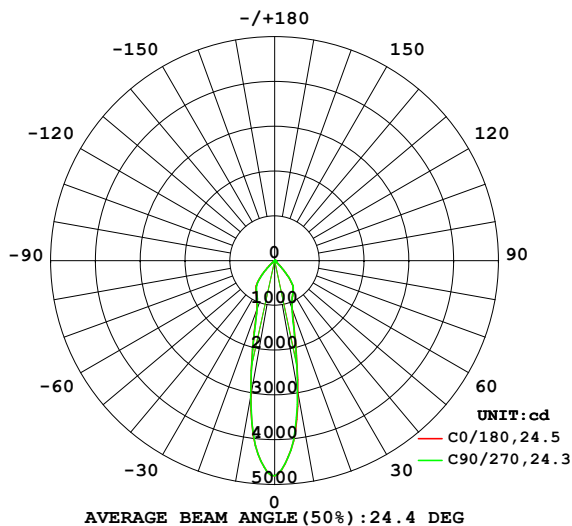


LUMINAIRE PHOTOMETRIC TEST REPORT

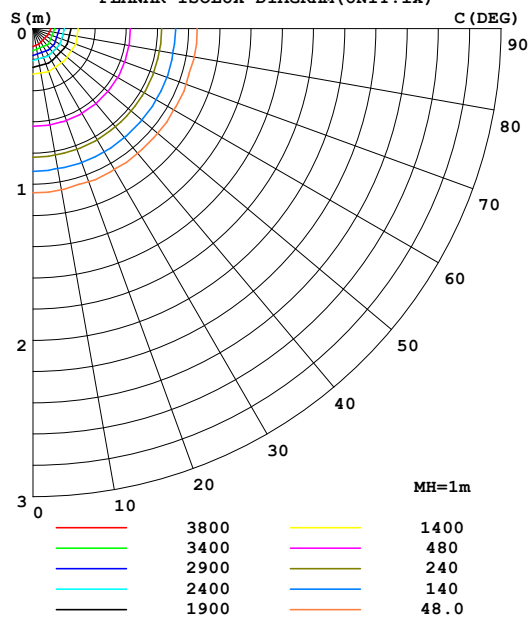
Test:U:240.4V I:0.0767A P:17.9W PF:0.9711 Freq:49.99Hz		
UTHDi:0.18% ITHDi:17.68% KDisp:0.9861		Lamp Flux:1969.62x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 25D	18WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 110.02 lm/W
MODEL		I _{max} (cd)	4806	S/MH(C0/180)	0.42	
NOMINAL POWER(W)	18	LOR(%)	100.0	S/MH(C90/270)	0.42	
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1969.6	η UP,DN(C0-180)	0.0,49.5	
NOMINAL FLUX(lm)	1969.62	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.5	
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.50	
TEST VOLTAGE(V)	240.38	η down (%)	100.0	CIBSE SHR MAX	0.50	

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



PLANAR ISOLUX DIAGRAM(UNIT:lx)



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [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	3000	2960	2959	3030	3081	3111	3086	3034	0- 10	369.0	369.0	18.7,18.7
20	1156	1158	1138	1153	1184	1177	1160	1146	10- 20	507.9	876.9	44.5,44.5
30	825.8	829.0	822.0	825.6	826.8	819.3	812.8	812.2	20- 30	436.4	1313	66.7,66.7
40	490.0	485.8	491.3	514.0	527.8	533.7	524.1	504.1	30- 40	437.8	1751	88.9,88.9
50	42.40	42.63	43.46	39.94	40.51	45.72	44.87	42.40	40- 50	178.7	1930	98,98
60	11.37	11.38	11.60	11.24	10.99	11.17	11.05	11.23	50- 60	19.73	1950	99,99
70	7.607	7.711	7.772	7.624	7.182	6.953	7.168	7.322	60- 70	8.684	1958	99.4,99.4
80	7.725	7.437	7.402	7.650	7.839	7.059	7.117	7.545	70- 80	7.455	1966	99.8,99.8
90	0.0760	0.0587	0.0772	0.0625	0.0651	0.0645	0.0739	0.0628	80- 90	3.900	1970	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): 1884.2 lm

%lum = 95.7%

%lamp = 95.7%

Conical surface Flux(120deg): 1949.6 lm

%lum = 99.0%

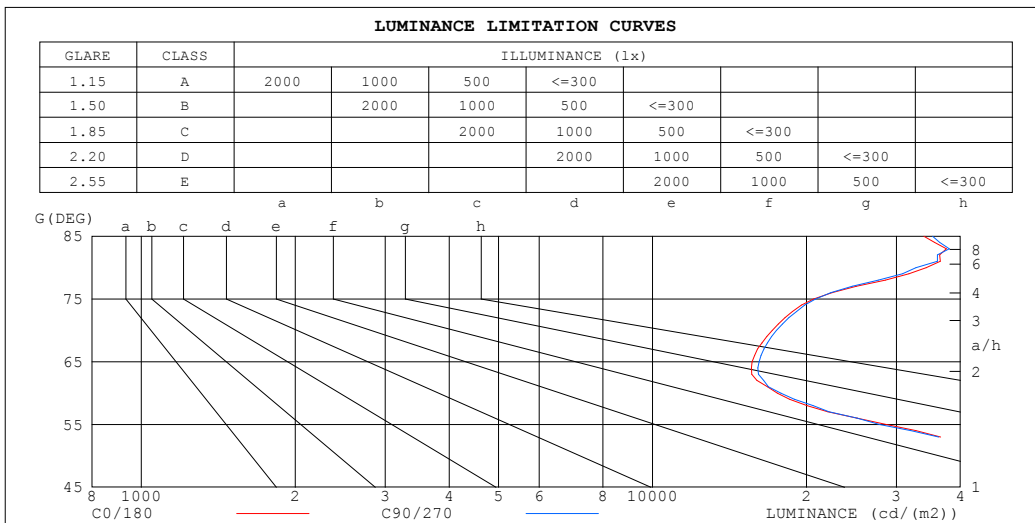
%lamp = 99.0%

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2024-10-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
 Humidity:65.0%
 Test Distance:3.090m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:240.4V I:0.0767A P:17.9W PF:0.9711 Freq:49.99Hz			Lamp Flux:1969.62x1 lm		
UTHDi:0.18% ITHDi:17.68% KDisp:0.9861					
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 25D			18WTYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.: Norming lighting			SUR.: 41mm		Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	33972	35330
80	34299	32771
75	20659	20825
70	17146	17470
65	15665	16159
60	17536	17835
55	28691	27851
50	50855	51975
45	221083	220083

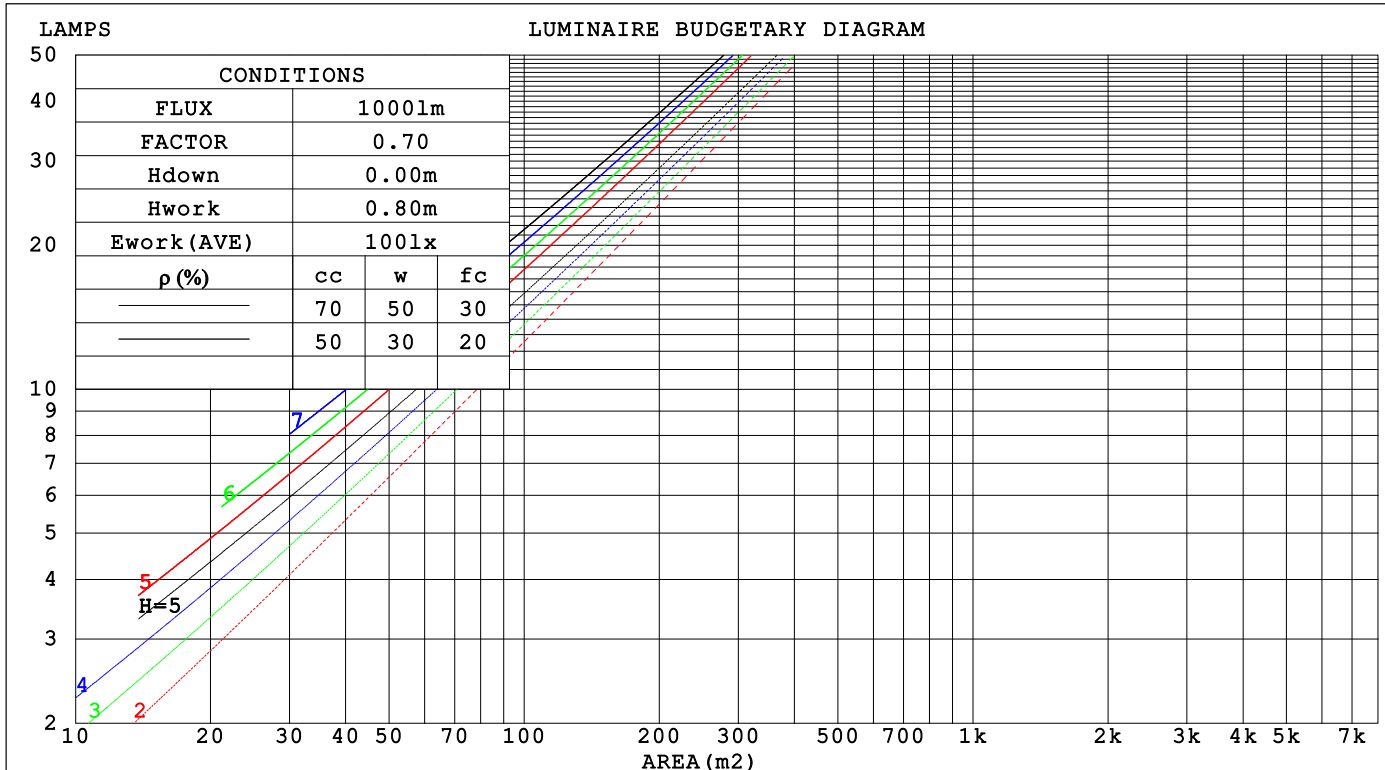
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:240.4V I:0.0767A P:17.9W PF:0.9711 Freq:49.99Hz		
UTHDi:0.18% ITHDi:17.68% KDisp:0.9861		Lamp Flux:1969.62x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 25D	18WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

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															



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:240.4V I:0.0767A P:17.9W PF:0.9711 Freq:49.99Hz			UTHDi:0.18% ITHDi:17.68% KDisp:0.9861			Lamp Flux:1969.62x1 lm		
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 25D			18WTYPE:			WEIGHT:		
SPEC.:			DIM.:			SERIAL No.:		
MFR.: Norming lighting			SUR.: 41mm			Shielding Angle:		

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	.177	.101	.032	.171	.097	.031	.158	.091	.029	.147	.085	.027	.136	.079	.025		
2.0	.169	.093	.028	.164	.090	.028	.153	.085	.026	.143	.080	.025	.134	.076	.024		
3.0	.161	.086	.026	.156	.083	.025	.147	.080	.024	.139	.076	.023	.131	.072	.022		
4.0	.153	.079	.023	.148	.078	.023	.141	.075	.022	.133	.072	.022	.127	.069	.021		
5.0	.145	.074	.021	.141	.073	.021	.135	.070	.021	.128	.068	.020	.122	.065	.020		
6.0	.138	.069	.020	.135	.068	.020	.129	.066	.019	.123	.064	.019	.118	.062	.018		
7.0	.132	.065	.018	.129	.064	.018	.124	.062	.018	.119	.061	.018	.114	.059	.017		
8.0	.126	.061	.017	.123	.061	.017	.118	.059	.017	.114	.058	.017	.110	.056	.016		
9.0	.120	.058	.016	.118	.057	.016	.114	.056	.016	.110	.055	.016	.106	.054	.016		
10.0	.115	.055	.015	.113	.055	.015	.109	.053	.015	.106	.052	.015	.102	.051	.015		

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	.190	.190	.190	.163	.163	.163	.111	.111	.111	.064	.064	.064	.020	.020	.020		
1.0	.171	.157	.145	.146	.135	.125	.100	.093	.086	.058	.054	.050	.018	.017	.016		
2.0	.156	.133	.113	.134	.114	.098	.092	.079	.068	.053	.046	.040	.017	.015	.013		
3.0	.143	.114	.090	.123	.098	.078	.084	.068	.055	.049	.040	.032	.016	.013	.011		
4.0	.133	.099	.073	.114	.085	.063	.079	.060	.044	.045	.035	.026	.015	.011	.009		
5.0	.124	.087	.060	.107	.075	.052	.073	.053	.037	.043	.031	.022	.014	.010	.007		
6.0	.117	.078	.050	.100	.067	.044	.069	.047	.031	.040	.028	.018	.013	.009	.006		
7.0	.110	.070	.042	.095	.061	.037	.065	.043	.026	.038	.025	.016	.012	.008	.005		
8.0	.104	.064	.036	.090	.055	.032	.062	.039	.022	.036	.023	.013	.012	.008	.004		
9.0	.099	.059	.032	.085	.051	.028	.059	.036	.020	.034	.021	.012	.011	.007	.004		
10.0	.094	.054	.028	.081	.047	.024	.056	.033	.017	.033	.020	.010	.011	.006	.003		

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:240.4V I:0.0767A P:17.9W PF:0.9711 Freq:49.99Hz											
UTHDi:0.18% ITHDi:17.68% KDisp:0.9861					Lamp Flux:1969.62x1 lm						
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 25D					18WTYPE:			WEIGHT:			
SPEC.:					DIM.:			SERIAL No.:			
MFR.: Norming lighting					SUR.: 41mm			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	27.0	28.0	27.3	28.1	28.3	27.0	28.0	27.2	28.1	28.3	
	3H	26.9	27.7	27.1	27.9	28.1	26.9	27.7	27.1	27.9	28.1
	4H	26.8	27.6	27.1	27.9	28.1	26.8	27.6	27.1	27.8	28.1
	6H	26.8	27.6	27.1	27.8	28.0	26.8	27.5	27.1	27.8	28.0
	8H	26.8	27.5	27.1	27.8	28.0	26.8	27.5	27.1	27.8	28.0
	12H	26.8	27.5	27.1	27.8	28.0	26.8	27.5	27.1	27.8	28.0
4H 2H	26.8	27.6	27.1	27.8	28.0	26.8	27.6	27.1	27.8	28.0	
	3H	26.6	27.3	27.0	27.6	27.9	26.6	27.3	27.0	27.6	27.9
	4H	26.6	27.2	26.9	27.5	27.8	26.6	27.2	26.9	27.5	27.8
	6H	26.6	27.2	27.0	27.5	27.9	26.6	27.2	27.0	27.5	27.8
	8H	26.6	27.2	27.0	27.5	27.9	26.6	27.2	27.0	27.5	27.9
	12H	26.7	27.1	27.1	27.5	27.9	26.7	27.1	27.1	27.5	27.9
8H 4H	26.5	27.0	26.9	27.4	27.7	26.5	27.0	26.9	27.3	27.7	
	6H	26.6	27.0	27.0	27.4	27.8	26.5	27.0	27.0	27.4	27.8
	8H	26.6	27.0	27.1	27.4	27.9	26.6	27.0	27.1	27.4	27.8
	12H	26.7	27.0	27.1	27.4	27.9	26.7	27.0	27.1	27.4	27.9
12H 4H	26.4	26.9	26.9	27.3	27.7	26.4	26.9	26.9	27.3	27.7	
	6H	26.5	26.9	27.0	27.3	27.8	26.5	26.9	27.0	27.3	27.8
	8H	26.6	26.9	27.1	27.4	27.9	26.6	26.9	27.1	27.4	27.8
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H		+ 2.5 / - 7.5				+ 2.6 / - 7.6					
1.5H		+ 4.8 / - 7.4				+ 4.8 / - 7.4					
2.0H		+ 6.4 / - 2.7				+ 6.4 / - 2.7					

CIE Pub.117, 1970 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 2.4$)
Area: 0.0013 m2

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:240.4V I:0.0767A P:17.9W PF:0.9711 Freq:49.99Hz		
UTHDi:0.18% ITHDi:17.68% KDisp:0.9861		Lamp Flux:1969.62x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 25D	18WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

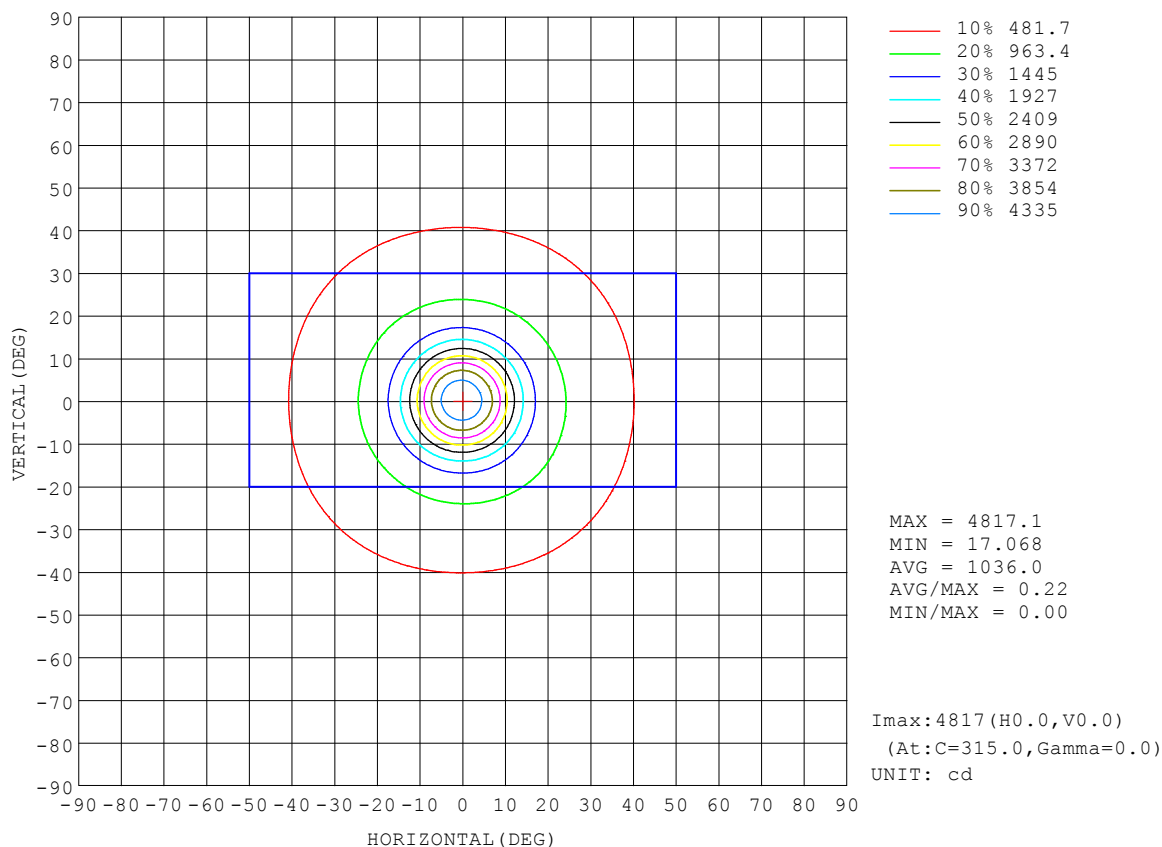
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	85	78	74	84	78	74	83	77	73	70
0.80	93	86	82	92	86	82	91	85	82	78
1.00	98	92	88	97	91	87	95	91	87	83
1.25	102	96	93	101	96	92	99	95	91	87
1.50	105	100	96	104	99	96	101	97	95	90
2.00	108	103	100	106	102	99	104	100	98	92
2.50	110	106	102	108	104	101	105	102	100	94
3.00	111	108	105	109	106	104	106	103	101	95
4.00	113	110	108	111	109	107	108	106	104	97
5.00	115	112	110	112	110	108	108	107	105	98
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

Test:U:240.4V I:0.0767A P:17.9W PF:0.9711 Freq:49.99Hz		
UTHDi:0.18% ITHDi:17.68% KDisp:0.9861 Lamp Flux:1969.62x1 lm		
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 25D	18WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

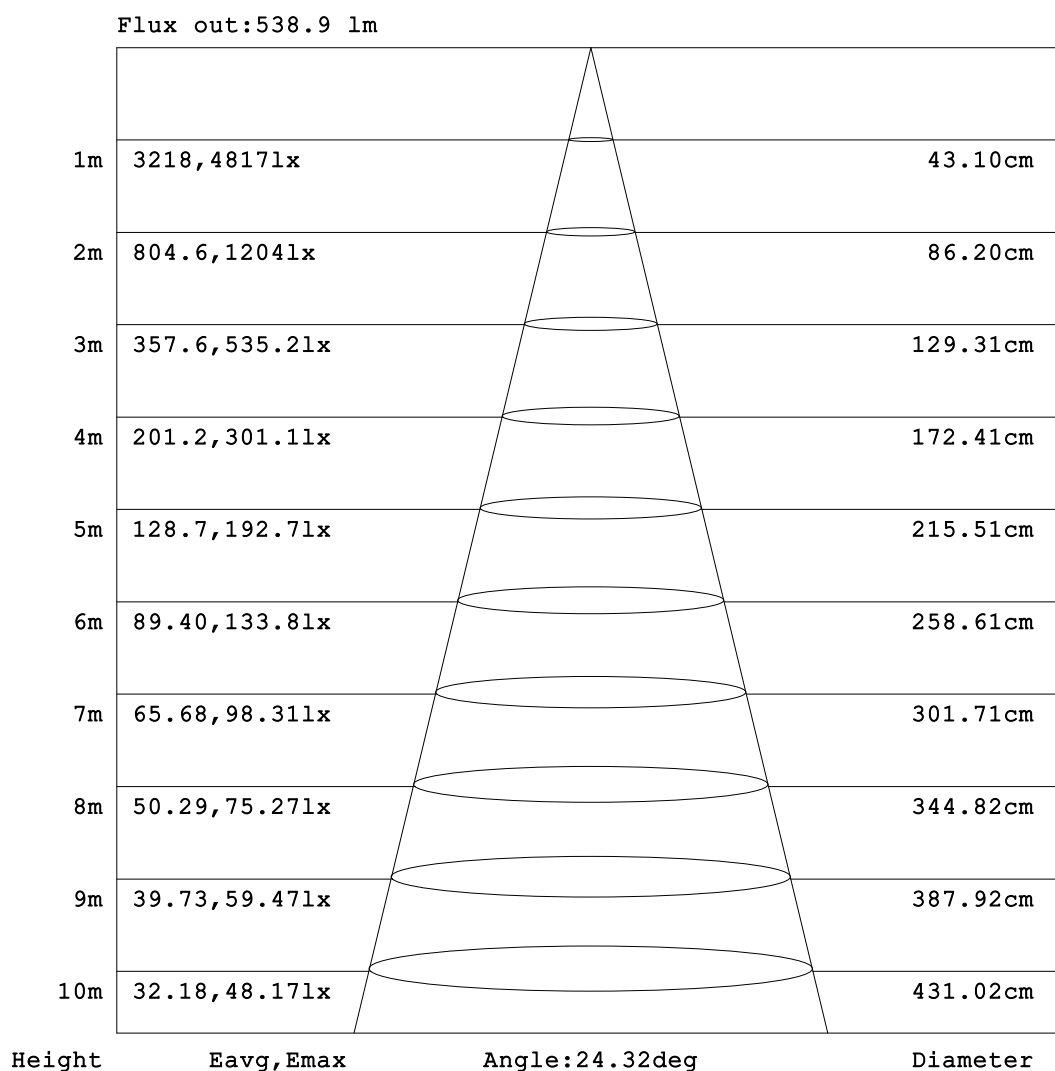


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

AAI Figure

Test:U:240.4V I:0.0767A P:17.9W PF:0.9711 Freq:49.99Hz		
UTHDi:0.18% ITHDi:17.68% KDisp:0.9861		Lamp Flux:1969.62x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 25D	18W TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



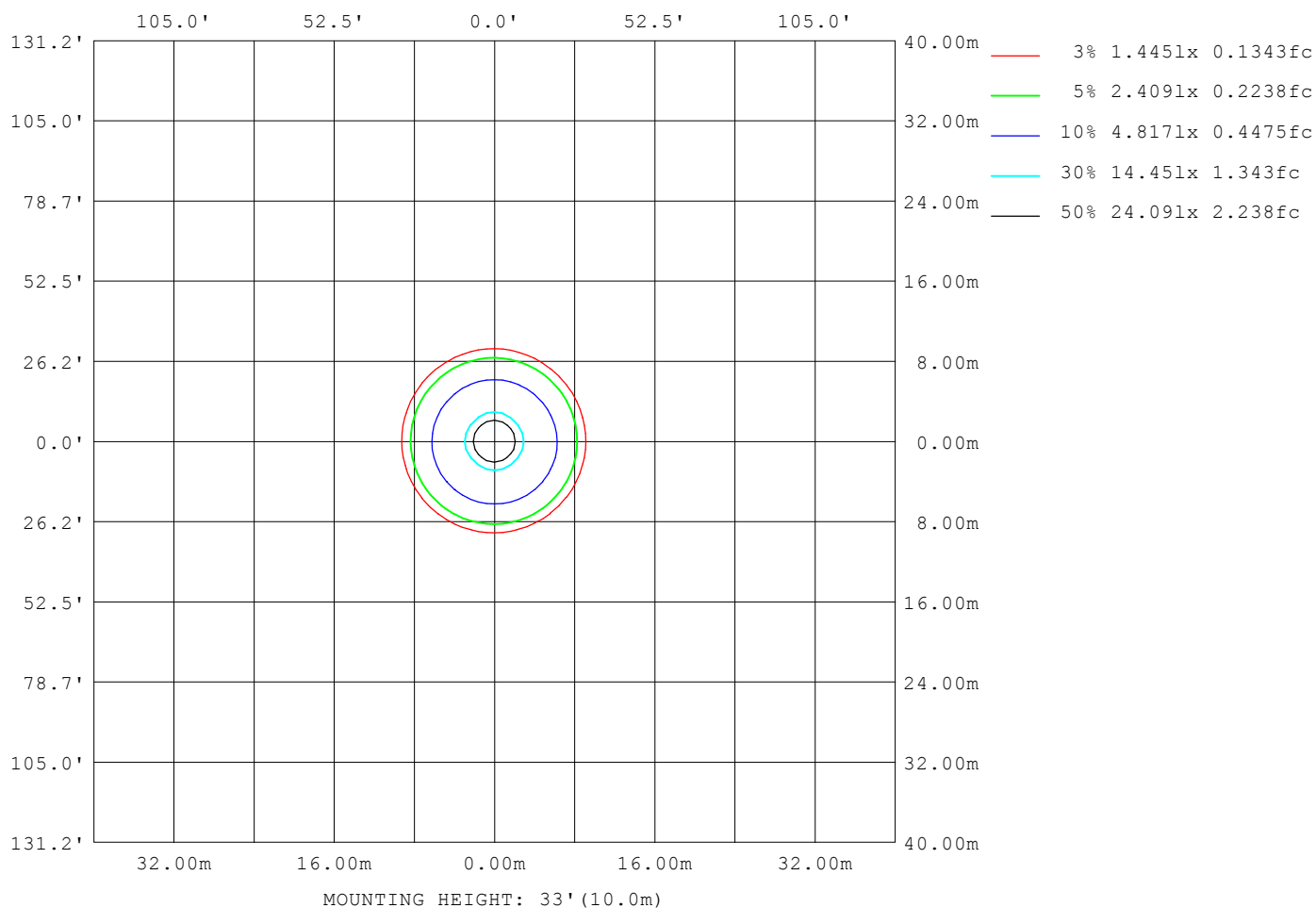
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:240.4V I:0.0767A P:17.9W PF:0.9711 Freq:49.99Hz		
UTHDi:0.18% ITHDi:17.68% KDisp:0.9861		Lamp Flux:1969.62x1 lm
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 25D	18WTYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:240.4V I:0.0767A P:17.9W PF:0.9711 Freq:49.99Hz		
UTHDi:0.18% ITHDi:17.68% KDisp:0.9861 Lamp Flux:1969.62x1 lm		
NAME: FUSION-MD23-AHD-018-COB-02SC 3000K RA90 25D 18W	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

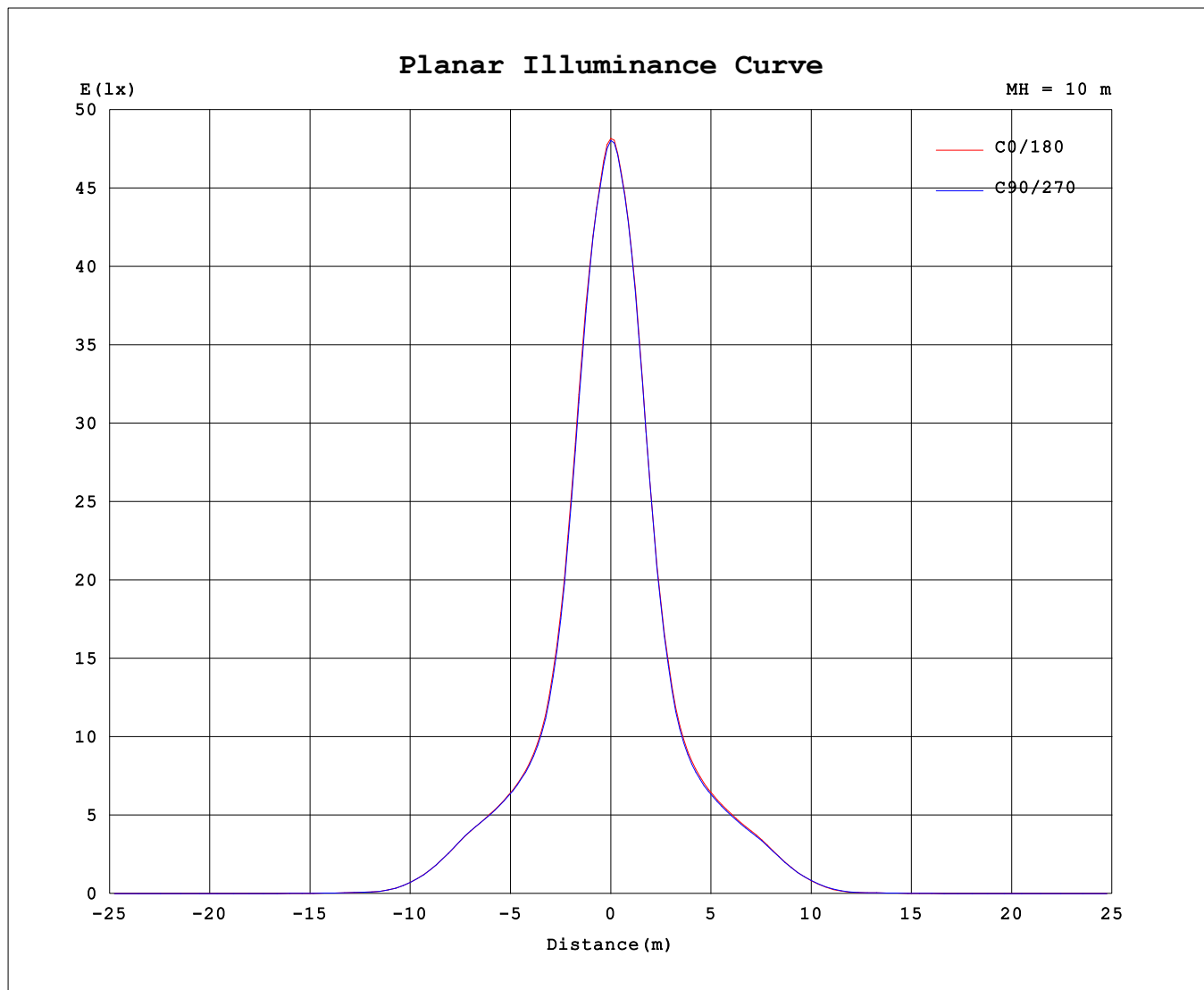
AvgL	cd/m2
L_0~180 (65) av	15410
L_0~180 (75) av	19874
L_0~180 (85) av	33385
L_90~270 (65) av	15682
L_90~270 (75) av	19718
L_90~270 (85) av	32845
L_45 (65) av	15525
L_45 (75) av	19581
L_45 (85) av	32954

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-10-17

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity: 65.0%
Test Distance: 3.090m [K=1.0000]
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks:

```

Photometric Data Table [cd]

G/C	0.0	45.0	90.0	135.0	180.0	225.0	270.0	315.0
0.0	4806	4806	4806	4806	4806	4806	4806	4806
3.0	4539	4532	4531	4567	4611	4626	4610	4563
6.0	4053	4031	4039	4112	4154	4178	4152	4087
9.0	3297	3253	3251	3327	3385	3411	3378	3327
12.0	2432	2394	2392	2455	2512	2526	2513	2462
15.0	1762	1743	1726	1784	1841	1835	1824	1779
18.0	1327	1320	1299	1331	1376	1368	1351	1325
21.0	1096	1098	1081	1090	1114	1108	1094	1082
24.0	967.3	973.2	963.1	962.0	976.5	969.2	958.3	954.9
27.0	887.8	892.5	883.7	882.6	891.6	884.7	875.5	872.7
30.0	825.8	829.0	822.0	825.6	826.8	819.3	812.8	812.2
33.0	768.2	771.9	767.5	774.5	768.1	760.8	753.9	755.0
36.0	692.7	692.1	696.4	711.6	705.4	699.5	691.7	690.3
39.0	548.0	544.5	550.5	572.9	583.1	585.4	576.9	560.9
42.0	370.2	365.9	370.9	391.2	408.9	416.8	408.1	385.4
45.0	202.8	200.8	202.4	221.5	236.1	242.2	238.8	217.7
48.0	82.32	74.50	83.51	81.57	90.71	100.5	98.76	90.28
51.0	37.35	37.20	37.86	34.06	33.00	34.82	33.92	34.70
54.0	24.96	24.48	24.48	23.05	22.39	23.32	22.61	23.08
57.0	15.53	15.32	15.68	15.21	14.83	15.41	15.21	15.38
60.0	11.37	11.38	11.60	11.24	10.99	11.17	11.05	11.23
63.0	9.207	9.324	9.510	9.273	8.969	8.923	8.972	9.086
66.0	8.353	8.492	8.630	8.463	8.084	7.931	8.085	8.196
69.0	7.774	7.892	7.967	7.830	7.391	7.182	7.395	7.511
72.0	7.280	7.346	7.427	7.259	6.783	6.520	6.726	6.955
75.0	6.935	6.930	7.011	6.857	6.439	5.974	6.258	6.592
78.0	7.688	7.535	7.469	7.459	7.541	6.675	6.969	7.473
81.0	7.419	7.133	7.343	7.407	7.579	6.909	7.009	7.300
84.0	4.829	4.767	4.954	4.983	4.905	4.548	4.521	4.893
87.0	1.224	1.185	1.279	1.321	1.301	1.208	1.300	1.241
90.0	0.0760	0.0587	0.0772	0.0625	0.0651	0.0645	0.0739	0.0628

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-10-17

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-SPEX500_V1 SYSTEM V2.00.453
Humidity:65.0%
Test Distance:3.090m [K=1.0000]
Remarks: