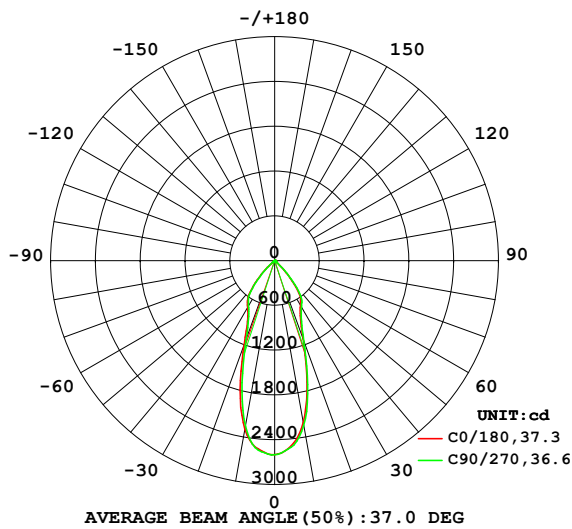


LUMINAIRE PHOTOMETRIC TEST REPORT

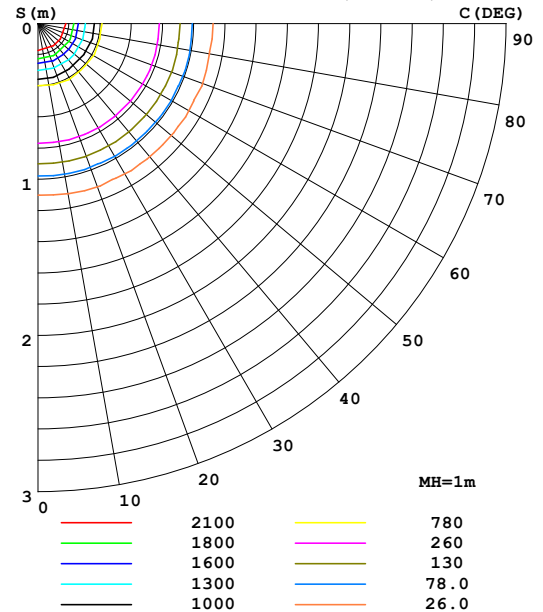
Test:U:240.4V I:0.0722A P:16.8W PF:0.9666 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.39% KDisp:0.9830 Lamp Flux:1680.59x1 lm		
NAME: MD18-18-XX-02 3500K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 100.10 lm/W
MODEL		I _{max} (cd)	2602	S/MH(C0/180)		0.63
NOMINAL POWER(W)	18	LOR(%)	100.0	S/MH(C90/270)		0.60
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	1680.6	η UP,DN(C0-180)		0.0,50.0
NOMINAL FLUX(lm)	1680.59	CIE CLASS	DIRECT	η UP,DN(C180-360)		0.0,50.0
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM		0.50
TEST VOLTAGE(V)	240.39	η down(%)	100.0	CIBSE SHR MAX		0.60

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:2024-09-06

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	2203	2232	2246	2280	2297	2284	2254	2209	0- 10	232.4	232.4	13.8,13.8
20	1117	1142	1149	1187	1197	1156	1119	1108	10- 20	468.0	700.4	41.7,41.7
30	697.2	710.7	721.8	726.6	727.0	716.9	704.1	697.8	20- 30	395.9	1096	65.2,65.2
40	406.5	422.4	429.6	451.1	449.7	439.5	430.3	416.0	30- 40	375.0	1471	87.5,87.5
50	40.03	47.48	47.76	54.56	53.62	49.17	44.87	39.68	40- 50	159.8	1631	97.1,97.1
60	17.41	17.93	17.32	17.69	18.07	16.76	16.31	16.40	50- 60	24.99	1656	98.5,98.5
70	8.965	9.228	8.883	9.281	9.184	8.542	8.039	8.280	60- 70	11.75	1668	99.2,99.2
80	6.726	7.429	7.497	8.105	8.036	7.242	6.459	6.520	70- 80	9.175	1677	99.8,99.8
90	0.0725	0.0581	0.0704	0.0570	0.0603	0.0623	0.0691	0.0664	80- 90	3.537	1681	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): 1586.4 lm

%lum = 94.4%

%lamp = 94.4%

Conical surface Flux(120deg): 1656.1 lm

%lum = 98.5%

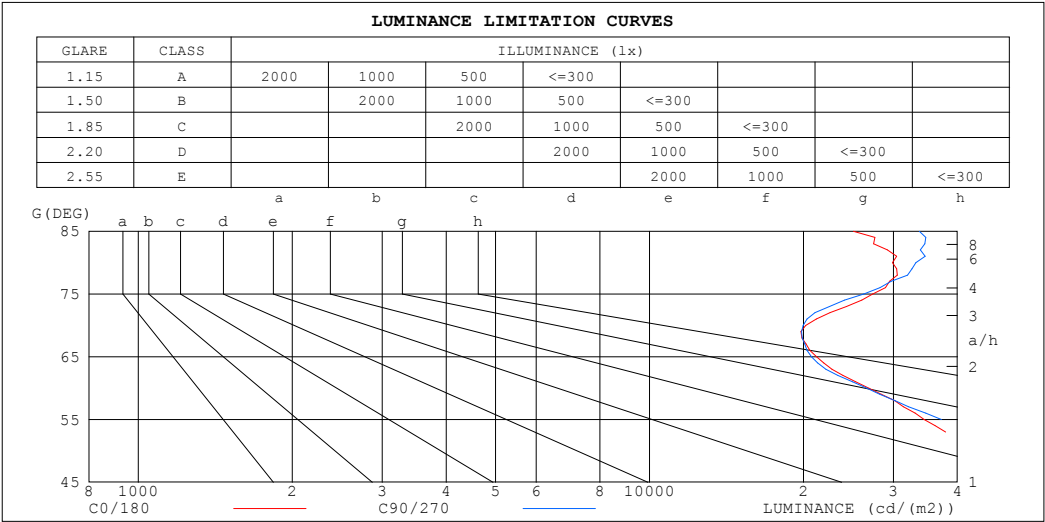
%lamp = 98.5%

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

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:0.0722A P:16.8W PF:0.9666 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.39% KDisp:0.9830 Lamp Flux:1680.59x1 lm		
NAME: MD18-18-XX-02 3500K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	25062	33730
80	29857	33194
75	27315	26226
70	20204	19969
65	21225	20736
60	26845	26635
55	34456	37224
50	48005	57122
45	196063	216711

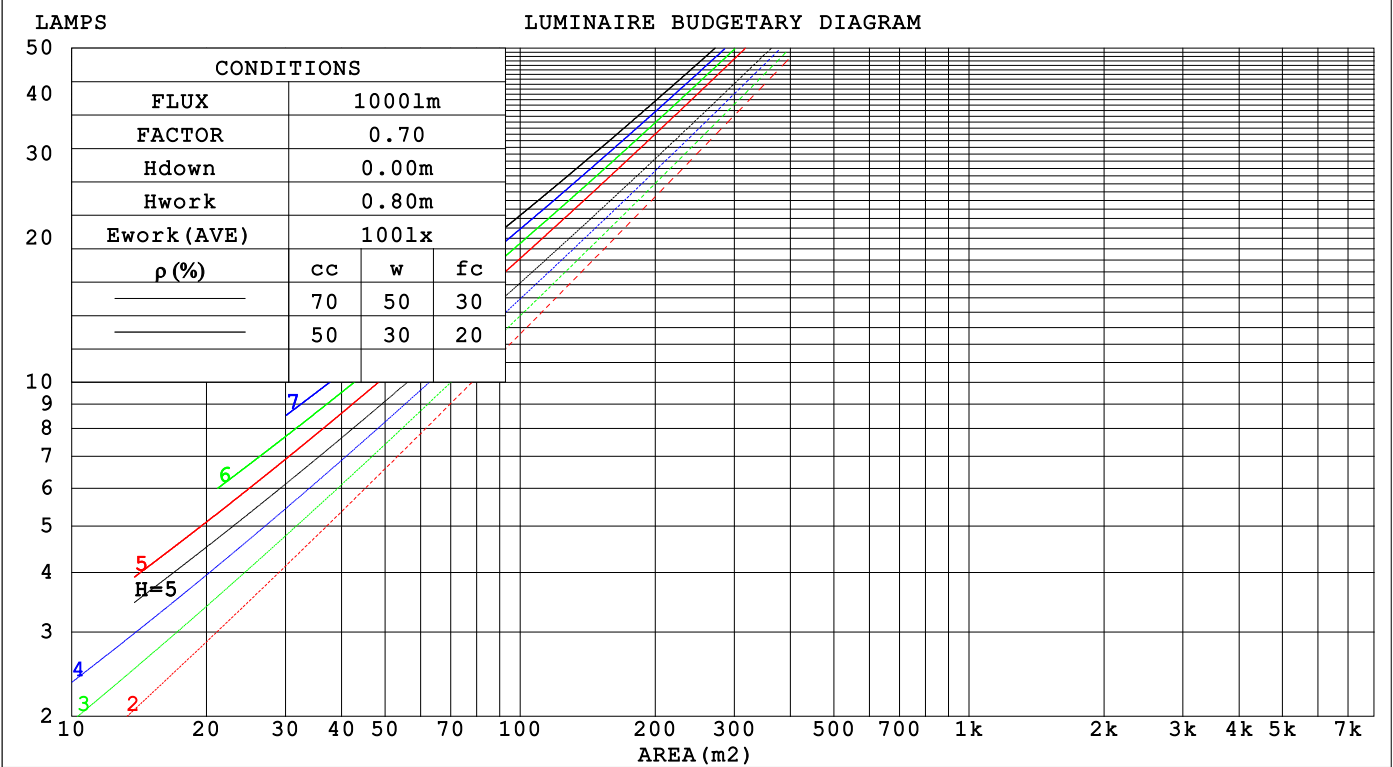
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

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:0.0722A P:16.8W PF:0.9666 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.39% KDisp:0.9830		
Lamp Flux:1680.59x1 lm		
NAME: MD18-18-XX-02 3500K RA90 38D	TYPE:	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:2024-09-06

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:0.0722A P:16.8W PF:0.9666 Freq:49.99Hz			UTHDi:0.17% ITHDi:18.39% KDisp:0.9830			Lamp Flux:1680.59x1 lm		
NAME: MD18-18-XX-02 3500K RA90 38D			TYPE:			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	.184	.105	.033	.177	.101	.032	.165	.094	.030	.153	.088	.028	.142	.082	.027															
2.0	.176	.096	.030	.170	.094	.029	.159	.089	.028	.150	.084	.026	.140	.079	.025															
3.0	.167	.089	.027	.162	.087	.026	.153	.083	.025	.145	.079	.024	.137	.076	.023															
4.0	.159	.082	.024	.154	.081	.024	.147	.078	.023	.139	.075	.023	.132	.072	.022															
5.0	.151	.077	.022	.147	.076	.022	.140	.073	.022	.134	.071	.021	.128	.068	.021															
6.0	.144	.072	.021	.140	.071	.020	.134	.069	.020	.129	.067	.020	.123	.065	.019															
7.0	.137	.068	.019	.134	.067	.019	.129	.065	.019	.124	.063	.018	.119	.062	.018															
8.0	.131	.064	.018	.128	.063	.018	.123	.062	.018	.119	.060	.017	.115	.059	.017															
9.0	.125	.060	.017	.123	.060	.017	.118	.059	.017	.114	.057	.016	.110	.056	.016															
10.0	.120	.057	.016	.117	.057	.016	.114	.056	.016	.110	.055	.016	.107	.054	.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	.172	.157	.144	.147	.135	.124	.100	.093	.086	.058	.054	.050	.019	.017	.016	
2.0	.157	.132	.112	.134	.114	.097	.092	.079	.068	.053	.046	.040	.017	.015	.013	
3.0	.145	.114	.089	.124	.098	.077	.085	.068	.054	.049	.040	.032	.016	.013	.010	
4.0	.135	.099	.072	.115	.086	.062	.079	.060	.044	.046	.035	.026	.015	.011	.009	
5.0	.126	.087	.059	.108	.076	.051	.074	.053	.036	.043	.031	.022	.014	.010	.007	
6.0	.119	.078	.049	.102	.068	.043	.070	.047	.030	.041	.028	.018	.013	.009	.006	
7.0	.112	.071	.042	.096	.061	.036	.067	.043	.026	.039	.025	.015	.012	.008	.005	
8.0	.106	.064	.036	.091	.056	.031	.063	.039	.022	.037	.023	.013	.012	.008	.004	
9.0	.101	.059	.031	.087	.051	.027	.060	.036	.019	.035	.021	.011	.011	.007	.004	
10.0	.096	.055	.027	.083	.048	.024	.058	.034	.017	.034	.020	.010	.011	.007	.003	

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

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:0.0722A P:16.8W PF:0.9666 Freq:49.99Hz UTHDi:0.17% ITHDi:18.39% KDisp:0.9830 Lamp Flux:1680.59x1 lm										
NAME: MD18-18-XX-02 3500K RA90 38D					TYPE:			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	26.6	27.6	26.8	27.8	27.9	26.8	27.8	27.0	28.0	28.1
3H	26.5	27.4	26.8	27.6	27.8	26.7	27.6	27.0	27.8	28.0
4H	26.5	27.3	26.7	27.5	27.8	26.7	27.5	26.9	27.7	27.9
6H	26.5	27.3	26.8	27.5	27.7	26.7	27.4	27.0	27.7	27.9
8H	26.5	27.2	26.8	27.5	27.7	26.7	27.4	27.0	27.7	27.9
12H	26.4	27.2	26.8	27.4	27.7	26.6	27.4	27.0	27.6	27.9
4H 2H	26.4	27.2	26.7	27.4	27.7	26.6	27.4	26.9	27.6	27.9
3H	26.3	27.0	26.6	27.3	27.6	26.5	27.2	26.8	27.5	27.8
4H	26.3	27.0	26.6	27.3	27.6	26.5	27.1	26.8	27.4	27.7
6H	26.4	26.9	26.7	27.3	27.6	26.5	27.1	26.9	27.5	27.8
8H	26.4	26.9	26.8	27.3	27.6	26.6	27.1	27.0	27.5	27.8
12H	26.4	26.9	26.8	27.2	27.6	26.6	27.1	27.0	27.5	27.8
8H 4H	26.2	26.8	26.6	27.1	27.5	26.4	26.9	26.8	27.3	27.7
6H	26.3	26.8	26.8	27.2	27.6	26.5	27.0	26.9	27.4	27.8
8H	26.4	26.8	26.8	27.2	27.6	26.6	27.0	27.0	27.4	27.8
12H	26.4	26.7	26.9	27.2	27.7	26.7	27.0	27.1	27.4	27.9
12H 4H	26.2	26.7	26.6	27.1	27.4	26.4	26.9	26.8	27.2	27.6
6H	26.3	26.7	26.8	27.1	27.6	26.5	26.9	26.9	27.3	27.7
8H	26.4	26.7	26.8	27.2	27.6	26.6	26.9	27.1	27.4	27.8
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 2.3 / - 6.2					+ 2.4 / - 6.1				
1.5H	+ 4.4 / - 6.1					+ 4.5 / - 6.0				
2.0H	+ 5.6 / - 2.2					+ 5.9 / - 2.4				

CIE Pub.117, 1681 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = 1.8)
Area: 0.0013 m2

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

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:0.0722A P:16.8W PF:0.9666 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.39% KDisp:0.9830 Lamp Flux:1680.59x1 lm		
NAME: MD18-18-XX-02 3500K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

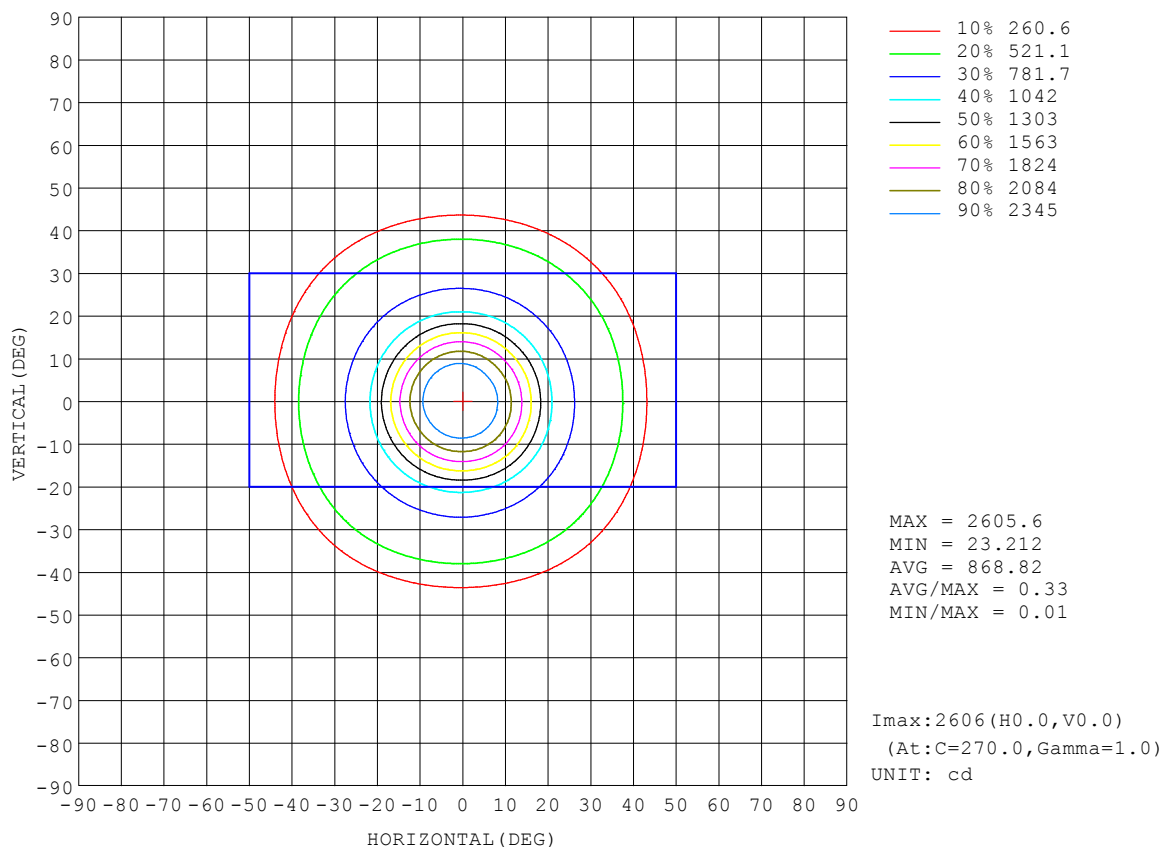
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	84	77	73	83	77	73	82	76	72	68
0.80	92	85	81	91	85	81	90	84	81	77
1.00	97	91	87	96	90	87	94	90	86	82
1.25	101	96	92	100	95	91	98	94	91	86
1.50	104	99	95	103	98	95	101	97	94	89
2.00	107	103	99	106	102	99	103	100	97	92
2.50	109	105	102	108	104	101	104	101	99	93
3.00	111	107	104	109	106	103	106	103	101	94
4.00	113	110	108	111	108	106	107	105	104	96
5.00	114	112	110	112	110	108	108	107	105	97
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: 2024-09-06

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:0.0722A P:16.8W PF:0.9666 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.39% KDisp:0.9830 Lamp Flux:1680.59x1 lm		
NAME: MD18-18-XX-02 3500K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

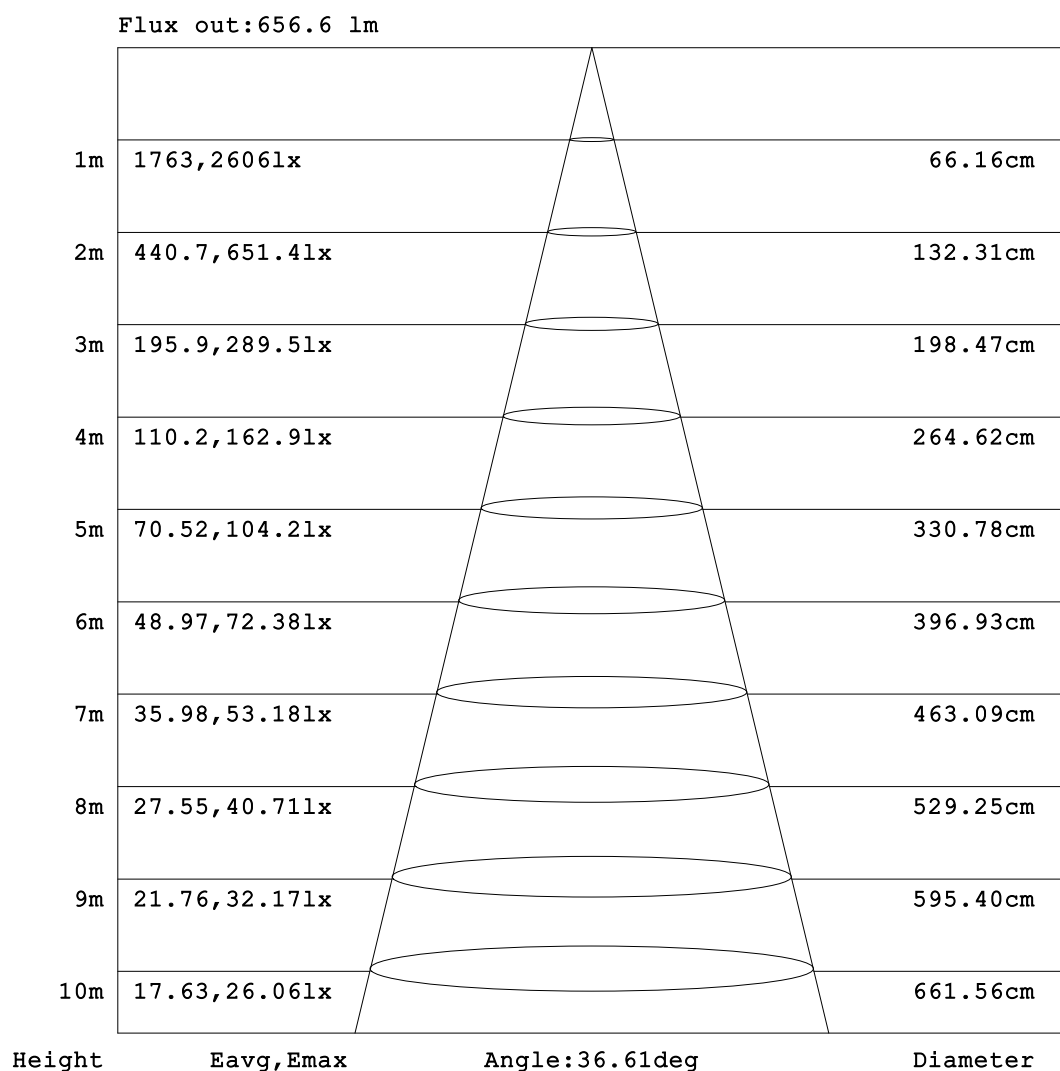


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: DAMIN
Test Date: 2024-09-06

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:0.0722A P:16.8W PF:0.9666 Freq:49.99Hz		
UTHDi:0.17% ITHDi:18.39% KDisp:0.9830 Lamp Flux:1680.59x1 lm		
NAME: MD18-18-XX-02 3500K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:



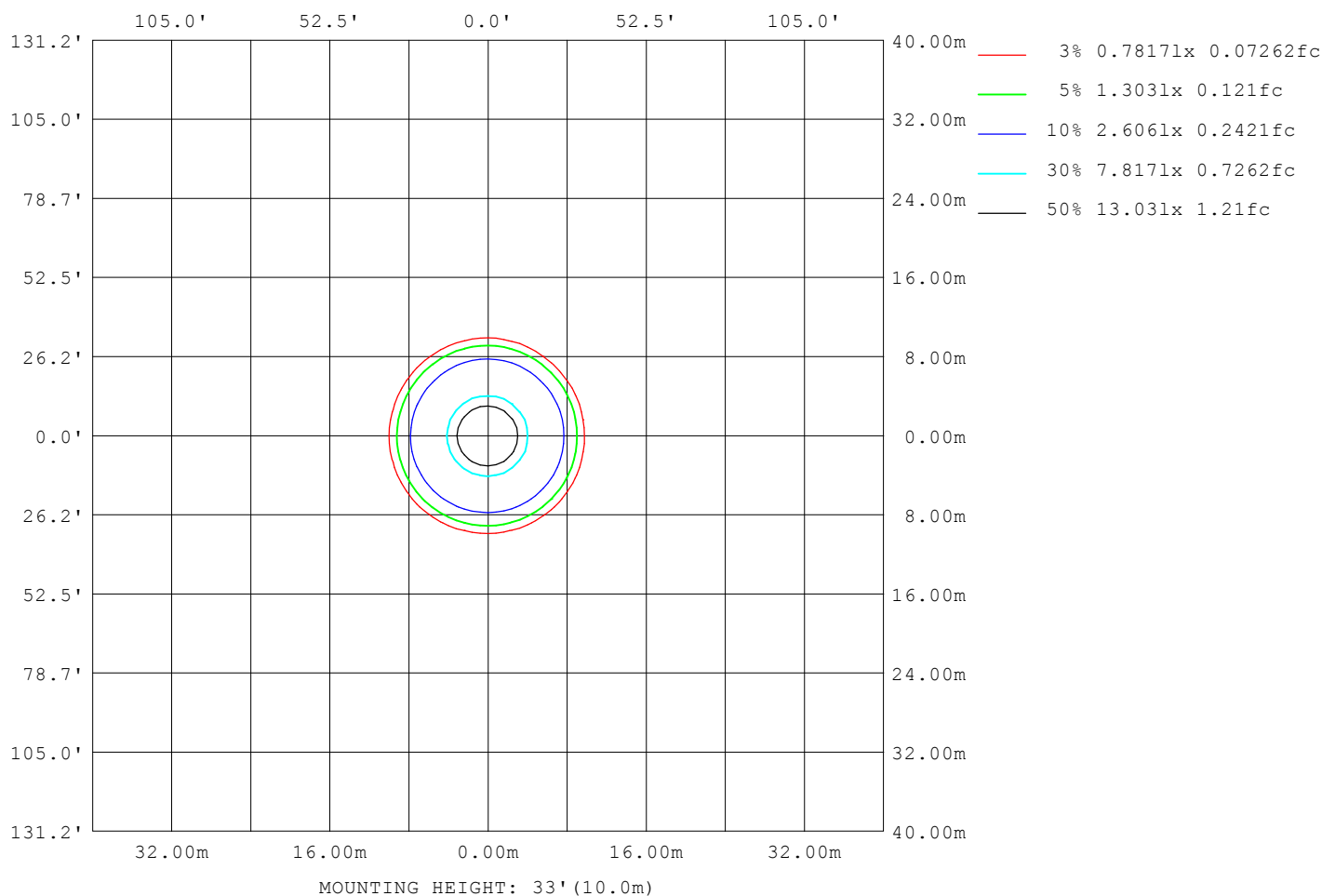
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

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:0.0722A P:16.8W PF:0.9666 Freq:49.99Hz UTHDi:0.17% ITHDi:18.39% KDisp:0.9830 Lamp Flux:1680.59x1 lm		
NAME: MD18-18-XX-02 3500K RA90 38D	TYPE:	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:2024-09-06

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:0.0722A P:16.8W PF:0.9666 Freq:49.99Hz UTHDi:0.17% ITHDi:18.39% KDisp:0.9830 Lamp Flux:1680.59x1 lm		
NAME: MD18-18-XX-02 3500K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming lighting	SUR.: 41mm	Shielding Angle:

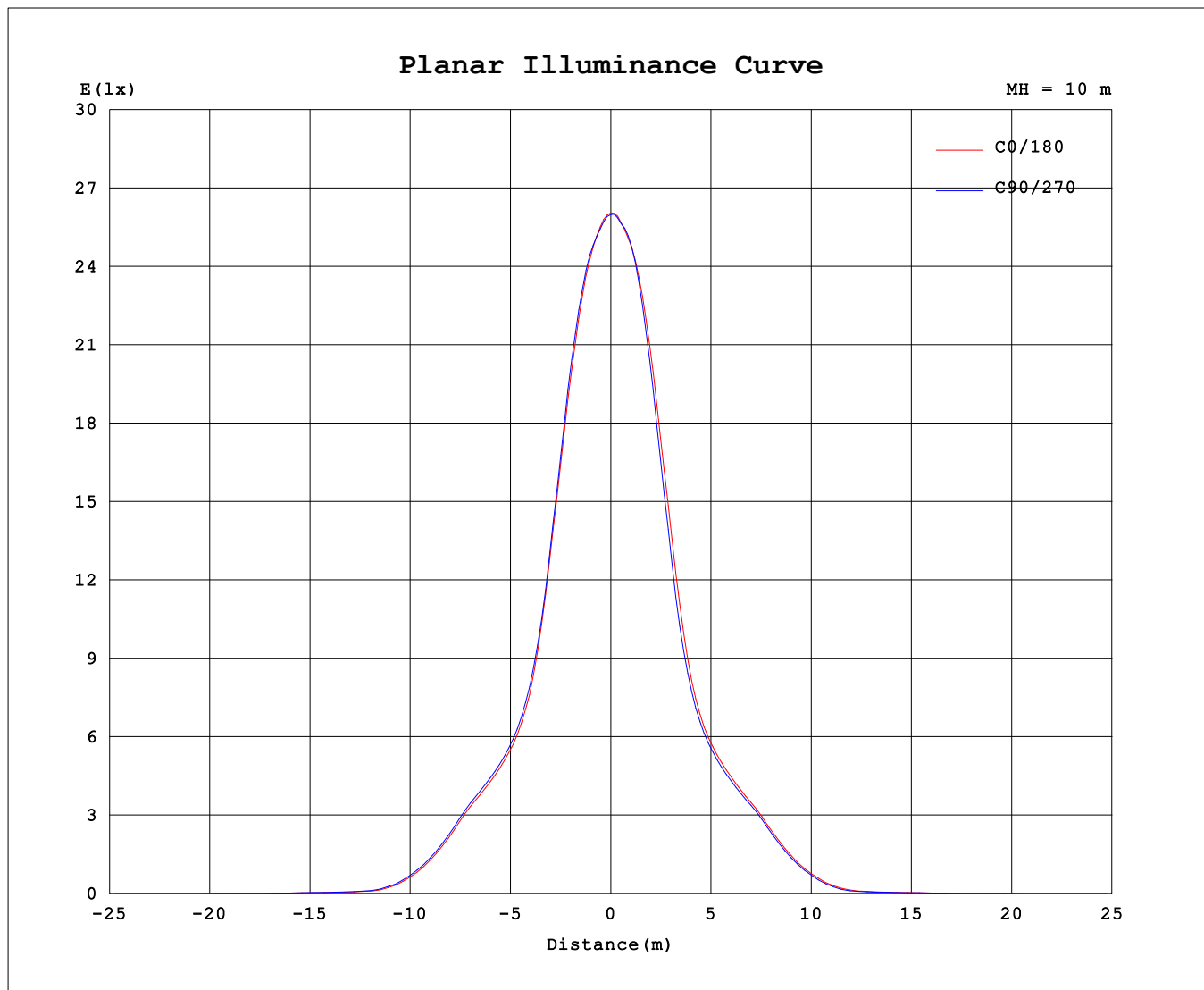
AvgL	cd/m2
L_0~180 (65) av	21382
L_0~180 (75) av	27913
L_0~180 (85) av	29538
L_90~270 (65) av	20021
L_90~270 (75) av	25412
L_90~270 (85) av	28848
L_45 (65) av	20554
L_45 (75) av	27386
L_45 (85) av	29060

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

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: 2024-09-06

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	2600	2600	2600	2600	2600	2600	2600	2600
3.0	2557	2546	2556	2564	2573	2579	2576	2565
6.0	2458	2468	2484	2492	2509	2520	2518	2480
9.0	2283	2306	2321	2349	2366	2360	2336	2290
12.0	2018	2053	2064	2100	2120	2093	2053	2012
15.0	1684	1717	1717	1765	1790	1739	1693	1664
18.0	1330	1361	1353	1402	1425	1370	1322	1305
21.0	1032	1052	1067	1095	1101	1070	1038	1027
24.0	853.9	867.2	887.3	897.5	899.0	884.1	864.3	853.9
27.0	759.1	771.6	786.0	791.6	792.9	780.1	766.5	758.9
30.0	697.2	710.7	721.8	726.6	727.0	716.9	704.1	697.8
33.0	643.9	659.7	670.1	672.8	671.8	664.2	650.9	644.6
36.0	578.4	592.0	603.9	609.9	611.6	601.7	592.2	581.3
39.0	453.4	468.9	476.9	497.6	496.4	484.4	476.4	463.2
42.0	312.2	326.1	334.5	354.5	354.8	344.4	335.9	318.1
45.0	179.9	193.8	199.3	216.6	218.6	207.4	201.3	179.3
48.0	78.60	87.63	91.51	101.2	102.9	96.56	87.83	78.42
51.0	35.76	41.17	41.97	43.79	43.16	39.65	37.24	34.72
54.0	27.61	29.88	30.74	31.73	31.34	27.92	27.23	26.78
57.0	22.17	23.16	22.74	23.87	23.35	21.70	21.18	21.20
60.0	17.41	17.93	17.32	17.69	18.07	16.76	16.31	16.40
63.0	13.39	13.58	13.07	13.57	13.78	12.65	12.23	12.41
66.0	10.87	11.00	10.75	11.00	11.15	10.36	9.899	10.19
69.0	9.194	9.431	9.249	9.521	9.532	8.868	8.386	8.640
72.0	9.042	9.343	8.467	9.358	9.096	8.403	7.844	8.115
75.0	9.172	9.690	8.829	9.828	9.612	8.829	8.272	8.511
78.0	8.237	8.856	8.643	9.332	9.114	8.381	7.789	8.007
81.0	6.174	6.772	7.044	7.349	7.201	6.509	5.949	5.834
84.0	3.744	4.218	4.717	4.826	4.561	3.912	3.429	3.379
87.0	0.8177	1.265	1.764	1.991	1.716	1.334	0.8361	0.6779
90.0	0.0725	0.0581	0.0704	0.0570	0.0603	0.0623	0.0691	0.0664

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-09-06

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: