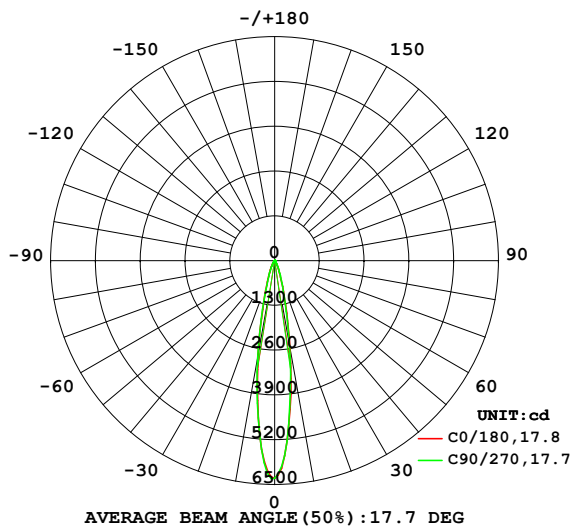


## LUMINAIRE PHOTOMETRIC TEST REPORT

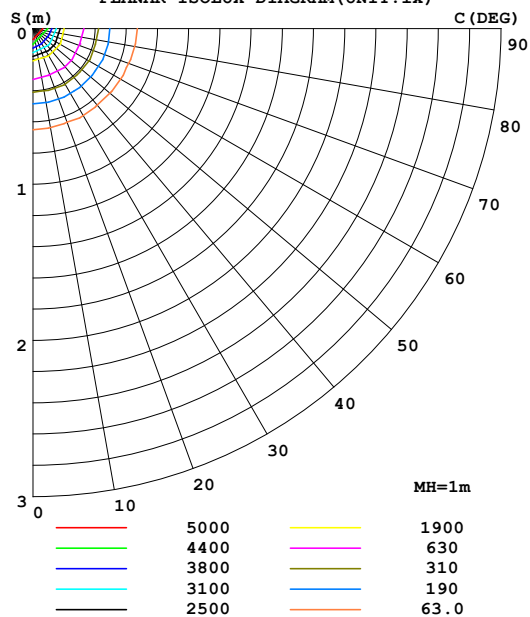
Test:U:240.3V I:0.0447A P:10.0W PF:0.9303 Freq:49.99Hz		
UTHDi:0.21% ITHDi:19.84% KDisp:0.9509 Lamp Flux:974.82lx1 lm		
NAME: MD10-10-XX-01 4000K RA90 15D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 97.50 lm/W
MODEL		I <sub>max</sub> (cd)	6325	S/MH (C0/180)	0.31	
NOMINAL POWER(W)	10	LOR (%)	100.0	S/MH (C90/270)	0.32	
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	974.82	η UP,DN (C0-180)	0.0,48.5	
NOMINAL FLUX(lm)	974.821	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,51.5	
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.00	
TEST VOLTAGE(V)	240.30	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:2023-09-14

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:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	2595	2500	2492	2657	2788	2860	2849	2718	0- 10	395.1	395.1	40.5,40.5
20	509.6	512.8	536.1	577.4	576.2	556.3	555.2	537.1	10- 20	342.7	737.8	75.7,75.7
30	145.7	149.5	165.3	186.7	175.9	161.7	161.6	156.4	20- 30	141.1	878.8	90.2,90.2
40	39.44	40.61	48.21	56.32	50.72	46.23	46.85	44.77	30- 40	57.47	936.3	96,96
50	12.61	12.09	13.84	17.00	15.60	14.99	15.35	14.75	40- 50	20.37	956.7	98.1,98.1
60	7.539	7.215	7.683	8.786	9.215	8.944	8.840	8.286	50- 60	9.523	966.2	99.1,99.1
70	4.017	3.949	3.914	4.325	4.800	4.752	4.531	4.179	60- 70	6.318	972.5	99.8,99.8
80	0.4334	0.4104	0.4497	0.4455	0.4718	0.4018	0.3009	0.3409	70- 80	2.157	974.7	100,100
90	0.0176	0.0026	0.0203	0.0026	0.0026	0	0.0097	0.0006	80- 90	0.1413	974.8	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): 949.03 lm

%lum = 97.4%

%lamp = 97.4%

Conical surface Flux(130deg): 969.79 lm

%lum = 99.5%

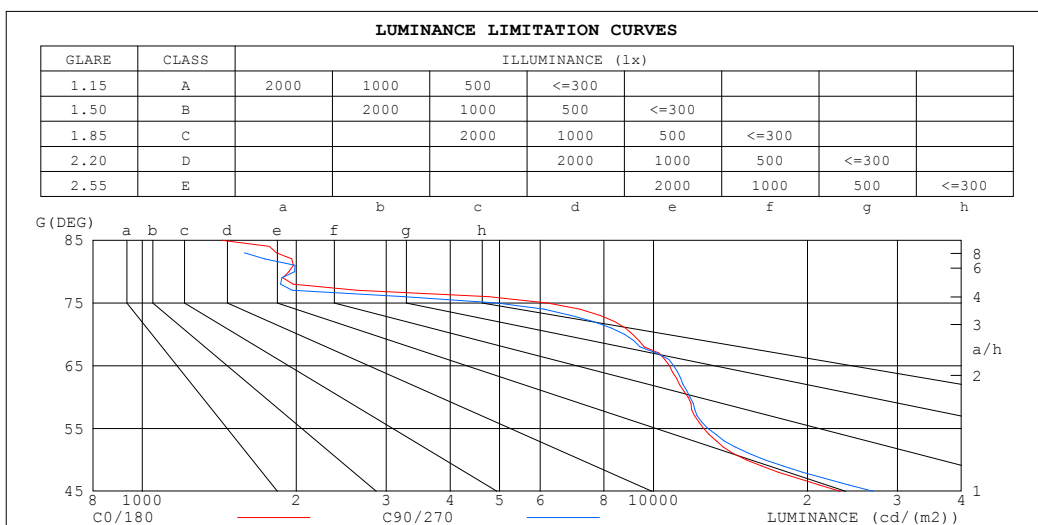
%lamp = 99.5%

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2023-09-14

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:240.3V I:0.0447A P:10.0W PF:0.9303 Freq:49.99Hz		
UTHDi:0.21% ITHDi:19.84% KDisp:0.9509 Lamp Flux:974.82lx1 lm		
NAME: MD10-10-XX-01 4000K RA90 15D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1432	208
80	1934	1986
75	6212	4949
70	9098	8776
65	10746	10951
60	11681	11784
55	12544	12778
50	15194	16508
45	23188	26876

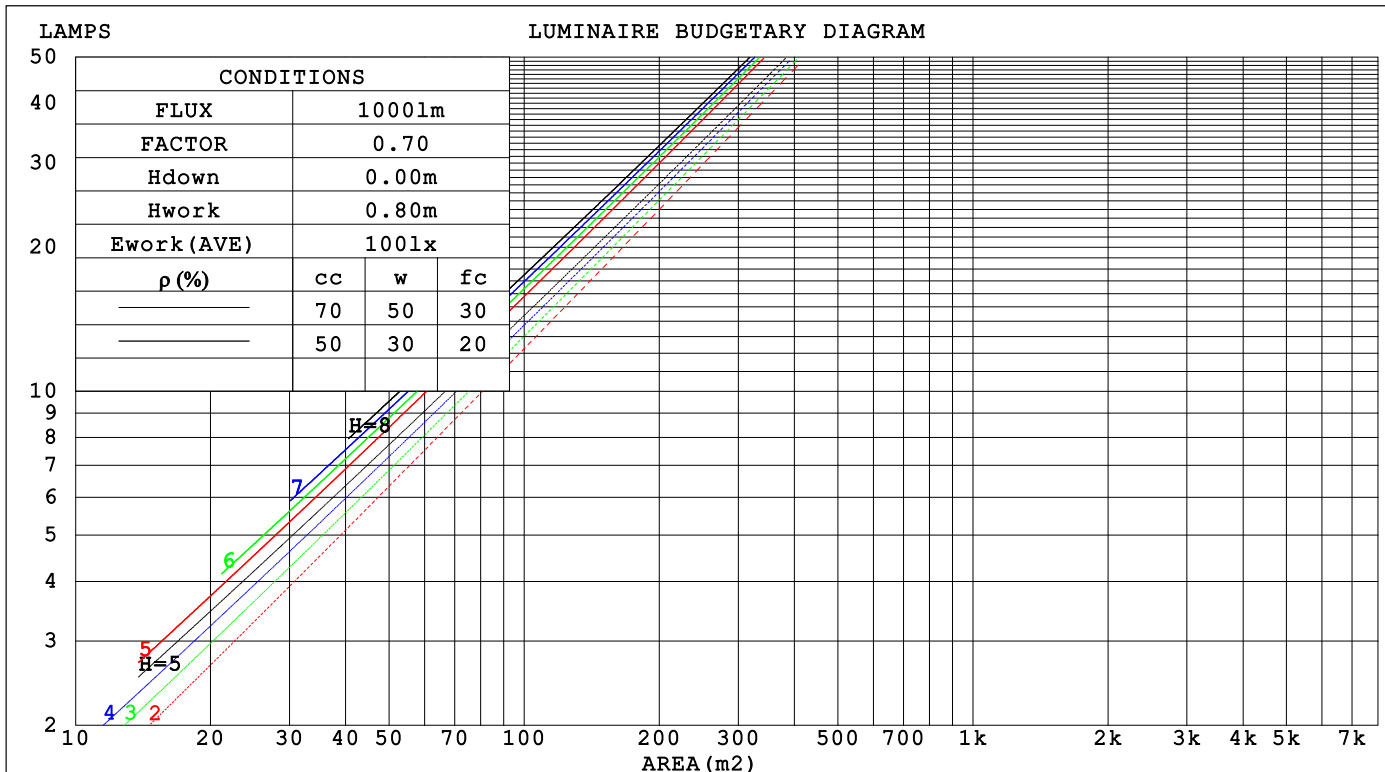
C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2023-09-14

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:240.3V I:0.0447A P:10.0W PF:0.9303 Freq:49.99Hz		
UTHDi:0.21% ITHDi:19.84% KDisp:0.9509 Lamp Flux:974.82lx1 lm		
NAME: MD10-10-XX-01 4000K RA90 15D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	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															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	1.13	1.11	1.09	1.11	1.09	1.07	1.07	1.05	1.04	1.03	1.02	1.01	.00	.99	.98	.96														
2.0	1.07	1.04	1.02	1.06	1.03	1.00	1.02	1.00	.98	.00	.98	.96	.97	.95	.94	.93														
3.0	1.02	.99	.96	1.01	.98	.95	.99	.96	.94	.96	.94	.92	.94	.92	.91	.89														
4.0	.98	.94	.91	.97	.93	.91	.95	.92	.90	.93	.91	.89	.92	.89	.88	.86														
5.0	.95	.90	.87	.94	.90	.87	.92	.89	.86	.91	.88	.85	.89	.87	.85	.84														
6.0	.91	.87	.84	.91	.87	.84	.89	.86	.83	.88	.85	.83	.87	.84	.82	.81														
7.0	.88	.84	.81	.88	.84	.81	.87	.83	.81	.86	.83	.80	.85	.82	.80	.79														
8.0	.86	.82	.79	.85	.81	.78	.84	.81	.78	.83	.80	.78	.83	.80	.78	.77														
9.0	.83	.79	.76	.83	.79	.76	.82	.79	.76	.81	.78	.76	.81	.78	.76	.75														
10.0	.81	.77	.74	.81	.77	.74	.80	.76	.74	.79	.76	.74	.79	.76	.74	.73														



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2023-09-14

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:240.3V I:0.0447A P:10.0W PF:0.9303 Freq:49.99Hz			UTHDi:0.21% ITHDi:19.84% KDisp:0.9509			Lamp Flux:974.82lx1 lm		
NAME: MD10-10-XX-01 4000K RA90 15D			TYPE:			WEIGHT:		
SPEC.:			DIM.:			SERIAL No.:		
MFR.: Norming Lighting			SUR.:			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	.141	.080	.025	.134	.076	.024	.122	.070	.022	.110	.064	.020	.100	.058	.019		
2.0	.131	.072	.022	.125	.069	.021	.115	.064	.020	.106	.059	.019	.097	.055	.017		
3.0	.122	.065	.019	.118	.063	.019	.109	.059	.018	.101	.055	.017	.094	.052	.016		
4.0	.114	.059	.017	.110	.058	.017	.103	.055	.016	.096	.052	.016	.090	.049	.015		
5.0	.107	.055	.016	.104	.053	.016	.098	.051	.015	.092	.049	.014	.087	.046	.014		
6.0	.101	.051	.015	.099	.050	.014	.093	.048	.014	.088	.046	.013	.084	.044	.013		
7.0	.096	.047	.013	.094	.047	.013	.089	.045	.013	.085	.043	.013	.081	.042	.012		
8.0	.091	.045	.013	.089	.044	.012	.085	.042	.012	.081	.041	.012	.078	.040	.012		
9.0	.087	.042	.012	.085	.041	.012	.081	.040	.011	.078	.039	.011	.075	.038	.011		
10.0	.083	.040	.011	.081	.039	.011	.078	.038	.011	.075	.037	.011	.072	.036	.010		

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	.102	.089	.079	.071	.051	.046	.042	.016	.015	.014		
3.0	.136	.113	.095	.117	.098	.083	.080	.068	.058	.046	.040	.034	.015	.013	.011		
4.0	.124	.098	.078	.106	.085	.068	.073	.059	.048	.042	.035	.028	.014	.011	.009		
5.0	.113	.086	.065	.097	.074	.057	.067	.052	.040	.039	.030	.024	.012	.010	.008		
6.0	.104	.076	.055	.090	.066	.048	.062	.046	.034	.036	.027	.020	.012	.009	.007		
7.0	.097	.068	.047	.083	.059	.041	.057	.041	.029	.033	.024	.017	.011	.008	.006		
8.0	.090	.061	.041	.077	.053	.036	.054	.037	.025	.031	.022	.015	.010	.007	.005		
9.0	.084	.055	.035	.073	.048	.031	.050	.034	.022	.029	.020	.013	.009	.007	.004		
10.0	.079	.050	.031	.068	.044	.027	.047	.031	.019	.028	.018	.012	.009	.006	.004		

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2023-09-14

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:240.3V I:0.0447A P:10.0W PF:0.9303 Freq:49.99Hz UTHDi:0.21% ITHDi:19.84% KDisp:0.9509 Lamp Flux:974.82lx1 lm										
NAME: MD10-10-XX-01 4000K RA90 15D					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.: Norming Lighting					SUR.:			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	15.2	15.8	15.4	16.0	16.1	15.6	16.3	15.8	16.5	16.6
3H	15.6	16.2	15.8	16.4	16.6	16.0	16.6	16.2	16.8	17.0
4H	15.7	16.2	15.9	16.5	16.7	16.0	16.6	16.3	16.8	17.0
6H	15.6	16.1	15.9	16.4	16.6	15.9	16.5	16.2	16.7	17.0
8H	15.5	16.1	15.8	16.3	16.6	15.9	16.4	16.2	16.7	16.9
12H	15.5	16.0	15.8	16.3	16.6	15.8	16.4	16.2	16.6	16.9
4H 2H	15.2	15.8	15.5	16.0	16.3	15.7	16.3	15.9	16.5	16.7
3H	15.8	16.3	16.1	16.5	16.8	16.1	16.6	16.4	16.9	17.2
4H	15.9	16.4	16.2	16.6	16.9	16.2	16.6	16.5	16.9	17.2
6H	15.8	16.2	16.2	16.5	16.9	16.1	16.5	16.4	16.8	17.2
8H	15.8	16.1	16.1	16.5	16.9	16.0	16.4	16.4	16.8	17.1
12H	15.7	16.1	16.1	16.4	16.8	16.0	16.3	16.4	16.7	17.1
8H 4H	15.8	16.2	16.2	16.5	16.9	16.1	16.5	16.5	16.8	17.2
6H	15.7	16.1	16.1	16.4	16.9	16.0	16.3	16.4	16.7	17.1
8H	15.7	16.0	16.1	16.4	16.8	15.9	16.2	16.4	16.7	17.1
12H	15.6	15.9	16.1	16.3	16.8	15.9	16.1	16.4	16.6	17.0
12H 4H	15.7	16.1	16.2	16.5	16.9	16.0	16.4	16.4	16.8	17.1
6H	15.7	16.0	16.1	16.4	16.8	15.9	16.2	16.4	16.6	17.1
8H	15.6	15.9	16.1	16.3	16.8	15.9	16.1	16.4	16.6	17.1
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 1.7 / - 2.2					+ 2.2 / - 2.6				
1.5H	+ 3.3 / - 1.9					+ 3.9 / - 2.3				
2.0H	+ 2.1 / - 1.0					+ 2.8 / - 1.2				

CIE Pub.117, 974.8 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -0.1)  
Area: 0.0013 m2

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2023-09-14

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:240.3V I:0.0447A P:10.0W PF:0.9303 Freq:49.99Hz		
UTHDi:0.21% ITHDi:19.84% KDisp:0.9509 Lamp Flux:974.82lx1 lm		
NAME: MD10-10-XX-01 4000K RA90 15D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:

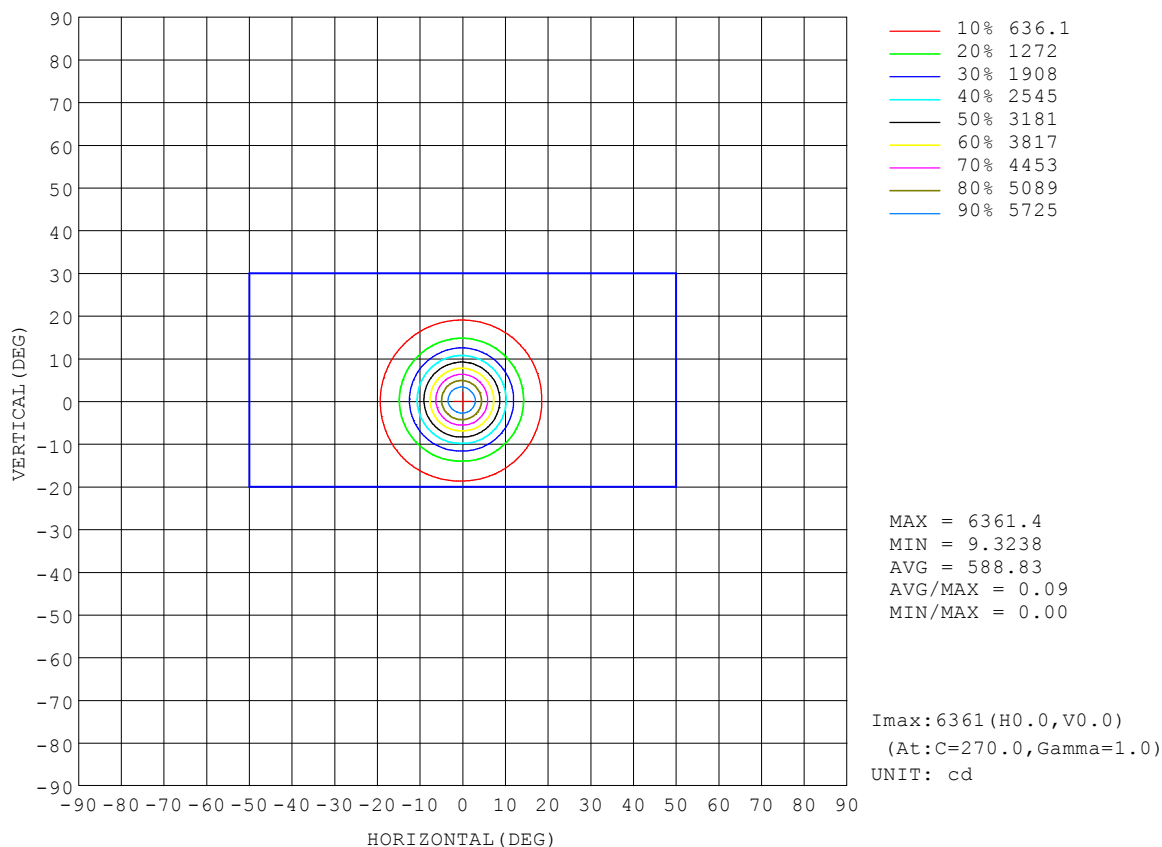
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	89	83	79	89	83	79	88	83	79	76
0.80	96	91	87	96	90	87	94	90	87	83
1.00	100	95	92	100	95	91	98	94	91	87
1.25	104	99	96	103	99	95	101	97	95	91
1.50	107	102	99	105	101	99	103	100	97	93
2.00	109	105	102	108	104	101	105	102	100	95
2.50	111	107	104	109	106	103	106	103	101	96
3.00	112	109	106	110	108	105	107	105	103	97
4.00	114	112	109	112	110	108	109	107	105	98
5.00	115	113	112	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:2023-09-14

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:240.3V I:0.0447A P:10.0W PF:0.9303 Freq:49.99Hz		
UTHDi:0.21% ITHDi:19.84% KDisp:0.9509 Lamp Flux:974.82lx1 lm		
NAME: MD10-10-XX-01 4000K RA90 15D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:



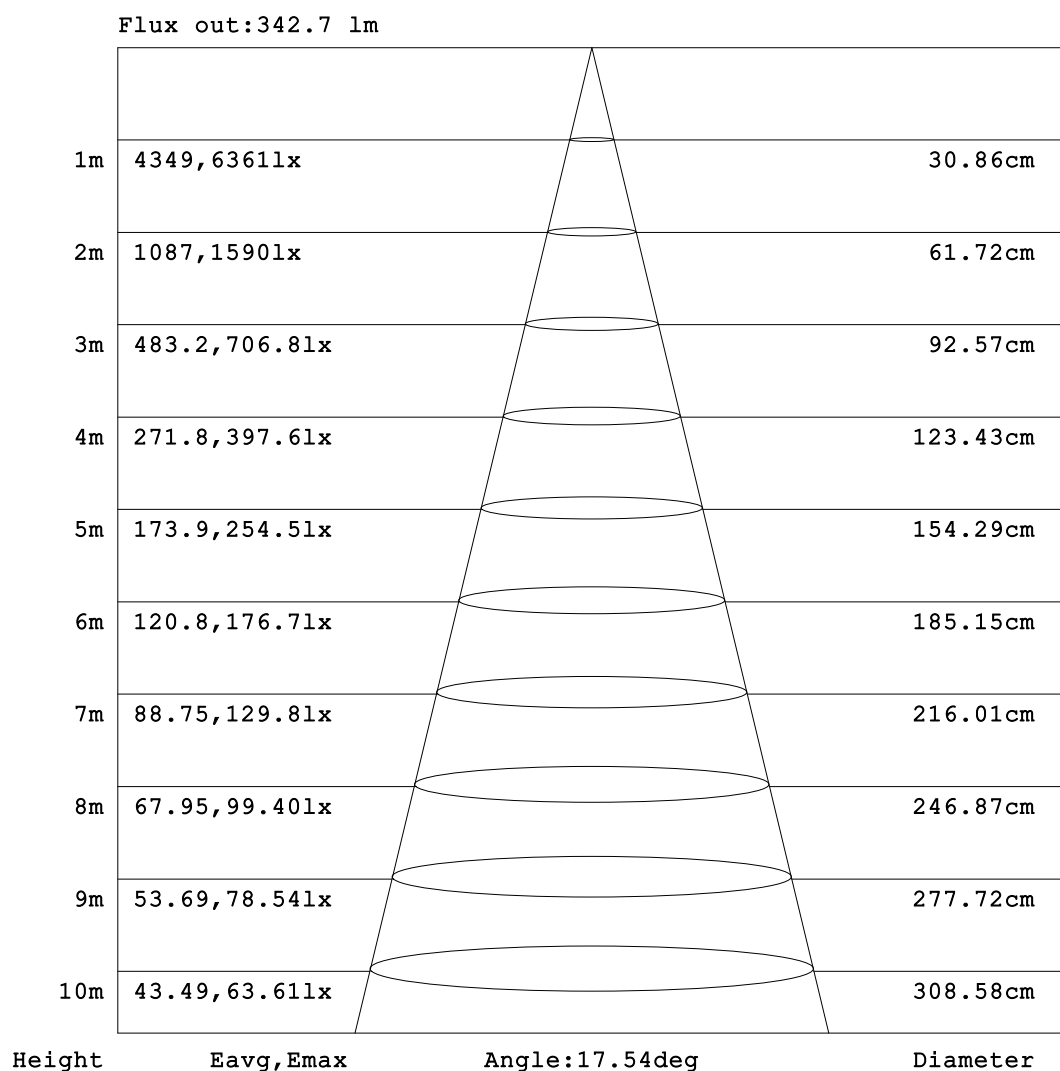
C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DAMIN  
Test Date: 2023-09-14

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:240.3V I:0.0447A P:10.0W PF:0.9303 Freq:49.99Hz		
UTHDi:0.21% ITHDi:19.84% KDisp:0.9509 Lamp Flux:974.82lx1 lm		
NAME: MD10-10-XX-01 4000K RA90 15D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:



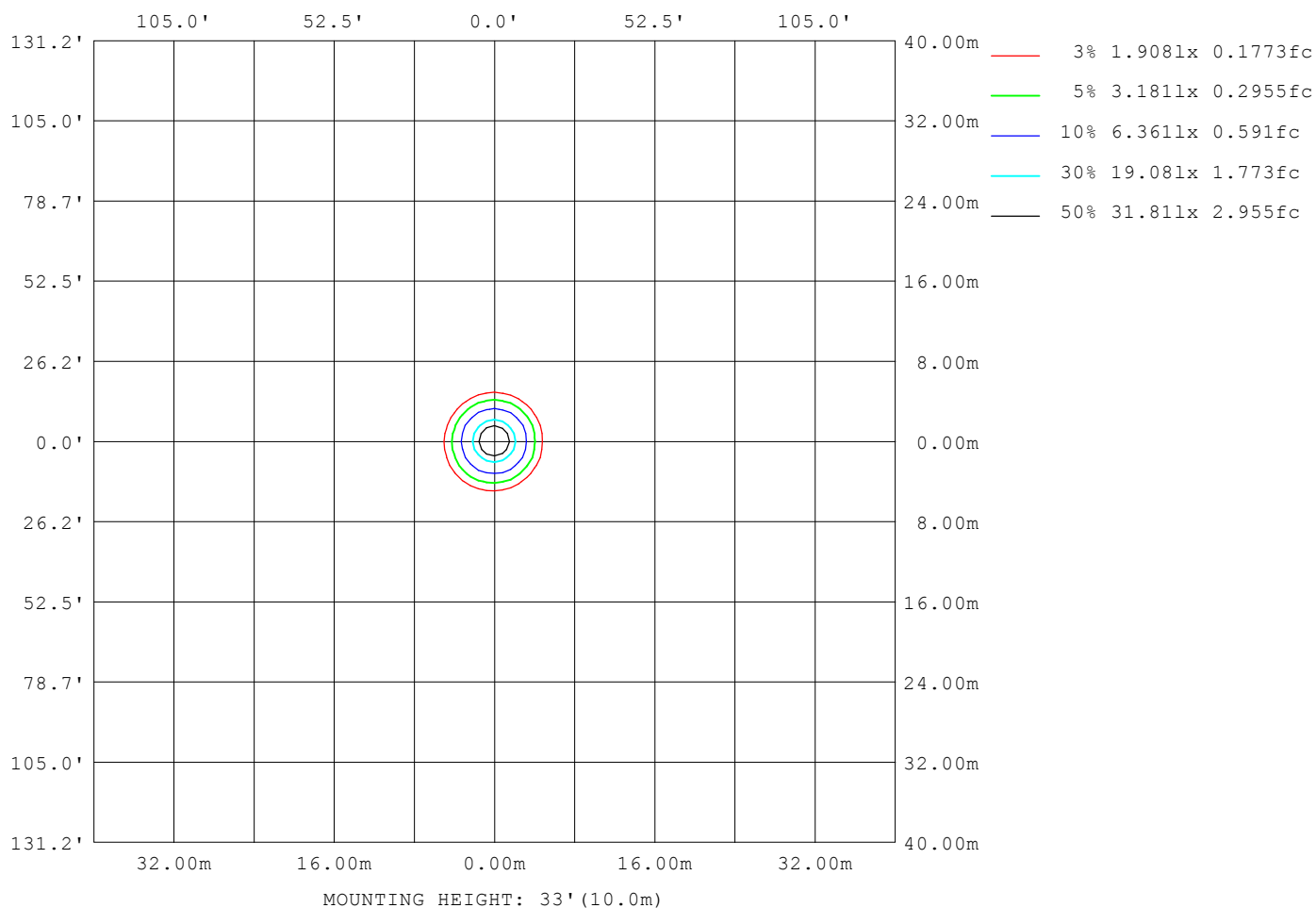
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2023-09-14

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:240.3V I:0.0447A P:10.0W PF:0.9303 Freq:49.99Hz		
UTHDi:0.21% ITHDi:19.84% KDisp:0.9509 Lamp Flux:974.82lx1 lm		
NAME: MD10-10-XX-01 4000K RA90 15D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2023-09-14

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:240.3V I:0.0447A P:10.0W PF:0.9303 Freq:49.99Hz		
UTHDi:0.21% ITHDi:19.84% KDisp:0.9509 Lamp Flux:974.82lx1 lm		
NAME: MD10-10-XX-01 4000K RA90 15D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:

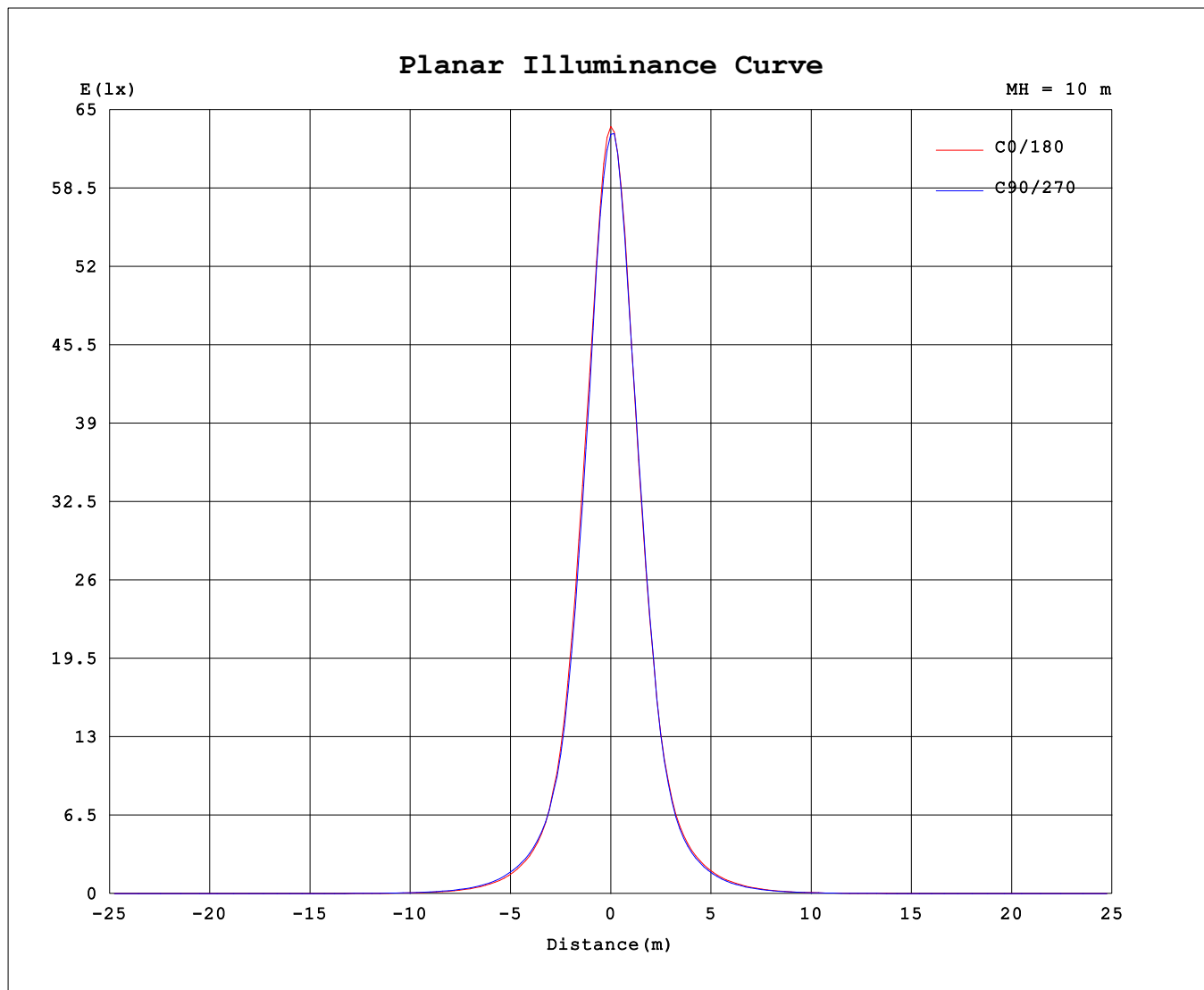
AvgL	cd/m2
L_0~180 (65) av	11870
L_0~180 (75) av	6752
L_0~180 (85) av	1643
L_90~270 (65) av	11802
L_90~270 (75) av	4746
L_90~270 (85) av	170
L_45 (65) av	11763
L_45 (75) av	6271
L_45 (85) av	233

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2023-09-14

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: 2023-09-14

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  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:

```