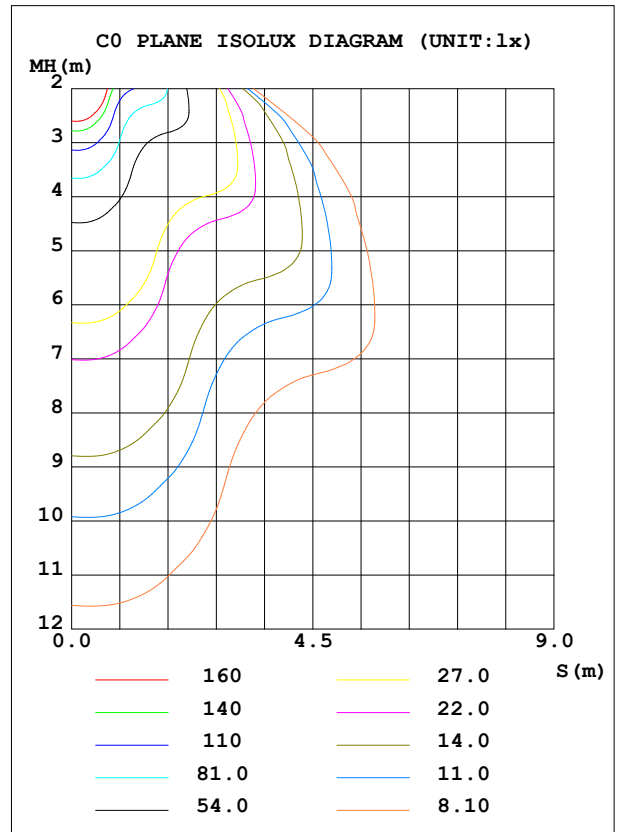
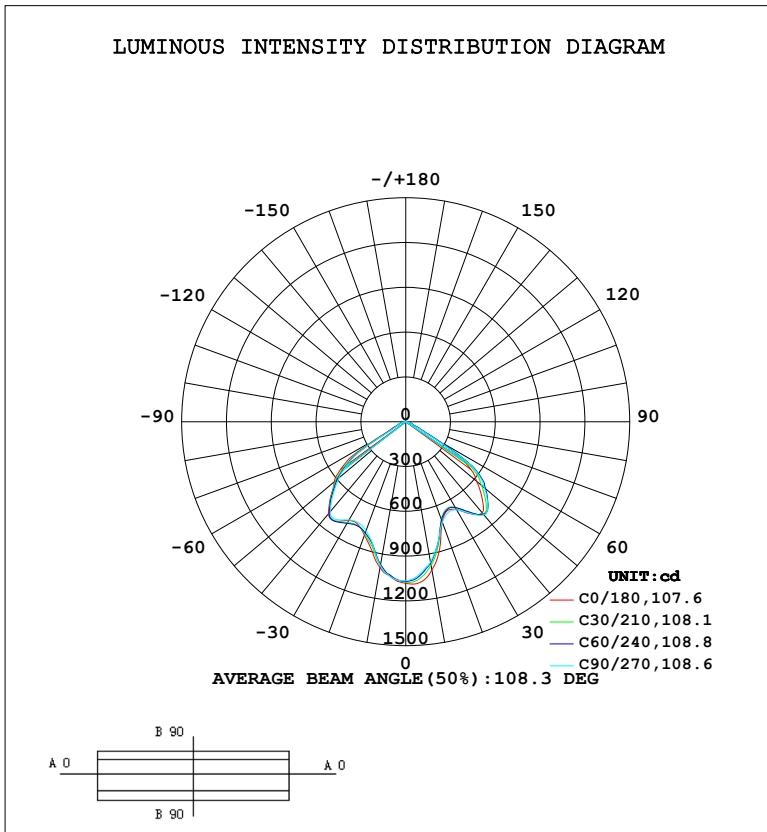


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.15V I:0.1612A P:20.135W PF:0.5673 Freq:50.00Hz		
Lamp Flux:2262.83x1 lm		
NAME: HYD-240R-20W 4000K	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:	

DATA OF LAMP		PHOTOMETRIC DATA Eff: 112.38 lm/W			
MODEL		I _{max} (cd)	1088	S/MH (C0/180)	1.00
NOMINAL POWER (W)		LOR (%)	100.0	S/MH (C90/270)	1.01
RATED VOLTAGE (V)	--	TOTAL FLUX (lm)	2262.8	η UP, DN (C0-180)	0.0, 50.8
NOMINAL FLUX (lm)	2262.83	CIE CLASS	DIRECT	η UP, DN (C180-360)	0.0, 49.2
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE (V)	--	η down (%)	100.0	CIBSE SHR MAX	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

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:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1008	969.4	954.7	960.3	993.1	972.1	978.2	998.9	0- 10	97.66	97.66	4.32,4.32
20	715.0	698.6	716.1	753.5	808.8	795.5	778.1	729.0	10- 20	239.9	337.5	14.9,14.9
30	678.1	659.6	681.6	712.8	763.2	787.6	758.6	698.0	20- 30	329.3	666.8	29.5,29.5
40	797.0	806.6	814.0	802.7	806.5	796.5	788.4	771.6	30- 40	483.1	1150	50.8,50.8
50	620.9	684.7	685.6	644.0	624.7	598.5	585.7	578.5	40- 50	555.4	1705	75.4,75.4
60	215.0	240.1	210.6	247.7	211.6	147.1	131.5	194.7	50- 60	424.0	2129	94.1,94.1
70	49.48	47.64	46.02	46.05	50.11	50.89	50.02	50.61	60- 70	89.32	2219	98,98
80	22.03	18.14	13.97	16.82	23.49	22.10	17.94	19.89	70- 80	36.64	2255	99.7,99.7
90	0.6099	0.5550	0.4962	0.5646	0.6542	0.6485	0.5608	0.6224	80- 90	7.610	2263	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): 1432.7 lm

%lum = 63.3%

%lamp = 63.3%

Conical surface Flux(120deg): 2129.3 lm

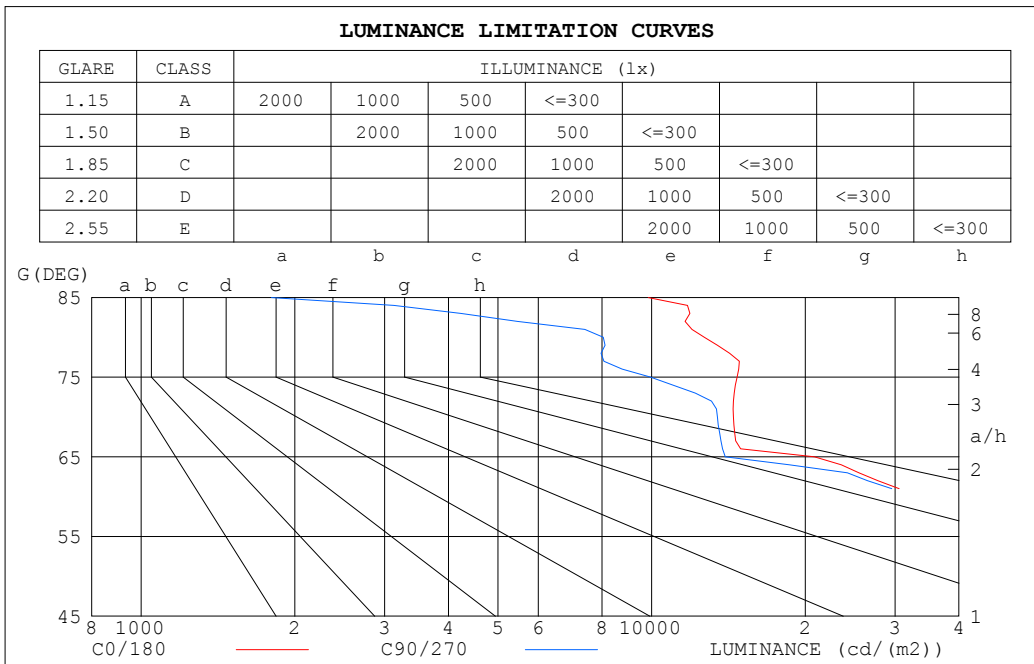
%lum = 94.1%

%lamp = 94.1%

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:

LUMINANCE LIMITATION CURVES



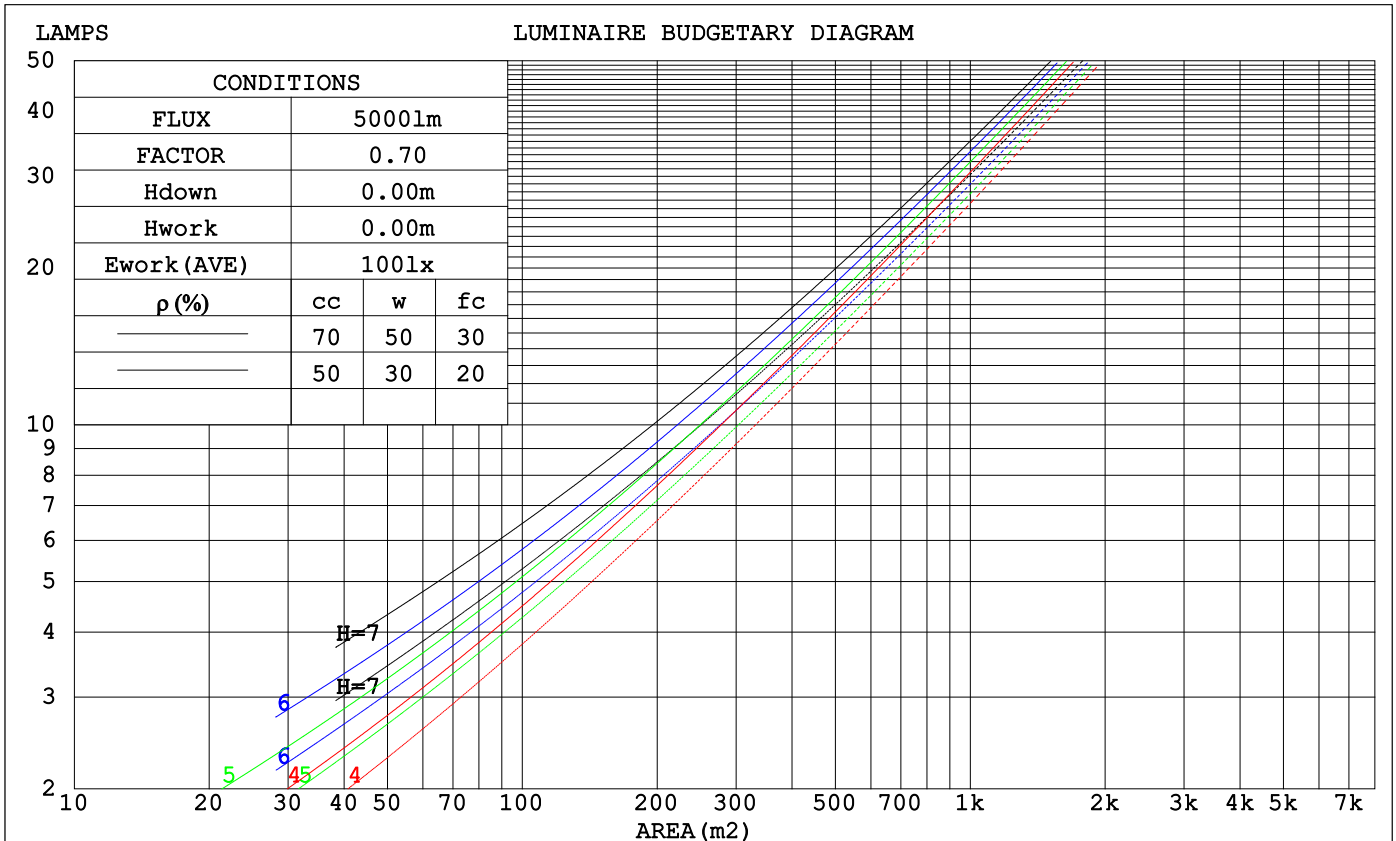
LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	9851	1801
80	12686	8046
75	14706	9955
70	14466	13456
65	20845	13945
60	43003	42118
55	87719	99741
50	96593	106661
45	102379	109835

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

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						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	1.07	1.03	1.00	1.05	1.02	.99	1.01	.98	.96	.97	.95	.93	.93	.92	.90	.88
2.0	.95	.89	.85	.93	.88	.84	.90	.85	.82	.87	.83	.80	.84	.81	.78	.76
3.0	.85	.78	.72	.83	.77	.71	.80	.75	.70	.78	.73	.69	.75	.71	.68	.66
4.0	.76	.68	.62	.74	.67	.61	.72	.66	.61	.70	.64	.60	.68	.63	.59	.57
5.0	.68	.60	.54	.67	.59	.53	.65	.58	.53	.63	.57	.52	.61	.56	.52	.50
6.0	.61	.53	.47	.60	.52	.47	.59	.52	.46	.57	.51	.46	.55	.50	.46	.44
7.0	.56	.47	.41	.55	.47	.41	.53	.46	.41	.52	.46	.41	.51	.45	.40	.39
8.0	.51	.43	.37	.50	.42	.37	.49	.42	.37	.47	.41	.36	.46	.41	.36	.34
9.0	.46	.39	.33	.46	.38	.33	.45	.38	.33	.44	.37	.33	.43	.37	.33	.31
10.0	.43	.35	.30	.42	.35	.30	.41	.35	.30	.40	.34	.30	.39	.34	.30	.28



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:

WEC AND CCEC

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	.250	.142	.045	.244	.139	.044	.231	.132	.042	.219	.126	.040	.208	.120	.039	
2.0	.246	.135	.041	.240	.132	.041	.229	.127	.039	.218	.122	.038	.209	.118	.037	
3.0	.235	.125	.037	.230	.123	.037	.220	.119	.036	.211	.116	.035	.202	.112	.035	
4.0	.223	.116	.034	.218	.114	.034	.209	.111	.033	.201	.108	.033	.194	.105	.032	
5.0	.210	.107	.031	.206	.106	.031	.198	.103	.030	.191	.101	.030	.184	.098	.030	
6.0	.198	.099	.028	.194	.098	.028	.187	.096	.028	.181	.094	.028	.175	.092	.027	
7.0	.187	.092	.026	.183	.091	.026	.177	.090	.026	.171	.088	.026	.166	.086	.025	
8.0	.176	.086	.024	.173	.085	.024	.168	.084	.024	.162	.082	.024	.157	.081	.024	
9.0	.166	.080	.022	.164	.080	.022	.159	.078	.022	.154	.077	.022	.149	.076	.022	
10.0	.157	.075	.021	.155	.075	.021	.150	.074	.021	.146	.073	.021	.142	.071	.020	

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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020	
1.0	.176	.157	.139	.151	.134	.120	.103	.093	.083	.059	.054	.048	.019	.017	.016	
2.0	.166	.132	.104	.142	.114	.090	.098	.079	.062	.056	.046	.037	.018	.015	.012	
3.0	.158	.114	.079	.135	.098	.069	.093	.068	.048	.054	.040	.028	.017	.013	.009	
4.0	.150	.100	.062	.129	.087	.054	.089	.060	.038	.051	.035	.023	.017	.012	.007	
5.0	.143	.090	.050	.123	.078	.044	.085	.054	.031	.049	.032	.018	.016	.010	.006	
6.0	.137	.081	.041	.118	.070	.036	.081	.049	.025	.047	.029	.015	.015	.009	.005	
7.0	.131	.074	.035	.113	.064	.030	.078	.045	.022	.045	.027	.013	.015	.009	.004	
8.0	.125	.069	.030	.108	.060	.026	.074	.042	.019	.043	.025	.011	.014	.008	.004	
9.0	.119	.064	.026	.103	.055	.023	.071	.039	.016	.042	.023	.010	.013	.008	.003	
10.0	.114	.060	.023	.098	.052	.020	.068	.036	.014	.040	.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

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 γ 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	28.2	29.6	28.5	29.8	30.0	28.6	30.0	28.9	30.2	30.4
3H	28.1	29.4	28.4	29.6	29.9	28.5	29.8	28.8	30.0	30.2
4H	28.1	29.3	28.4	29.5	29.8	28.4	29.6	28.7	29.9	30.1
6H	28.1	29.2	28.4	29.4	29.7	28.4	29.5	28.7	29.7	30.0
8H	28.0	29.1	28.4	29.4	29.7	28.3	29.4	28.6	29.7	29.9
12H	28.0	29.0	28.3	29.3	29.6	28.3	29.3	28.6	29.6	29.9
4H 2H	28.3	29.5	28.6	29.7	29.9	28.6	29.8	28.9	30.1	30.3
3H	28.2	29.2	28.5	29.5	29.8	28.5	29.6	28.9	29.8	30.1
4H	28.2	29.1	28.6	29.4	29.8	28.5	29.4	28.8	29.7	30.1
6H	28.2	29.0	28.6	29.4	29.7	28.4	29.2	28.8	29.6	29.9
8H	28.2	28.9	28.6	29.3	29.7	28.4	29.1	28.8	29.5	29.9
12H	28.2	28.9	28.6	29.2	29.6	28.3	29.0	28.8	29.4	29.8
8H 4H	28.1	28.9	28.5	29.2	29.6	28.4	29.1	28.8	29.5	29.9
6H	28.2	28.8	28.6	29.2	29.6	28.4	29.0	28.8	29.4	29.8
8H	28.2	28.7	28.6	29.1	29.6	28.3	28.9	28.8	29.3	29.7
12H	28.2	28.6	28.6	29.1	29.5	28.3	28.7	28.8	29.2	29.7
12H 4H	28.1	28.8	28.5	29.1	29.5	28.4	29.0	28.8	29.4	29.8
6H	28.1	28.7	28.6	29.1	29.5	28.3	28.9	28.8	29.3	29.7
8H	28.1	28.6	28.6	29.0	29.5	28.3	28.8	28.8	29.2	29.7
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 0.4 / - 0.6					+ 0.6 / - 0.7				
1.5H	+ 1.1 / - 2.1					+ 1.3 / - 2.6				
2.0H	+ 1.9 / - 5.5					+ 2.1 / - 6.4				

CIE Pub.117, 2263 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 2.8)
 Area: 0.01 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:

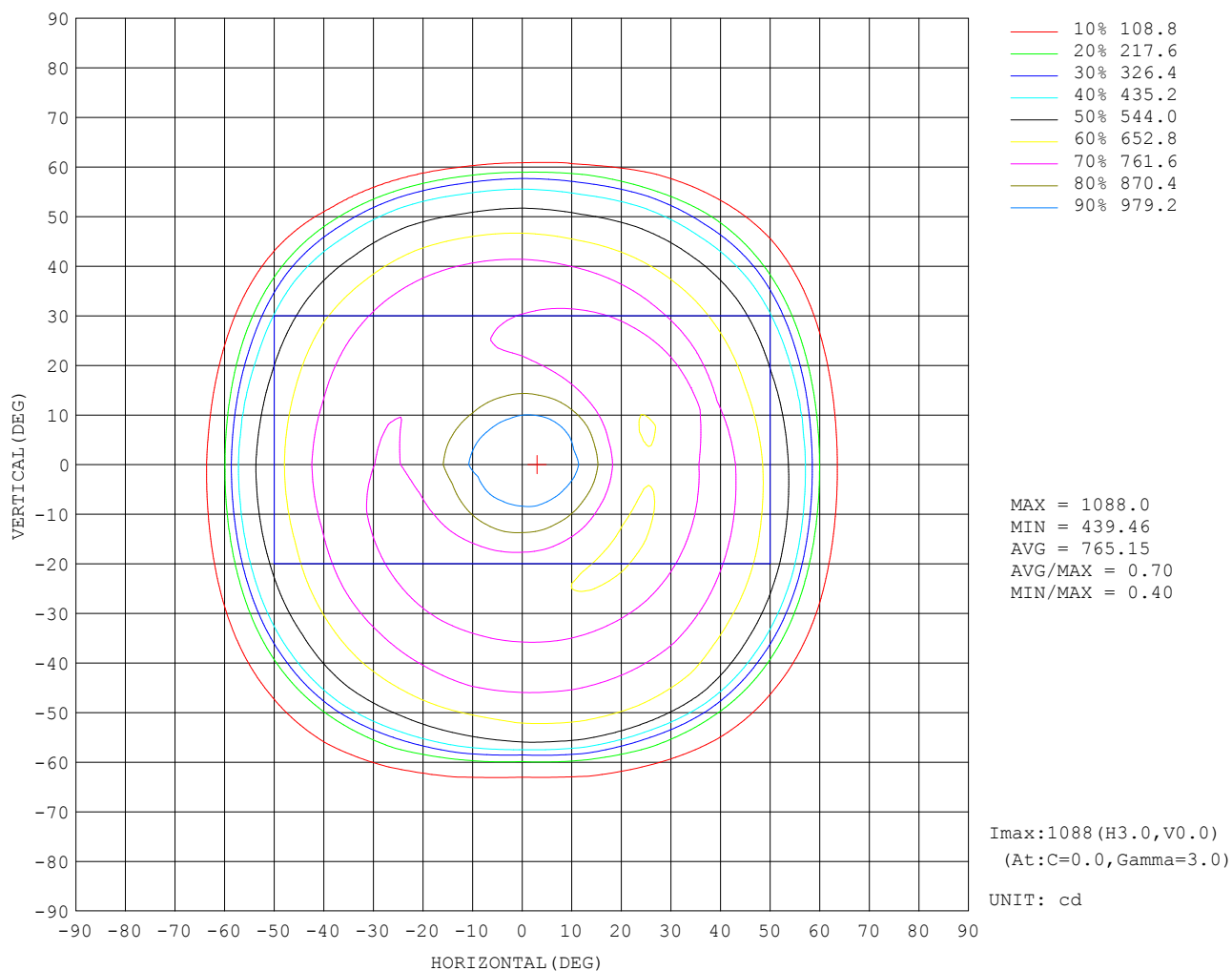
UTILIZATION FACTORS TABLE

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) $k(RI) \times RCR = 5$									
$k = 0.60$	59	48	41	59	48	41	58	47	41	35
0.80	71	60	53	70	60	53	68	59	53	46
1.00	81	71	64	80	70	64	78	71	64	57
1.25	88	79	73	87	79	73	84	77	72	65
1.50	93	85	79	92	84	78	89	82	77	71
2.00	100	93	87	98	91	86	95	89	85	78
2.50	103	96	91	101	95	90	97	92	88	81
3.00	106	100	95	103	98	94	100	95	92	84
4.00	109	104	100	106	102	98	102	99	96	87
5.00	110	106	103	108	104	101	104	101	98	89
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

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:

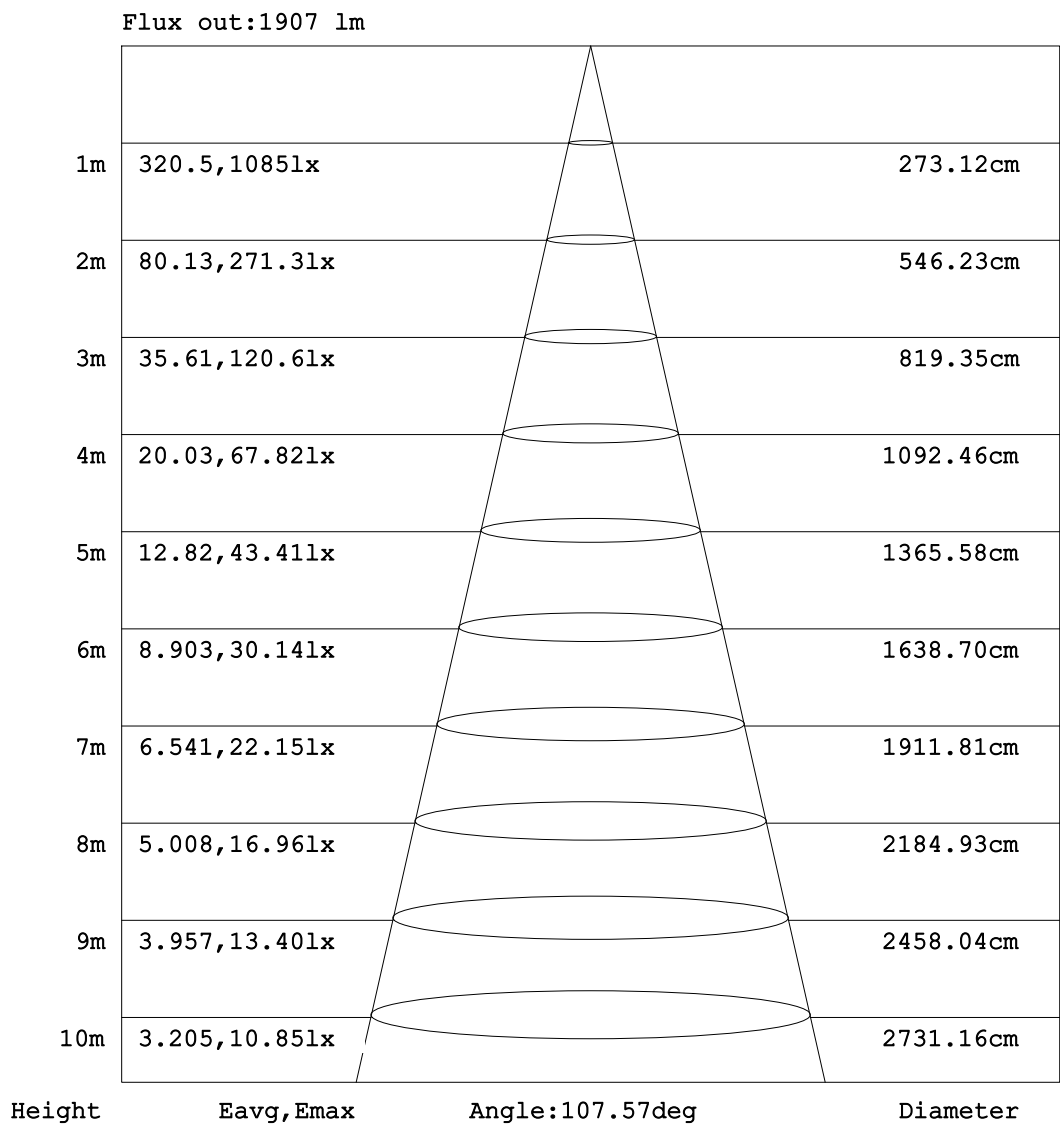
ISOCANDELA DIAGRAM



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

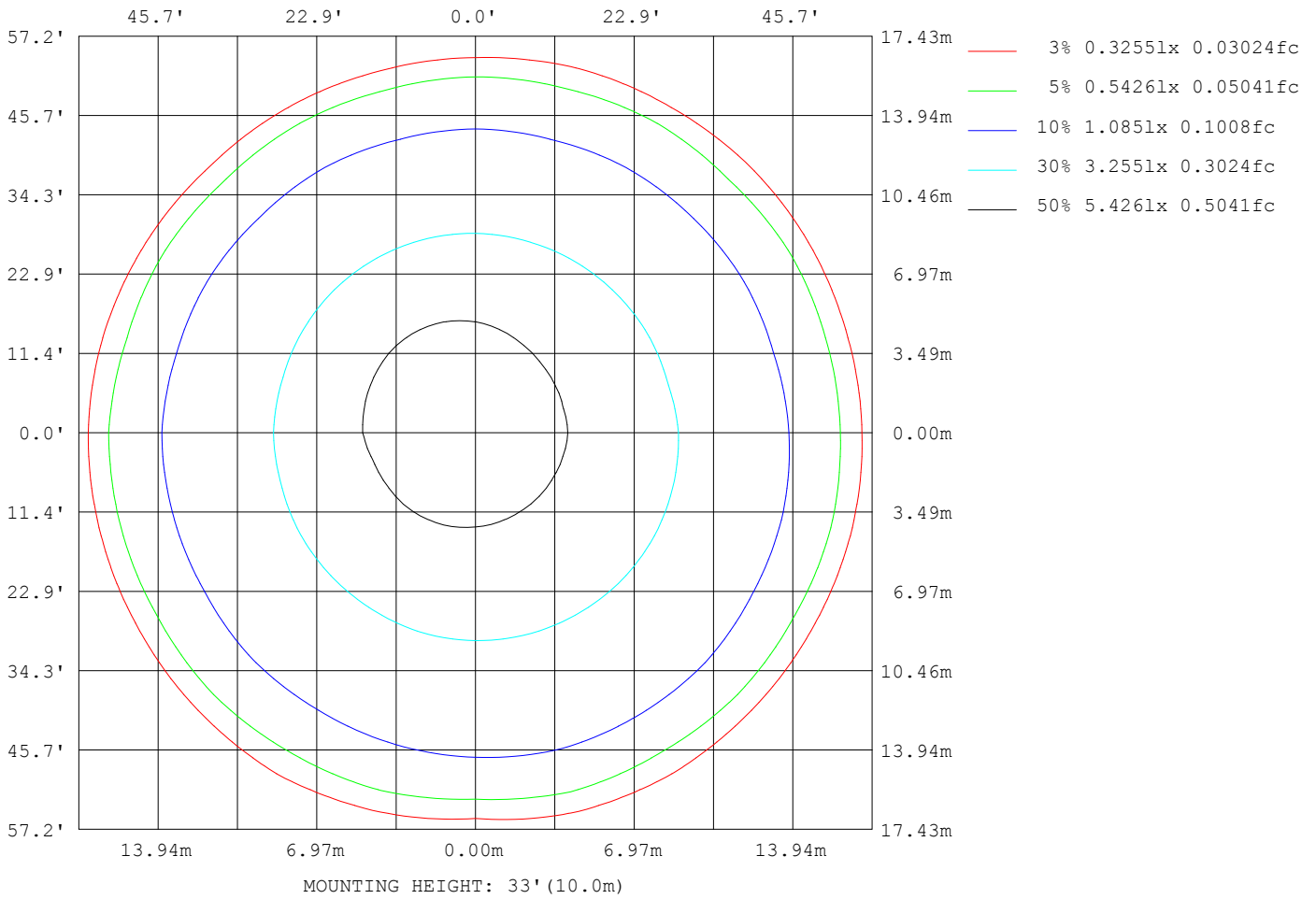


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:

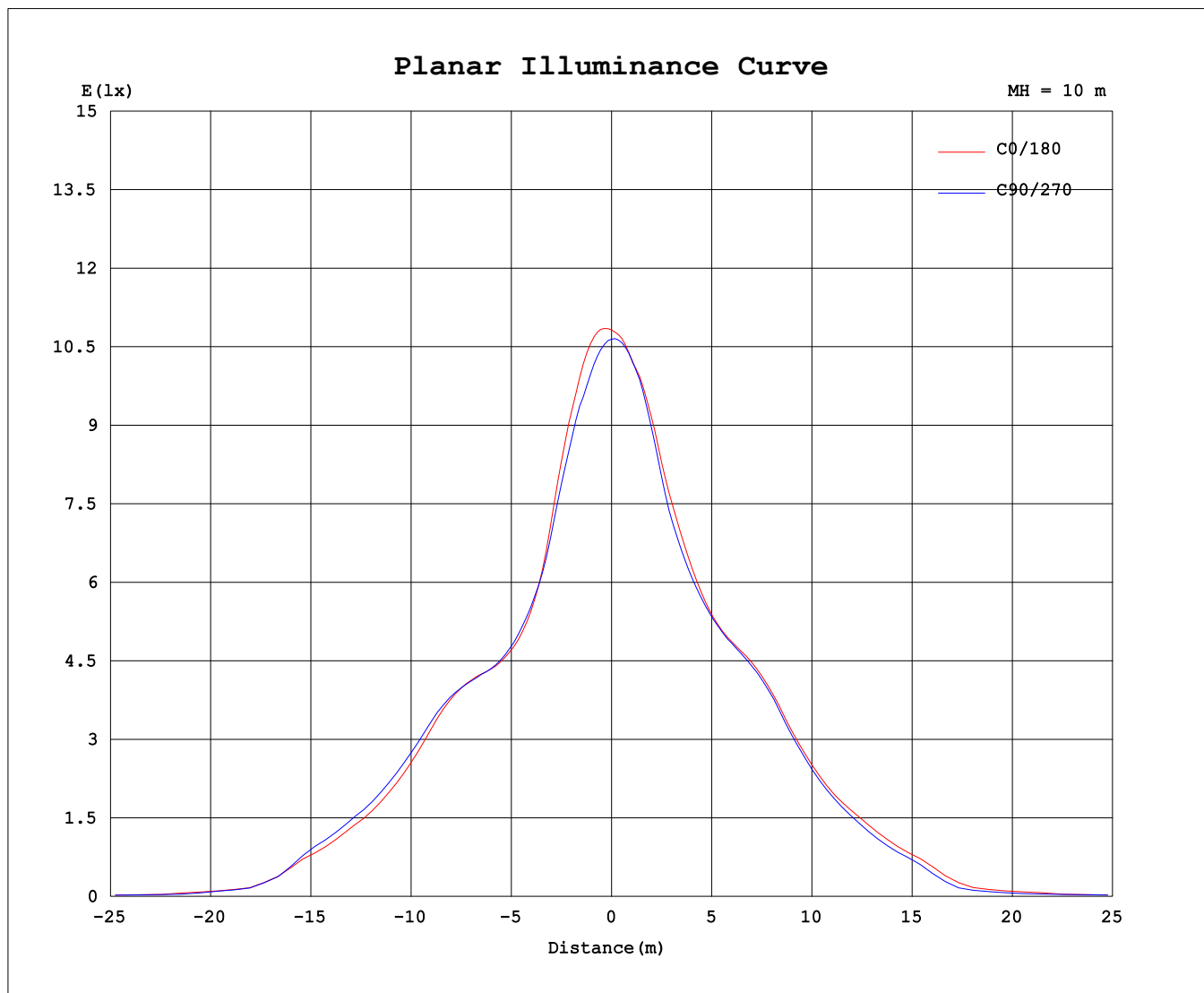
ISOLUX DIAGRAM



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	1082	1078	1074	1071	1069	1066	1065	1063	1061	1060	1059	1058	1082	1078	1074	1071	1069	1066	1065
5	1081	1069	1057	1048	1039	1033	1028	1026	1024	1025	1023	1023	1050	1046	1044	1042	1043	1044	1049
10	1008	991	976	969	962	959	955	956	956	960	963	967	993	986	980	972	971	971	978
15	880	865	849	844	838	838	838	843	844	849	853	861	888	880	869	858	855	853	853
20	715	705	697	699	700	707	716	729	741	753	765	780	809	807	802	795	794	788	778
25	658	650	644	646	651	661	672	682	695	707	714	728	759	764	767	769	769	763	748
30	678	670	663	660	663	672	682	693	701	713	724	736	763	772	781	788	786	777	759
35	751	743	739	736	737	741	749	757	761	770	780	789	813	811	814	817	817	813	801
40	797	801	805	807	809	812	814	809	804	803	802	796	806	793	796	797	796	792	788
45	724	743	760	776	779	780	777	771	751	735	723	708	712	706	707	704	701	692	688
50	621	646	662	685	697	699	686	676	658	644	626	617	625	617	613	599	600	586	586
55	503	531	546	574	581	590	572	555	537	530	508	505	507	478	471	454	455	446	450
60	215	222	231	240	257	246	211	240	264	248	233	220	212	202	174	147	145	132	132
65	88.1	92.3	90.2	94.6	93.9	86.7	58.9	80.4	100	103	97.8	97.1	95.7	83.0	75.6	64.8	64.4	63.3	63.5
70	49.5	48.4	48.6	47.6	47.7	46.2	46.0	45.6	46.6	46.0	46.5	46.6	50.1	50.9	50.4	50.9	50.5	50.6	50.0
75	38.1	37.2	37.1	36.3	34.3	27.9	25.8	26.8	32.4	35.1	35.7	35.8	38.2	38.7	38.8	39.4	38.2	33.0	30.6
80	22.0	21.8	20.9	18.1	14.7	14.2	14.0	14.0	14.1	16.8	20.6	22.0	23.5	24.1	24.1	22.1	18.8	18.3	17.9
85	8.59	8.52	6.37	3.86	2.48	1.78	1.57	1.81	2.53	3.82	6.19	8.93	10.3	10.5	8.52	5.51	3.38	2.26	1.91
90	0.61	0.61	0.58	0.55	0.52	0.50	0.50	0.50	0.52	0.56	0.60	0.64	0.65	0.67	0.67	0.65	0.60	0.58	0.56

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	1063	1061	1060	1059	1058														
5	1054	1061	1066	1067	1064														
10	985	995	999	999	996														
15	853	860	867	877	874														
20	762	745	729	720	711														
25	725	700	677	661	650														
30	739	718	698	681	670														
35	786	771	759	745	735														
40	780	776	772	773	770														
45	682	682	682	686	696														
50	573	580	579	586	592														
55	444	455	456	472	478														
60	174	169	195	192	205														
65	63.6	78.0	81.0	88.3	87.1														
70	50.6	50.3	50.6	49.9	50.1														
75	31.9	36.4	38.9	38.2	38.2														
80	17.9	18.0	19.9	22.1	22.3														
85	2.16	3.09	4.68	6.74	8.48														
90	0.56	0.59	0.62	0.64	0.63														

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: