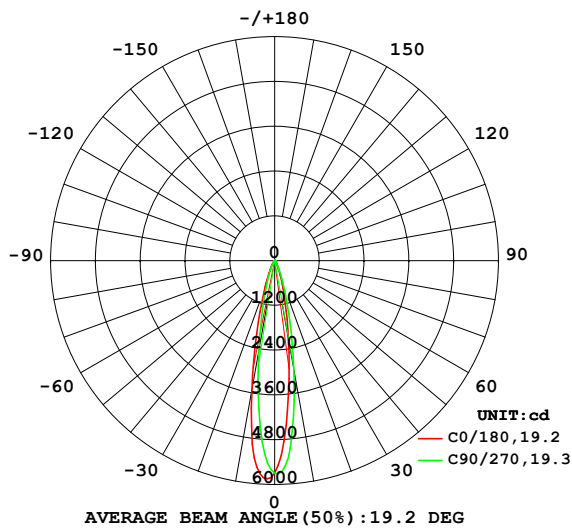


LUMINAIRE PHOTOMETRIC TEST REPORT

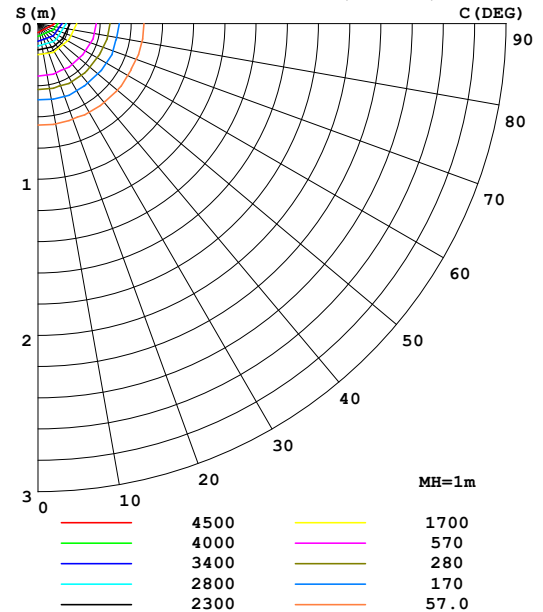
Test:U:240.4V I:0.0537A P:12.2W PF:0.9494 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.10% KDisp:0.9653 Lamp Flux:1022.1lx1 lm		
NAME: TR01-12-XX-01 4000K RA90 24D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 83.45 lm/W
MODEL		I _{max} (cd)	5852	S/MH(C0/180)	0.39	
NOMINAL POWER(W)	12	LOR(%)	100.0	S/MH(C90/270)	0.31	
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1022.1	η UP,DN(C0-180)	0.0,50.4	
NOMINAL FLUX(lm)	1022.11	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.6	
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.00	
TEST VOLTAGE(V)	240.31	η down(%)	100.0	CIBSE SHR MAX	0.30	

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:2024-08-07

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	2158	2467	2990	3525	3545	3028	2458	2132	0- 10	387.1	387.1	37.9,37.9
20	509.8	585.5	698.0	773.1	756.4	649.3	555.9	494.1	10- 20	384.6	771.6	75.5,75.5
30	134.0	151.2	166.2	176.6	175.0	155.8	139.7	128.3	20- 30	148.5	920.1	90,90
40	41.67	45.21	46.56	46.79	45.55	43.28	41.81	39.65	30- 40	52.63	972.7	95.2,95.2
50	22.30	22.81	22.66	21.70	21.09	20.45	21.43	21.29	40- 50	22.77	995.5	97.4,97.4
60	9.835	11.35	13.82	14.21	13.64	12.36	10.58	9.479	50- 60	15.55	1011	98.9,98.9
70	4.000	4.617	5.426	5.845	5.548	4.978	4.381	3.694	60- 70	7.614	1019	99.7,99.7
80	0.6720	0.9667	1.486	1.906	1.854	1.335	0.8995	0.6147	70- 80	3.046	1022	100,100
90	0.0339	0.0151	0.0384	0.0244	0.0231	0.0145	0.0306	0.0193	80- 90	0.3984	1022	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): 985.72 lm

%lum = 96.4%

%lamp = 96.4%

Conical surface Flux(120deg): 1011 lm

%lum = 98.9%

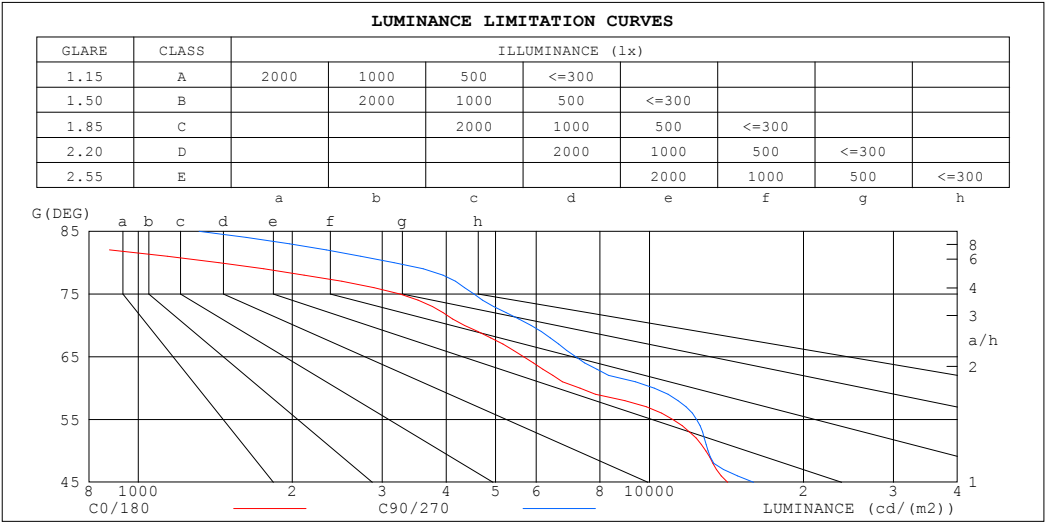
%lamp = 98.9%

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-07

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:0.0537A P:12.2W PF:0.9494 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.10% KDisp:0.9653 Lamp Flux:1022.11x1 lm		
NAME: TR01-12-XX-01 4000K RA90 24D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	336	1315
80	1438	3162
75	3252	4539
70	4346	5861
65	5670	7172
60	7310	10214
55	11108	12362
50	12893	13023
45	14223	15974

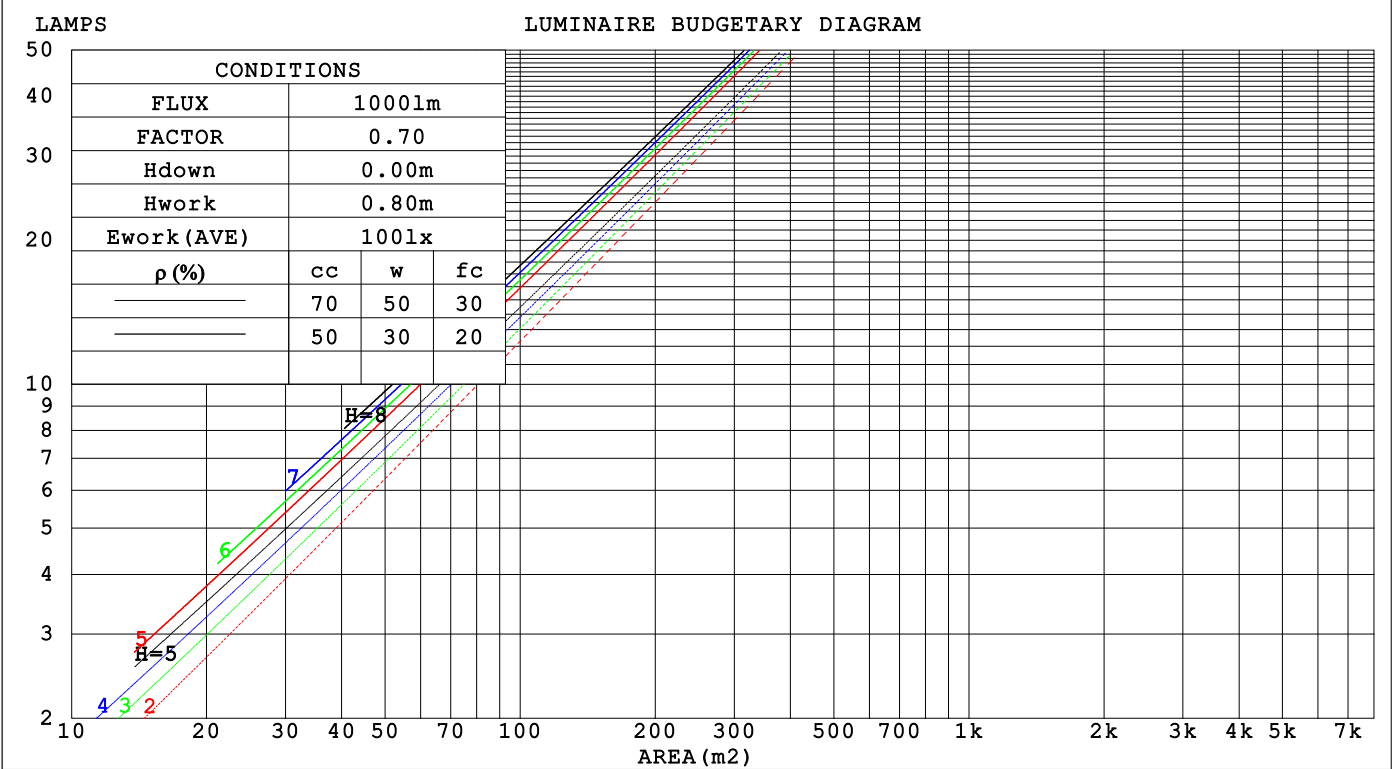
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-07

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:0.0537A P:12.2W PF:0.9494 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.10% KDisp:0.9653		
Lamp Flux:1022.1lx1 lm		
NAME: TR01-12-XX-01 4000K RA90 24D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	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:2024-08-07

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:0.0537A P:12.2W PF:0.9494 Freq:49.99Hz			UTHDi:0.17% ITHDi:18.10% KDisp:0.9653			Lamp Flux:1022.11x1 lm		
NAME: TR01-12-XX-01 4000K RA90 24D WHITE			TYPE:			WEIGHT:		
SPEC.:			DIM.:			SERIAL No.:		
MFR.: Norming lighting			SUR.: 57mm			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	.144	.082	.026	.137	.078	.025	.125	.071	.023	.113	.065	.021	.103	.060	.019															
2.0	.134	.073	.023	.128	.071	.022	.118	.066	.020	.109	.061	.019	.100	.057	.018															
3.0	.125	.066	.020	.120	.064	.019	.112	.061	.018	.104	.057	.017	.096	.053	.017															
4.0	.117	.061	.018	.113	.059	.017	.106	.056	.017	.099	.053	.016	.093	.050	.015															
5.0	.110	.056	.016	.107	.055	.016	.100	.052	.015	.095	.050	.015	.089	.048	.014															
6.0	.104	.052	.015	.101	.051	.015	.095	.049	.014	.090	.047	.014	.086	.045	.013															
7.0	.098	.049	.014	.096	.048	.014	.091	.046	.013	.087	.044	.013	.083	.043	.013															
8.0	.093	.046	.013	.091	.045	.013	.087	.043	.012	.083	.042	.012	.080	.041	.012															
9.0	.089	.043	.012	.087	.042	.012	.083	.041	.012	.080	.040	.011	.077	.039	.011															
10.0	.085	.041	.011	.083	.040	.011	.080	.039	.011	.077	.038	.011	.074	.037	.011															

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	.169	.158	.148	.144	.135	.127	.099	.093	.088	.057	.054	.051	.018	.017	.017	
2.0	.151	.133	.117	.129	.114	.101	.089	.079	.071	.051	.046	.041	.016	.015	.013	
3.0	.137	.113	.095	.117	.098	.082	.080	.068	.058	.046	.040	.034	.015	.013	.011	
4.0	.124	.098	.078	.107	.085	.068	.073	.059	.048	.042	.035	.028	.014	.011	.009	
5.0	.114	.086	.065	.098	.074	.057	.067	.052	.040	.039	.030	.024	.013	.010	.008	
6.0	.105	.076	.055	.090	.066	.048	.062	.046	.034	.036	.027	.020	.012	.009	.007	
7.0	.097	.068	.047	.084	.059	.041	.058	.041	.029	.034	.024	.017	.011	.008	.006	
8.0	.091	.061	.040	.078	.053	.035	.054	.037	.025	.031	.022	.015	.010	.007	.005	
9.0	.085	.055	.035	.073	.048	.031	.051	.034	.022	.030	.020	.013	.010	.007	.004	
10.0	.080	.051	.031	.069	.044	.027	.048	.031	.019	.028	.018	.011	.009	.006	.004	

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-07

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:0.0537A P:12.2W PF:0.9494 Freq:49.99Hz										
UTHDi:0.17% ITHDi:18.10% KDisp:0.9653					Lamp Flux:1022.11x1 lm					
NAME: TR01-12-XX-01 4000K RA90 24D WHITE					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.: Norming lighting					SUR.: 57mm			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	14.0	14.7	14.2	14.8	15.0	14.6	15.3	14.9	15.5	15.6
3H	14.3	14.9	14.5	15.1	15.3	15.0	15.6	15.2	15.8	16.0
4H	14.3	14.9	14.6	15.1	15.3	15.1	15.7	15.4	15.9	16.1
6H	14.3	14.9	14.6	15.1	15.3	15.1	15.7	15.4	15.9	16.2
8H	14.2	14.8	14.5	15.0	15.3	15.1	15.7	15.4	15.9	16.2
12H	14.2	14.7	14.5	15.0	15.3	15.1	15.6	15.4	15.9	16.1
4H 2H	14.2	14.8	14.4	15.0	15.2	14.7	15.4	15.0	15.6	15.8
3H	14.5	15.1	14.8	15.3	15.6	15.2	15.7	15.5	16.0	16.2
4H	14.6	15.1	14.9	15.4	15.7	15.3	15.8	15.7	16.1	16.4
6H	14.6	15.0	14.9	15.3	15.7	15.4	15.8	15.7	16.1	16.5
8H	14.5	14.9	14.9	15.3	15.6	15.4	15.8	15.7	16.1	16.5
12H	14.5	14.9	14.9	15.2	15.6	15.3	15.7	15.7	16.1	16.4
8H 4H	14.6	15.0	15.0	15.3	15.7	15.3	15.7	15.7	16.0	16.4
6H	14.6	14.9	15.0	15.3	15.7	15.3	15.7	15.8	16.1	16.5
8H	14.5	14.8	14.9	15.2	15.7	15.3	15.6	15.8	16.0	16.5
12H	14.4	14.7	14.9	15.1	15.6	15.3	15.5	15.7	16.0	16.4
12H 4H	14.5	14.9	14.9	15.3	15.7	15.2	15.6	15.6	16.0	16.3
6H	14.5	14.8	14.9	15.2	15.7	15.3	15.6	15.7	16.0	16.4
8H	14.5	14.7	14.9	15.2	15.6	15.3	15.5	15.7	16.0	16.4
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 0.9 / - 1.3					+ 1.3 / - 1.2				
1.5H	+ 1.3 / - 1.0					+ 2.1 / - 1.1				
2.0H	+ 1.3 / - 2.0					+ 1.0 / - 1.8				

CIE Pub.117, 1022 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 0.1$)
Area: 0.0027 m²

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-07

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:0.0537A P:12.2W PF:0.9494 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.10% KDisp:0.9653 Lamp Flux:1022.11x1 lm		
NAME: TR01-12-XX-01 4000K RA90 24D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	Shielding Angle:

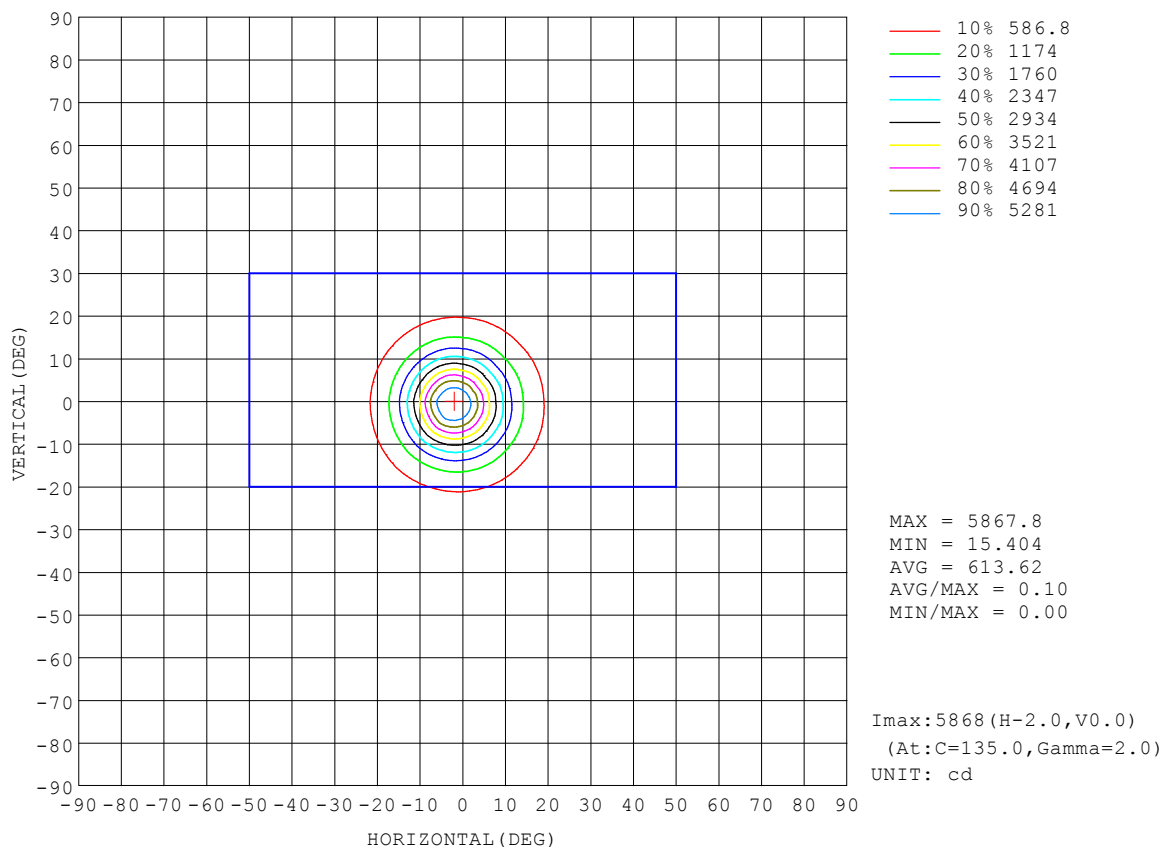
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	89	82	79	88	82	79	87	82	79	75
0.80	96	90	87	95	90	86	94	89	86	82
1.00	100	95	91	99	94	91	98	94	90	86
1.25	104	99	95	103	98	95	101	97	94	90
1.50	106	102	99	105	101	98	103	100	97	93
2.00	109	105	102	107	104	101	105	102	99	94
2.50	111	107	104	109	106	103	106	103	101	95
3.00	112	109	106	110	107	105	107	105	103	96
4.00	114	111	109	112	110	108	108	107	105	98
5.00	115	113	111	113	111	110	109	108	107	99
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: 2024-08-07

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:0.0537A P:12.2W PF:0.9494 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.10% KDisp:0.9653 Lamp Flux:1022.11x1 lm		
NAME: TR01-12-XX-01 4000K RA90 24D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	Shielding Angle:

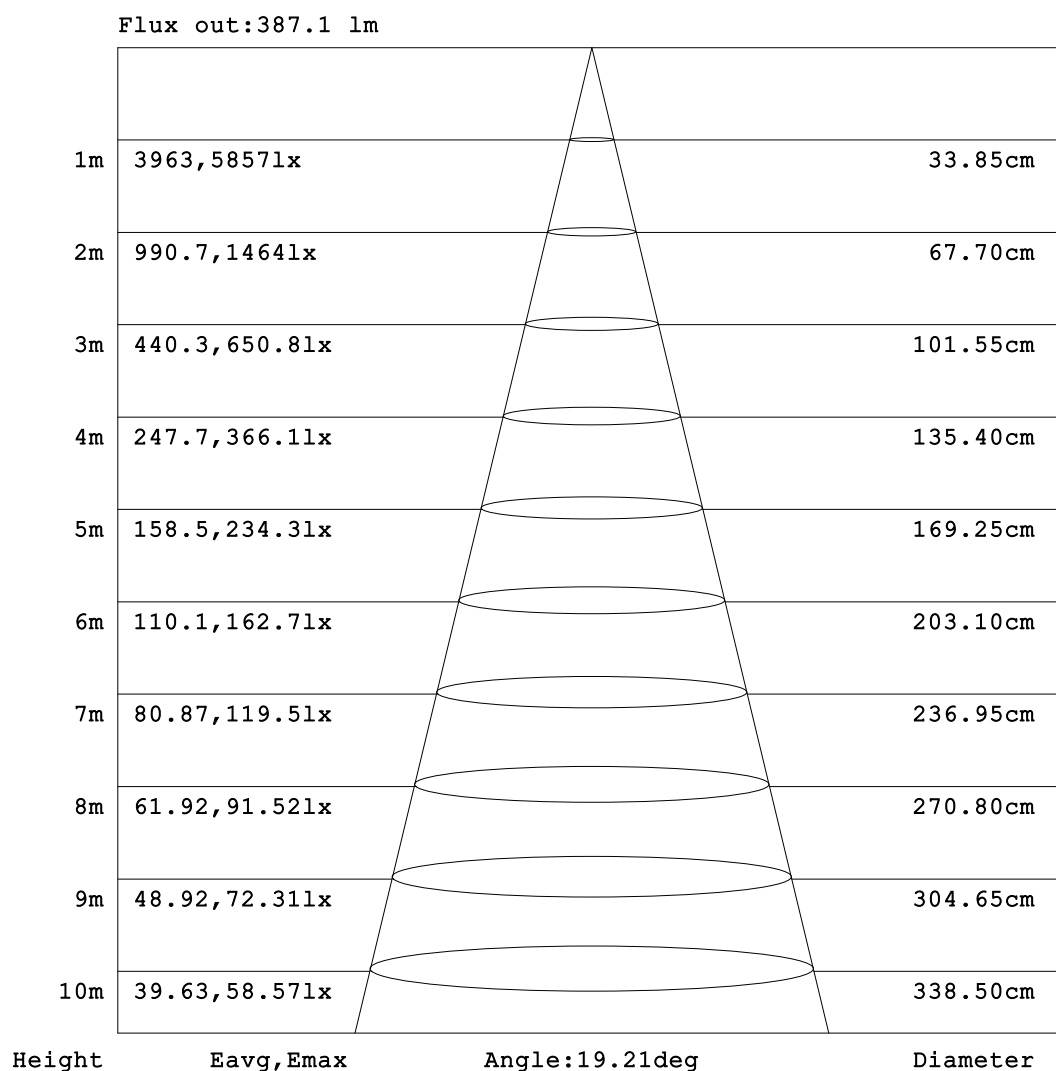


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-08-07

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:0.0537A P:12.2W PF:0.9494 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.10% KDisp:0.9653 Lamp Flux:1022.1lx1 lm		
NAME: TR01-12-XX-01 4000K RA90 24D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	Shielding Angle:



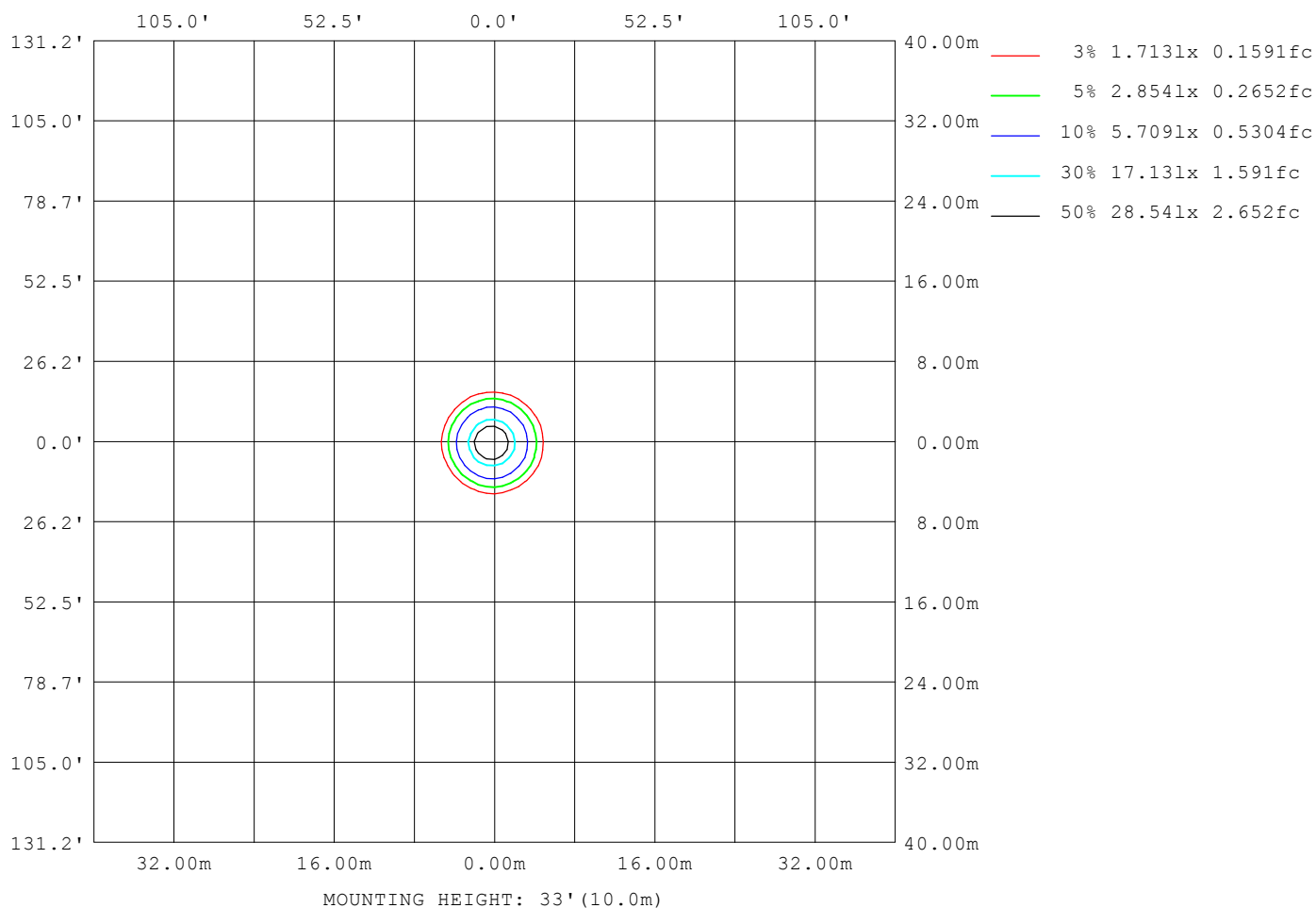
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-07

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:0.0537A P:12.2W PF:0.9494 Freq:49.99Hz UTHDi:0.17% ITHDi:18.10% KDisp:0.9653 Lamp Flux:1022.1lx 1m		
NAME: TR01-12-XX-01 4000K RA90 24D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-08-07

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:0.0537A P:12.2W PF:0.9494 Freq:49.99Hz UTHDi:0.17% ITHDi:18.10% KDisp:0.9653 Lamp Flux:1022.11x1 lm		
NAME: TR01-12-XX-01 4000K RA90 24D WHITE	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 57mm	Shielding Angle:

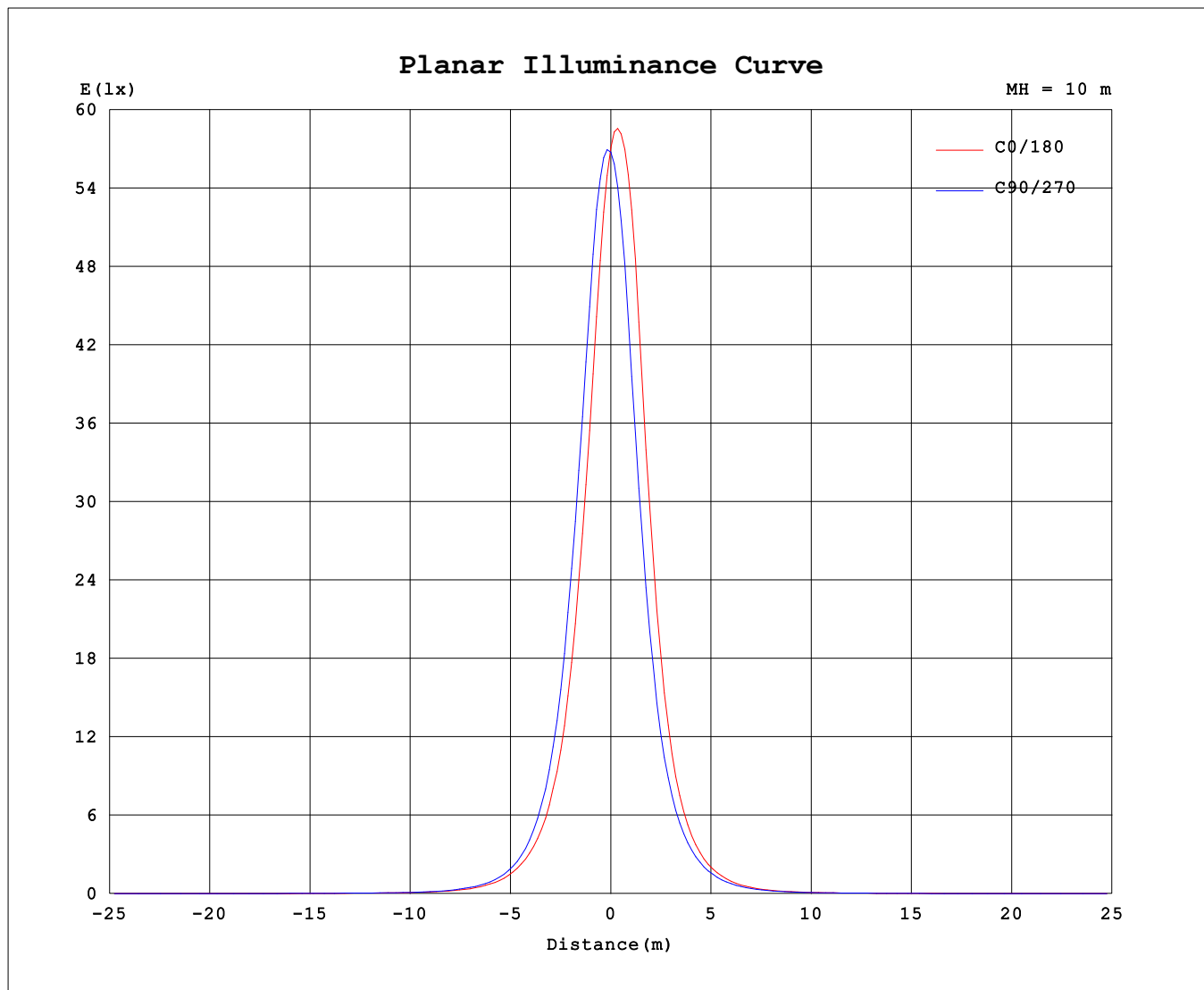
AvgL	cd/m2
L_0~180 (65) av	6447
L_0~180 (75) av	3975
L_0~180 (85) av	1134
L_90~270 (65) av	6619
L_90~270 (75) av	4142
L_90~270 (85) av	919
L_45 (65) av	6485
L_45 (75) av	4097
L_45 (85) av	943

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-07

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: 2024-08-07

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	5689	5689	5689	5689	5689	5689	5689	5689
3.0	4849	5114	5508	5827	5820	5573	5188	4879
6.0	3591	3939	4580	5233	5301	4765	4035	3592
9.0	2484	2810	3372	3958	4001	3435	2824	2451
12.0	1612	1882	2305	2720	2715	2278	1854	1589
15.0	1036	1198	1475	1733	1700	1423	1159	1011
18.0	671.8	779.0	935.2	1063	1040	894.6	743.0	653.3
21.0	444.9	508.3	602.9	663.8	646.8	561.4	482.0	429.8
24.0	299.0	338.0	386.7	421.8	412.1	362.9	318.3	288.6
27.0	199.3	226.4	252.4	271.1	267.8	239.7	212.0	192.2
30.0	134.0	151.2	166.2	176.6	175.0	155.8	139.7	128.3
33.0	91.42	103.2	111.7	115.2	114.3	104.1	93.90	88.43
36.0	62.29	71.22	78.77	79.24	77.32	71.48	64.07	59.70
39.0	45.77	49.80	51.81	54.33	51.95	48.27	45.96	43.06
42.0	35.76	37.93	38.54	37.46	37.22	35.62	35.54	33.53
45.0	27.06	28.87	30.57	29.44	28.96	27.53	26.22	25.75
48.0	23.96	24.23	24.21	23.68	22.95	21.75	22.76	22.95
51.0	21.39	22.07	21.99	21.04	20.43	19.84	20.71	20.53
54.0	18.31	19.43	19.97	19.19	18.55	17.92	18.36	17.54
57.0	14.45	15.99	17.38	16.92	16.37	15.54	15.18	13.90
60.0	9.835	11.35	13.82	14.21	13.64	12.36	10.58	9.479
63.0	7.552	8.437	9.699	10.32	9.760	8.735	8.084	7.351
66.0	5.933	6.691	7.575	7.980	7.682	6.998	6.371	5.720
69.0	4.451	5.131	5.957	6.358	6.058	5.462	4.855	4.176
72.0	3.282	3.692	4.382	4.855	4.550	4.050	3.566	2.945
75.0	2.265	2.667	3.180	3.647	3.291	3.027	2.609	2.110
78.0	1.181	1.624	2.219	2.711	2.437	2.050	1.510	1.124
81.0	0.4801	0.7149	1.152	1.528	1.489	1.034	0.6641	0.4297
84.0	0.1339	0.2224	0.4595	0.6660	0.6457	0.3843	0.2037	0.0988
87.0	0.0369	0.0381	0.1217	0.1844	0.1767	0.0790	0.0453	0.0151
90.0	0.0339	0.0151	0.0384	0.0244	0.0231	0.0145	0.0306	0.0193

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2024-08-07

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: