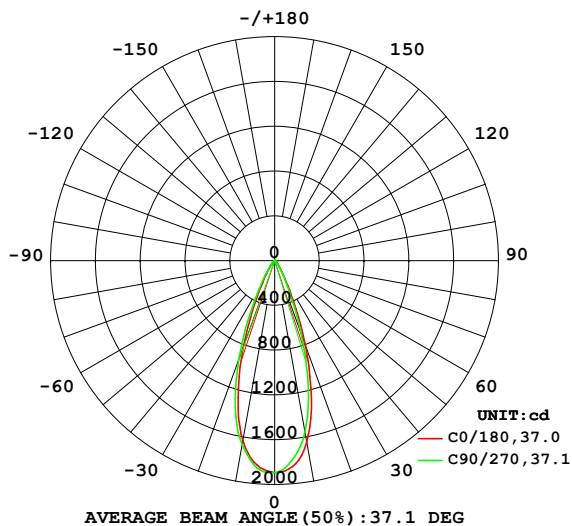


## LUMINAIRE PHOTOMETRIC TEST REPORT

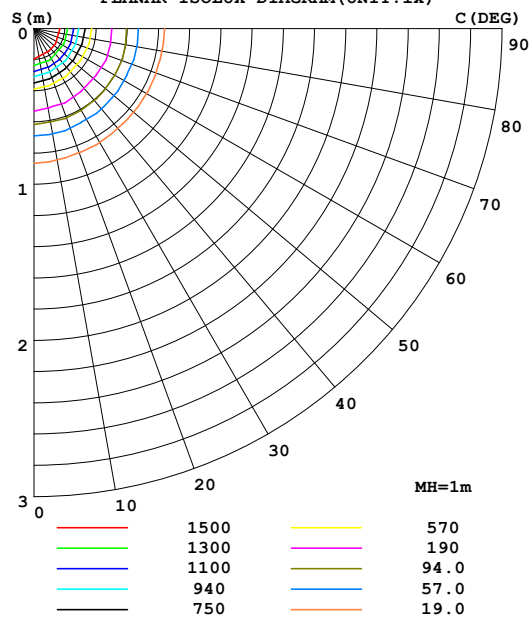
Test:U:240.4V I:0.0449A P:10.0W PF:0.9311 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.38% KDisp:0.9518 Lamp Flux:811.433x1 lm		
NAME: MD10-10-XX-05 3000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 80.77 lm/W
MODEL		I <sub>max</sub> (cd)	1900	S/MH(C0/180)		0.59
NOMINAL POWER(W)	10	LOR(%)	100.0	S/MH(C90/270)		0.62
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	811.43	η UP,DN(C0-180)		0.0,45.9
NOMINAL FLUX(lm)	811.433	CIE CLASS	DIRECT	η UP,DN(C180-360)		0.0,54.1
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM		0.50
TEST VOLTAGE(V)	240.41	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:2023-09-18

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	1646	1577	1559	1544	1633	1666	1671	1694	0- 10	168.1	168.1	20.7,20.7
20	805.8	687.6	695.0	671.0	821.6	898.6	937.6	923.8	10- 20	339.6	507.7	62.6,62.6
30	185.9	166.7	161.0	158.3	188.7	226.6	248.4	241.1	20- 30	197.1	704.8	86.9,86.9
40	47.99	40.84	40.61	39.48	48.73	59.05	62.31	61.13	30- 40	64.87	769.6	94.8,94.8
50	15.30	14.19	13.75	13.78	15.42	17.04	17.78	17.18	40- 50	20.58	790.2	97.4,97.4
60	9.545	9.048	8.605	8.562	9.204	9.460	9.605	9.887	50- 60	10.65	800.8	98.7,98.7
70	5.077	4.565	4.204	4.382	5.109	5.358	5.179	5.193	60- 70	6.951	807.8	99.6,99.6
80	1.611	1.279	1.097	1.199	1.760	1.688	1.121	1.352	70- 80	3.261	811.1	100,100
90	0.0099	0.0019	0.0097	0.0010	0.0026	0	0	0	80- 90	0.3770	811.4	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): 782.58 lm

%lum = 96.4%

%lamp = 96.4%

Conical surface Flux(130deg): 804.81 lm

%lum = 99.2%

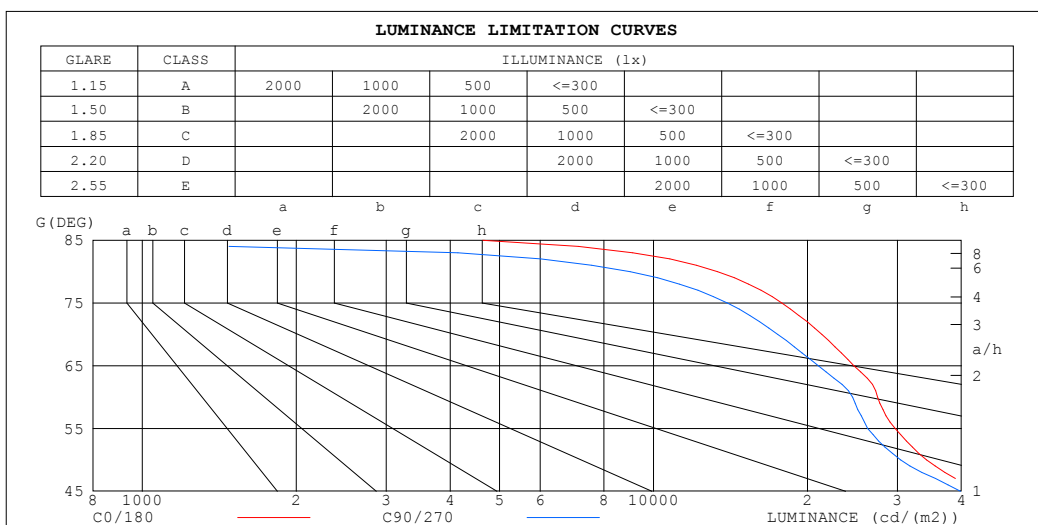
%lamp = 99.2%

C Range: 0 - 360DEG  
 C Interval: 45.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:DAMIN  
 Test Date:2023-09-18

$\gamma$  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:240.4V I:0.0449A P:10.0W PF:0.9311 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.38% KDisp:0.9518 Lamp Flux:811.433x1 lm		
NAME: MD10-10-XX-05 3000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:



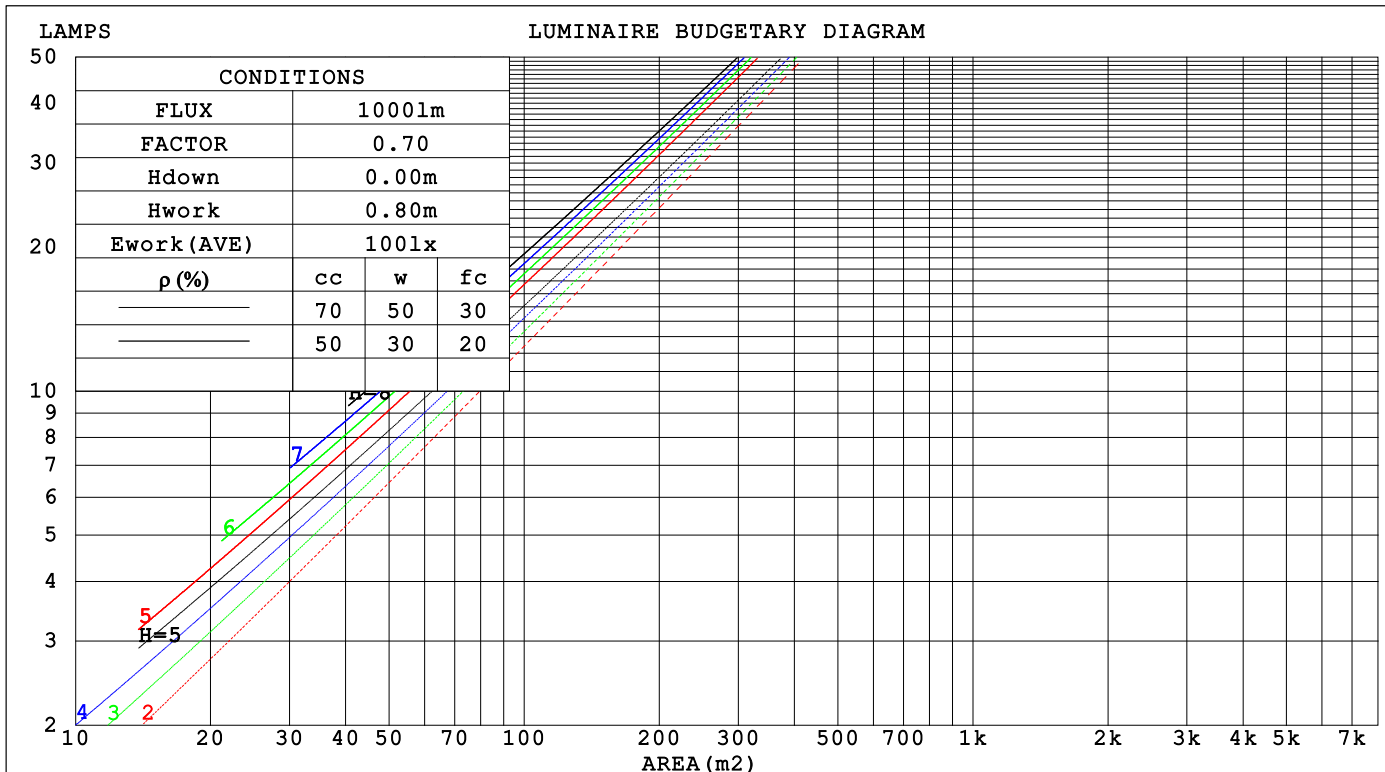
C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DAMIN  
Test Date: 2023-09-18

$\gamma$  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:240.4V I:0.0449A P:10.0W PF:0.9311 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.38% KDisp:0.9518		
Lamp Flux:811.433x1 lm		
NAME: MD10-10-XX-05 3000K RA90 38D	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	1.12	1.09	1.08	1.10	1.08	1.06	1.06	1.04	1.03	1.02	1.01	.00	.98	.98	.97	.95														
2.0	1.05	1.02	.99	1.04	1.00	.98	1.00	.98	.95	.97	.95	.93	.95	.93	.92	.90														
3.0	.99	.95	.92	.98	.94	.91	.96	.92	.90	.93	.90	.88	.91	.89	.87	.85														
4.0	.94	.90	.86	.93	.89	.85	.91	.87	.85	.89	.86	.84	.87	.85	.83	.81														
5.0	.90	.85	.81	.89	.84	.81	.87	.83	.80	.86	.82	.79	.84	.81	.79	.77														
6.0	.86	.81	.77	.85	.80	.77	.83	.79	.76	.82	.79	.76	.81	.78	.75	.74														
7.0	.82	.77	.73	.81	.76	.73	.80	.76	.73	.79	.75	.72	.78	.75	.72	.71														
8.0	.78	.73	.70	.78	.73	.70	.77	.73	.70	.76	.72	.69	.75	.72	.69	.68														
9.0	.75	.70	.67	.75	.70	.67	.74	.70	.67	.73	.69	.66	.72	.69	.66	.65														
10.0	.72	.68	.64	.72	.67	.64	.71	.67	.64	.71	.67	.64	.70	.66	.64	.63														



C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2023-09-18

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 $\gamma$  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:0.0449A P:10.0W PF:0.9311 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.38% KDisp:0.9518		Lamp Flux:811.433x1 lm
NAME: MD10-10-XX-05 3000K RA90 38D	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	.159	.091	.029	.153	.087	.028	.140	.080	.026	.129	.074	.024	.118	.069	.022		
2.0	.150	.082	.025	.145	.080	.025	.134	.075	.023	.125	.070	.022	.116	.065	.021		
3.0	.141	.075	.023	.137	.073	.022	.128	.069	.021	.120	.066	.020	.112	.062	.019		
4.0	.133	.069	.020	.129	.068	.020	.122	.065	.019	.115	.062	.019	.108	.059	.018		
5.0	.126	.064	.019	.123	.063	.018	.116	.061	.018	.110	.058	.017	.105	.056	.017		
6.0	.120	.060	.017	.117	.059	.017	.111	.057	.017	.106	.055	.016	.101	.053	.016		
7.0	.114	.056	.016	.111	.056	.016	.106	.054	.016	.102	.052	.015	.097	.051	.015		
8.0	.109	.053	.015	.107	.052	.015	.102	.051	.015	.098	.050	.014	.094	.048	.014		
9.0	.104	.050	.014	.102	.050	.014	.098	.049	.014	.095	.047	.014	.091	.046	.013		
10.0	.100	.048	.013	.098	.047	.013	.095	.046	.013	.091	.045	.013	.088	.044	.013		

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	.170	.157	.146	.145	.135	.126	.099	.093	.087	.057	.054	.051	.018	.017	.016		
2.0	.153	.133	.115	.131	.114	.100	.090	.079	.069	.052	.046	.041	.017	.015	.013		
3.0	.140	.113	.093	.120	.098	.080	.082	.068	.056	.047	.040	.033	.015	.013	.011		
4.0	.128	.098	.076	.110	.085	.066	.076	.059	.046	.044	.035	.027	.014	.011	.009		
5.0	.119	.086	.063	.102	.075	.055	.070	.052	.038	.041	.031	.023	.013	.010	.008		
6.0	.110	.077	.053	.095	.067	.046	.065	.047	.032	.038	.027	.019	.012	.009	.006		
7.0	.103	.069	.045	.089	.060	.039	.061	.042	.028	.036	.025	.016	.012	.008	.005		
8.0	.097	.062	.039	.084	.054	.034	.058	.038	.024	.034	.022	.014	.011	.007	.005		
9.0	.092	.057	.033	.079	.049	.029	.055	.035	.021	.032	.021	.012	.010	.007	.004		
10.0	.087	.052	.029	.075	.046	.026	.052	.032	.018	.030	.019	.011	.010	.006	.004		

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2023-09-18

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:0.0449A P:10.0W PF:0.9311 Freq:49.99Hz											
UTHDi:0.17% ITHDi:20.38% KDisp:0.9518						Lamp Flux:811.433x1 lm					
NAME: MD10-10-XX-05 3000K RA90 38D						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	2H	19.0	19.8	19.2	19.9	20.1	18.3	19.1	18.5	19.3	19.5
	3H	19.4	20.1	19.6	20.3	20.5	18.7	19.5	19.0	19.7	19.9
	4H	19.6	20.3	19.8	20.5	20.7	18.8	19.5	19.1	19.8	20.0
	6H	19.6	20.3	19.9	20.5	20.8	18.9	19.5	19.2	19.8	20.0
	8H	19.6	20.3	19.9	20.5	20.8	18.8	19.5	19.1	19.7	20.0
	12H	19.6	20.2	19.9	20.5	20.7	18.8	19.4	19.1	19.7	20.0
4H	2H	19.0	19.7	19.3	19.9	20.2	18.5	19.2	18.7	19.4	19.6
	3H	19.6	20.2	19.9	20.5	20.8	19.0	19.6	19.3	19.9	20.1
	4H	19.8	20.4	20.2	20.7	21.0	19.2	19.7	19.5	20.0	20.3
	6H	20.0	20.5	20.3	20.8	21.1	19.3	19.7	19.6	20.1	20.4
	8H	20.0	20.4	20.4	20.8	21.2	19.2	19.7	19.6	20.0	20.4
	12H	19.9	20.4	20.3	20.7	21.1	19.2	19.6	19.6	20.0	20.4
8H	4H	19.8	20.3	20.2	20.6	21.0	19.2	19.7	19.6	20.0	20.4
	6H	20.0	20.4	20.4	20.8	21.2	19.3	19.7	19.7	20.1	20.5
	8H	20.0	20.4	20.5	20.8	21.2	19.3	19.6	19.7	20.0	20.5
	12H	20.0	20.3	20.5	20.7	21.2	19.2	19.5	19.7	20.0	20.4
12H	4H	19.8	20.2	20.2	20.6	21.0	19.2	19.6	19.6	20.0	20.3
	6H	20.0	20.3	20.4	20.7	21.2	19.3	19.6	19.7	20.0	20.5
	8H	20.0	20.3	20.5	20.7	21.2	19.3	19.6	19.7	20.0	20.5
Variations with the observer position at spacings(CIE Pub.117):											
S = 1.0H		+ 1.7 / - 1.5					+ 1.5 / - 1.6				
1.5H		+ 3.2 / - 1.2					+ 2.9 / - 1.3				
2.0H		+ 1.0 / - 0.6					+ 1.0 / - 0.6				

CIE Pub.117, 811.4 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -0.7)  
Area: 0.0007 m2

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2023-09-18

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:0.0449A P:10.0W PF:0.9311 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.38% KDisp:0.9518 Lamp Flux:811.433x1 lm		
NAME: MD10-10-XX-05 3000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:

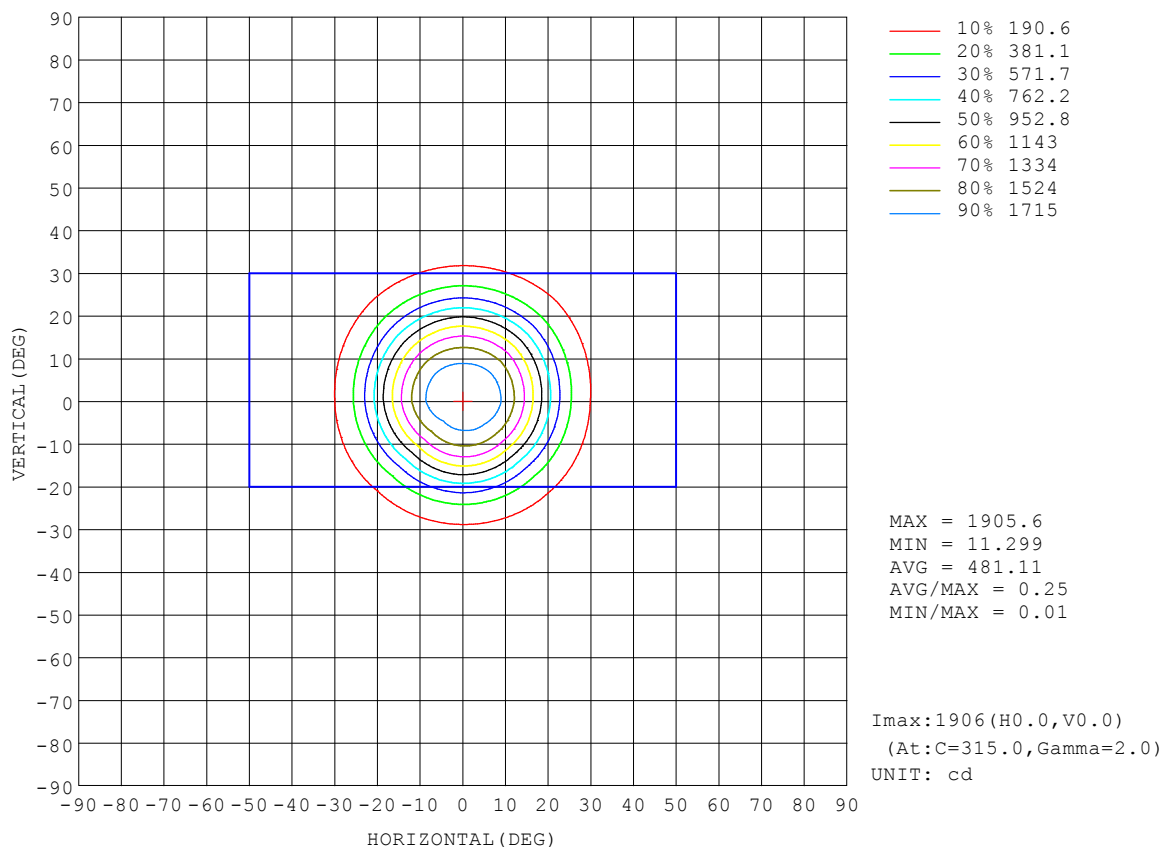
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	88	82	79	88	82	78	87	82	78	75
0.80	96	90	86	95	90	86	94	89	86	82
1.00	100	94	91	99	94	91	97	94	90	86
1.25	104	99	95	103	98	95	101	97	94	90
1.50	106	102	98	105	101	98	103	99	97	92
2.00	109	105	102	107	104	101	105	102	99	94
2.50	110	107	104	109	105	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: 2023-09-18

$\gamma$  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:240.4V I:0.0449A P:10.0W PF:0.9311 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.38% KDisp:0.9518 Lamp Flux:811.433x1 lm		
NAME: MD10-10-XX-05 3000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:



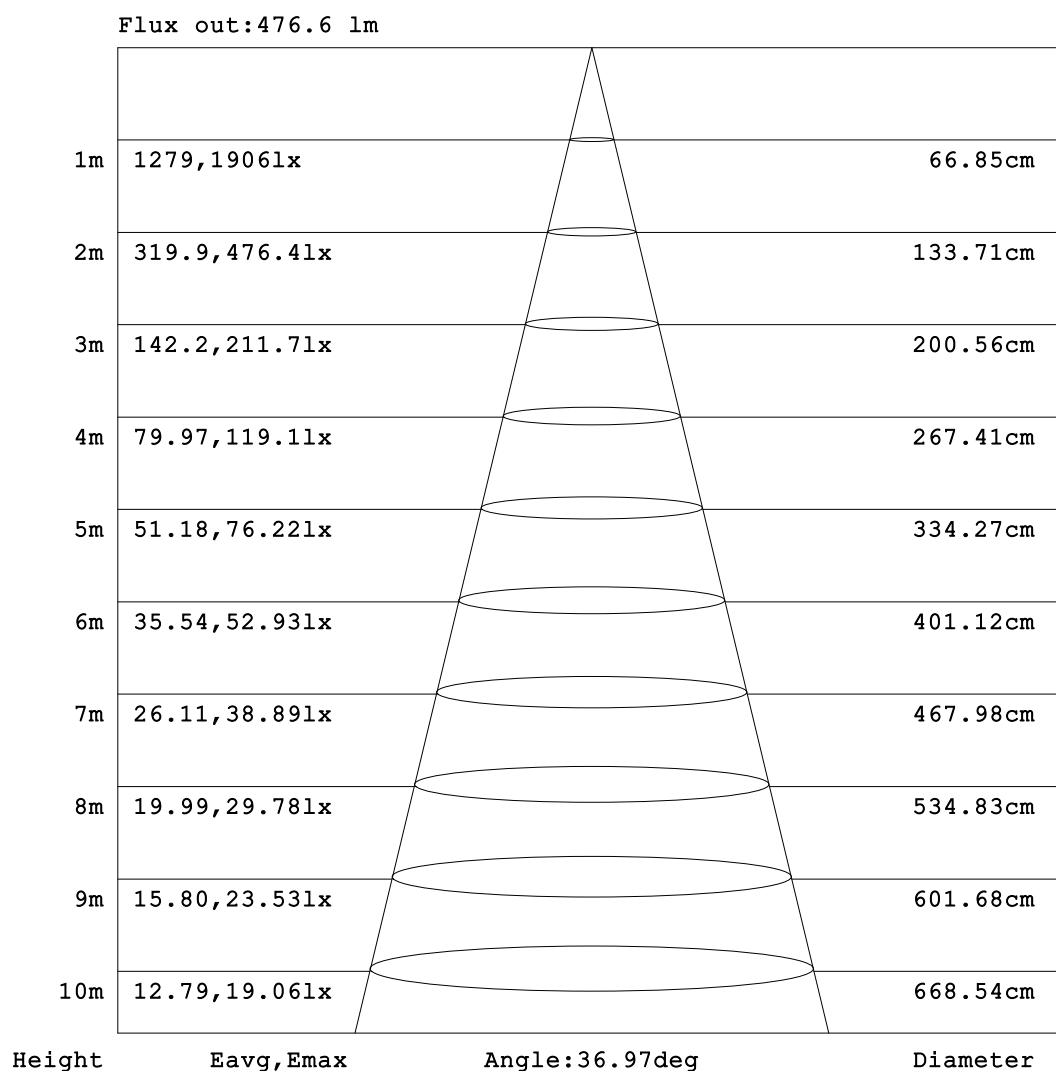
C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2023-09-18

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:0.0449A P:10.0W PF:0.9311 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.38% KDisp:0.9518		Lamp Flux:811.433x1 lm
NAME: MD10-10-XX-05 3000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:



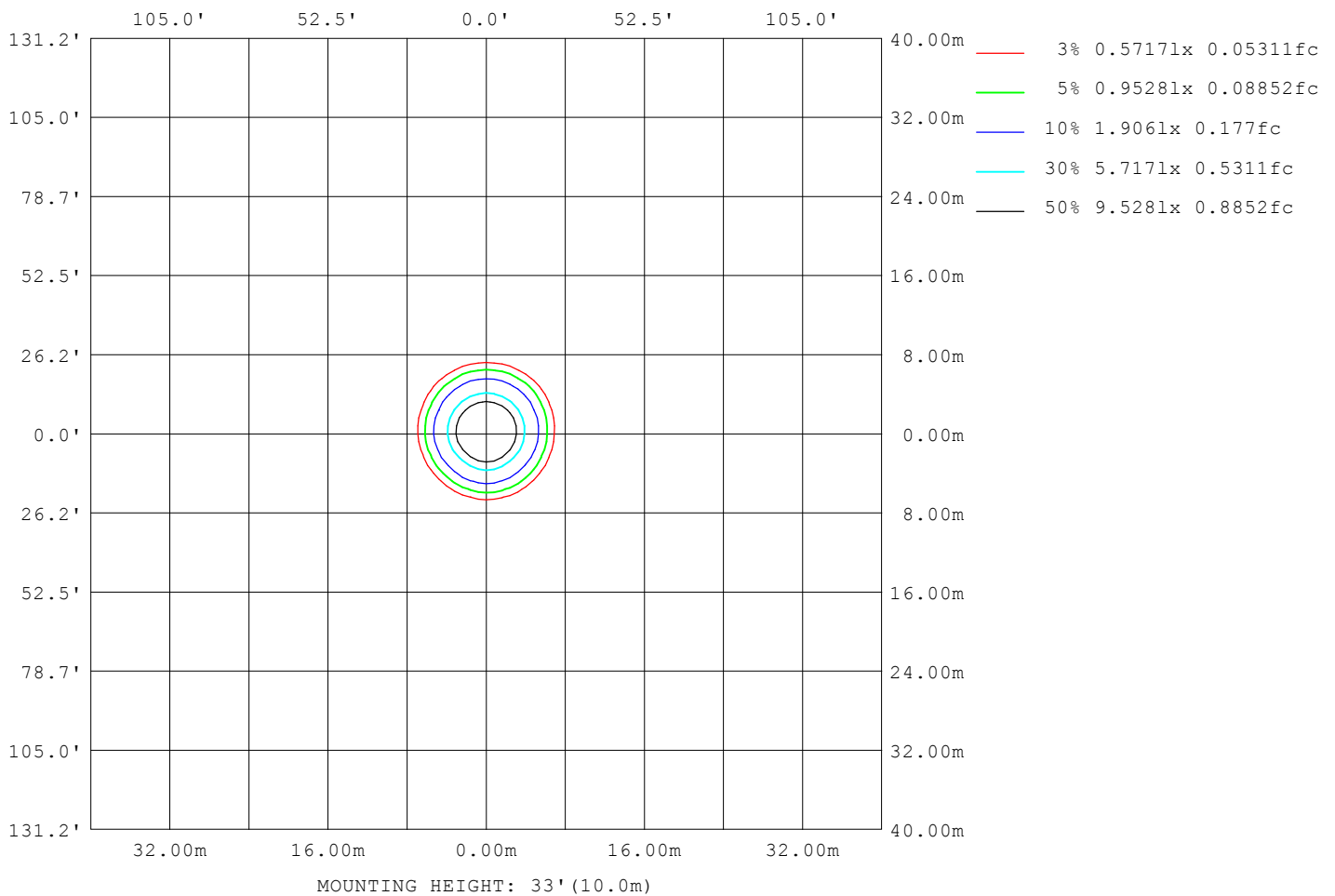
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2023-09-18

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:0.0449A P:10.0W PF:0.9311 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.38% KDisp:0.9518 Lamp Flux:811.433x1 lm		
NAME: MD10-10-XX-05 3000K RA90 38D	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:2023-09-18

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:0.0449A P:10.0W PF:0.9311 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.38% KDisp:0.9518 Lamp Flux:811.433x1 lm		
NAME: MD10-10-XX-05 3000K RA90 38D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:

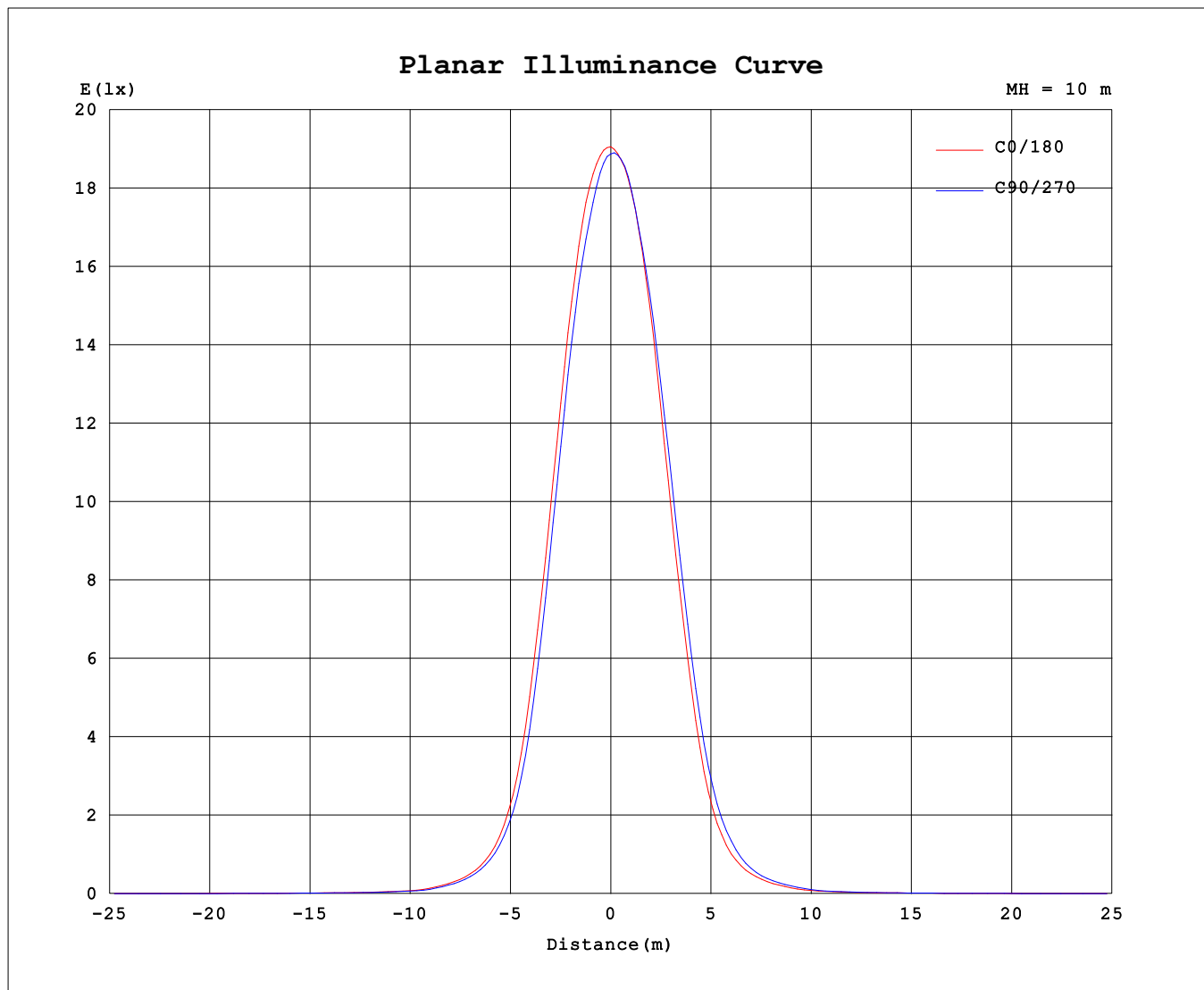
AvgL	cd/m2
L_0~180 (65) av	24336
L_0~180 (75) av	18053
L_0~180 (85) av	5482
L_90~270 (65) av	23052
L_90~270 (75) av	15880
L_90~270 (85) av	255
L_45 (65) av	23647
L_45 (75) av	17050
L_45 (85) av	624

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2023-09-18

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: 2023-09-18

$\gamma$  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:

```