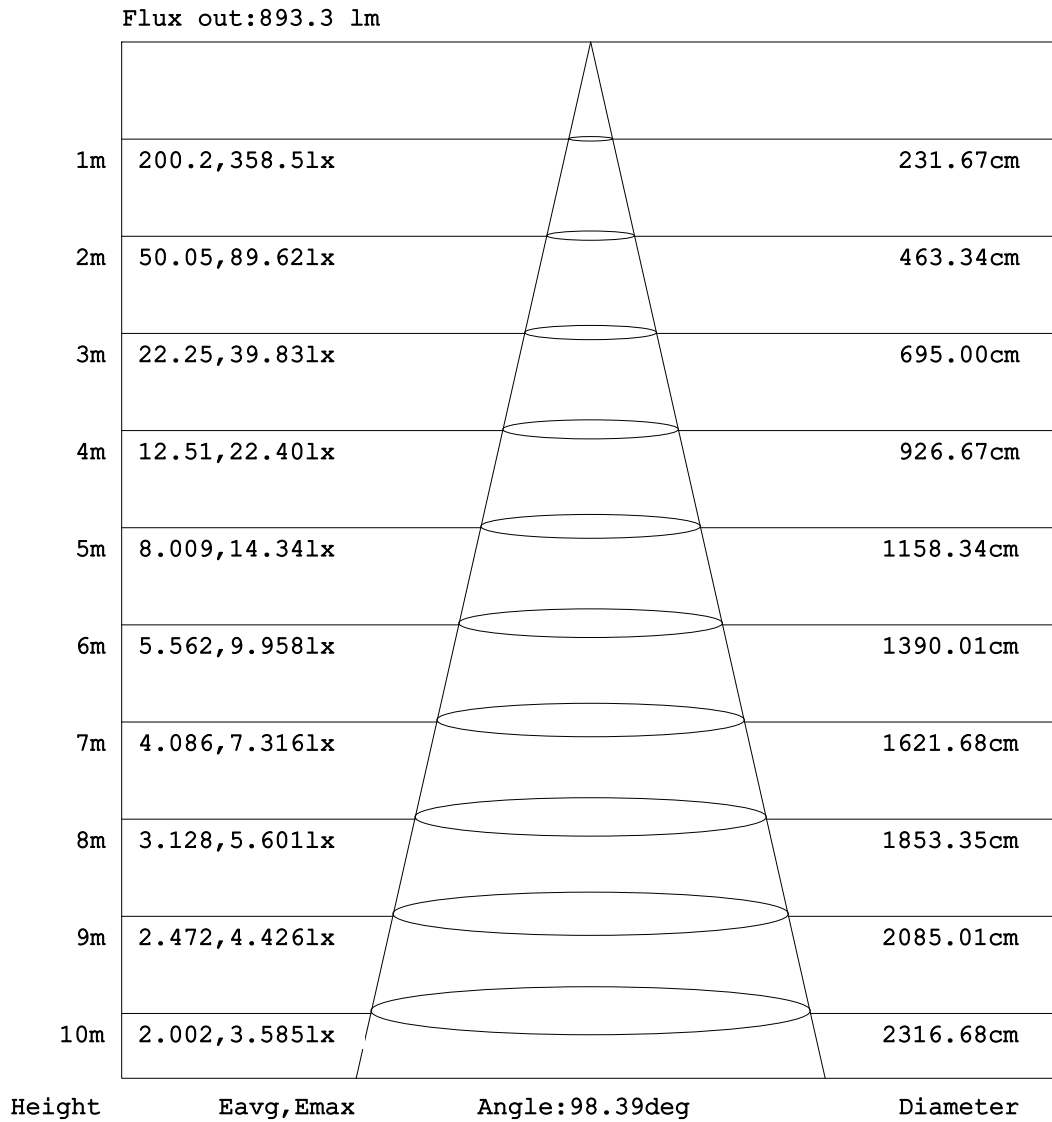


C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature:25.3°C  
 Operators:DAMIN  
 Test Date:2023-08-15

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity:65.0%  
 Test Distance:9.000m [K=1.0000]  
 Remarks:



**AAI Figure**

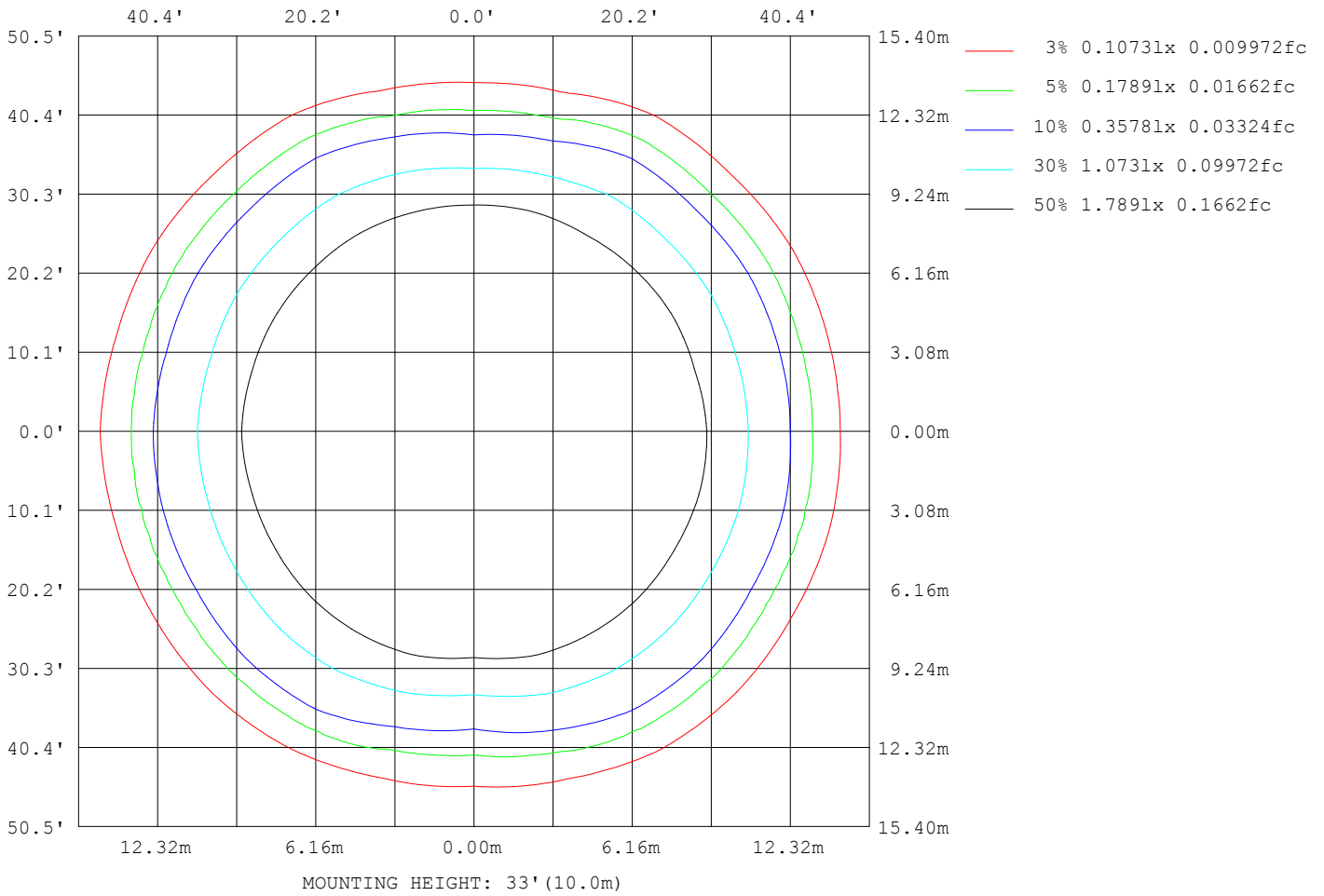


**Note:**The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature:25.3°C  
 Operators:DAMIN  
 Test Date:2023-08-15

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity:65.0%  
 Test Distance:9.000m [K=1.0000]  
 Remarks:

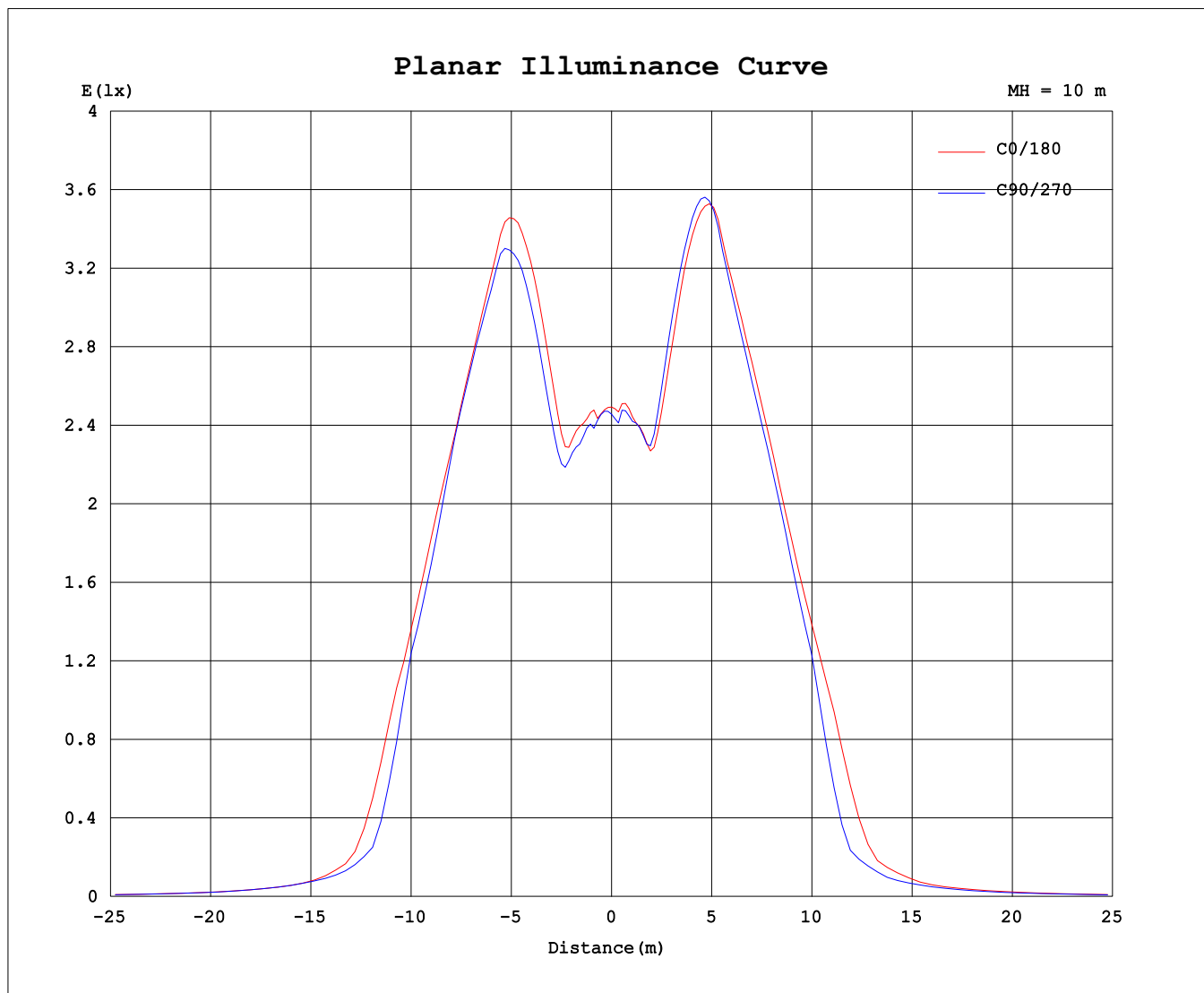
ISOLUX DIAGRAM



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature: 25.3°C  
 Operators: DAMIN  
 Test Date: 2023-08-15

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity: 65.0%  
 Test Distance: 9.000m [K=1.0000]  
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature: 25.3°C  
 Operators: DAMIN  
 Test Date: 2023-08-15

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity: 65.0%  
 Test Distance: 9.000m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Table--1

UNIT: cd

C (DEG) \ γ (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	249	248	248	247	247	246	246	245	245	244	244	244	249	248	248	247	247	246	246
5	251	244	242	242	242	242	241	242	247	248	248	247	251	249	249	247	248	247	248
10	248	247	245	242	241	240	240	240	239	239	238	238	242	240	240	240	241	240	241
15	273	263	260	252	251	248	252	252	259	261	270	275	287	296	298	306	305	308	301
20	367	354	349	339	338	334	339	340	348	351	363	369	385	393	393	399	398	401	397
25	461	450	446	435	434	430	435	437	446	448	456	459	472	475	473	478	479	482	478
30	503	506	502	499	497	493	491	491	492	491	488	488	498	495	493	490	490	489	490
35	496	498	495	496	496	494	491	490	490	489	487	484	496	491	488	483	481	478	478
40	468	471	467	469	469	466	450	467	466	465	459	458	466	458	456	450	450	445	445
45	385	390	390	396	397	384	351	375	391	392	386	383	392	378	377	373	376	363	347
50	189	208	206	225	216	153	94.5	131	213	222	208	212	213	193	197	184	185	126	88.8
55	56.1	59.0	57.9	60.7	58.9	49.7	49.0	48.9	56.7	60.5	59.8	60.5	63.7	59.9	60.0	55.8	55.1	45.6	43.2
60	32.3	32.3	32.5	32.3	32.7	32.1	32.4	32.3	33.0	33.5	33.8	32.6	33.5	33.3	32.1	31.4	30.1	29.0	28.1
65	22.0	22.1	22.0	21.9	21.9	21.8	21.7	21.8	22.2	22.7	22.7	22.5	23.0	22.5	21.8	21.0	20.3	19.9	19.6
70	16.9	17.0	16.8	16.8	16.3	14.5	13.8	14.3	16.0	16.8	16.7	16.7	16.9	16.7	16.1	15.7	15.2	13.3	12.5
75	13.5	13.6	13.2	11.9	9.21	8.83	8.90	8.79	8.99	11.4	13.0	13.2	13.4	13.2	12.5	11.2	8.22	7.61	7.63
80	8.61	8.90	7.78	6.03	4.13	1.12	0.85	1.05	3.72	5.86	7.52	8.60	8.65	8.71	7.22	5.23	3.45	1.02	0.95
85	0.95	1.35	0.44	0.24	0.17	0.19	0.21	0.20	0.18	0.24	0.38	1.12	1.07	1.24	0.50	0.31	0.24	0.26	0.28
90	0.14	0.15	0.15	0.12	0.11	0.10	0.10	0.10	0.11	0.12	0.15	0.15	0.16	0.18	0.17	0.14	0.12	0.12	0.11

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: 10.0deg/s  
 Temperature:25.3°C  
 Operators:DAMIN  
 Test Date:2023-08-15

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
 Humidity:65.0%  
 Test Distance:9.000m [K=1.0000]  
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Table--2

UNIT: cd

C (DEG)\ γ (DEG)	285	300	315	330	345																
0	245	245	244	244	244																
5	248	249	248	248	247																
10	241	243	243	243	243																
15	301	292	289	278	274																
20	398	390	388	374	368																
25	478	471	469	460	455																
30	491	487	486	487	487																
35	478	471	476	477	479																
40	446	438	447	452	450																
45	357	368	369	379	374																
50	105	183	173	189	184																
55	44.6	54.0	53.5	57.0	56.0																
60	29.0	29.9	31.0	31.4	32.4																
65	19.8	20.3	20.9	21.2	21.8																
70	13.0	14.8	15.6	15.9	16.5																
75	7.64	7.89	10.3	12.2	13.0																
80	1.00	2.71	4.98	6.63	8.17																
85	0.27	0.25	0.29	0.43	0.93																
90	0.12	0.12	0.13	0.18	0.19																

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: 10.0deg/s  
Temperature:25.3°C  
Operators:DAMIN  
Test Date:2023-08-15

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-3000H\_V1 SYSTEM V2.00.463  
Humidity:65.0%  
Test Distance:9.000m [K=1.0000]  
Remarks: