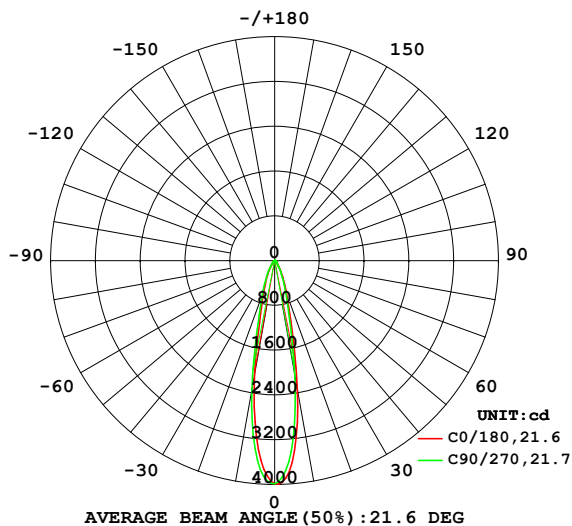


## LUMINAIRE PHOTOMETRIC TEST REPORT

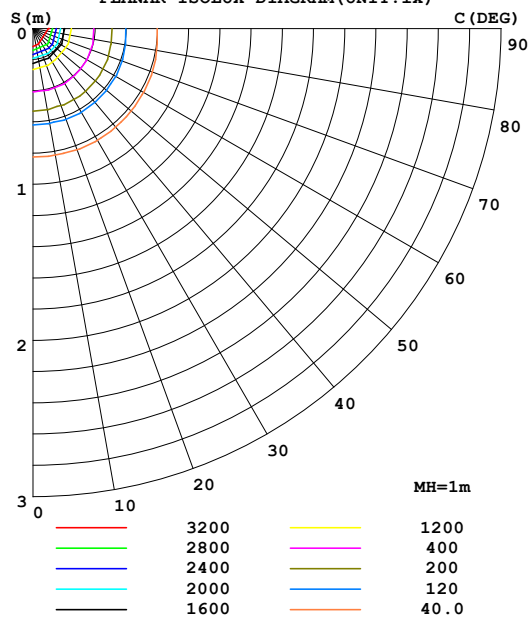
Test:U:240.4V I:0.0445A P:10.0W PF:0.9312 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.22% KDisp:0.9486 Lamp Flux:917.342x1 lm		
NAME: MD10-10-XX-03 3000K RA90 24D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 91.98 lm/W
MODEL		I <sub>max</sub> (cd)	3993	S/MH (C0/180)		0.36
NOMINAL POWER(W)	10	LOR (%)	100.0	S/MH (C90/270)		0.39
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	917.34	η UP,DN (C0-180)		0.0,49.3
NOMINAL FLUX(lm)	917.342	CIE CLASS	DIRECT	η UP,DN (C180-360)		0.0,50.7
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM		0.00
TEST VOLTAGE(V)	240.4	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	2356	2282	2090	2030	2088	2169	2364	2427	0- 10	291.7	291.7	31.8,31.8
20	619.0	596.7	554.8	536.1	558.4	584.0	635.7	631.0	10- 20	311.4	603.1	65.7,65.7
30	227.2	226.2	203.3	201.9	202.9	219.5	234.1	239.0	20- 30	168.2	771.3	84.1,84.1
40	80.22	82.03	71.26	68.58	66.99	75.80	81.51	84.67	30- 40	83.37	854.7	93.2,93.2
50	29.06	30.05	26.09	23.80	22.84	26.12	28.74	29.93	40- 50	35.97	890.6	97.1,97.1
60	11.24	12.12	10.45	9.433	9.313	10.63	11.31	11.60	50- 60	15.70	906.3	98.8,98.8
70	4.875	5.247	4.801	4.601	4.591	5.110	5.223	5.170	60- 70	7.307	913.6	99.6,99.6
80	1.522	1.648	1.497	1.602	1.635	1.236	0.7466	0.9965	70- 80	3.360	917.0	100,100
90	0.0125	0.0026	0.0180	0.0026	0.0035	0.0022	0.0074	0.0035	80- 90	0.3318	917.3	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): 876.53 lm

%lum = 95.6%

%lamp = 95.6%

Conical surface Flux(130deg): 910.61 lm

%lum = 99.3%

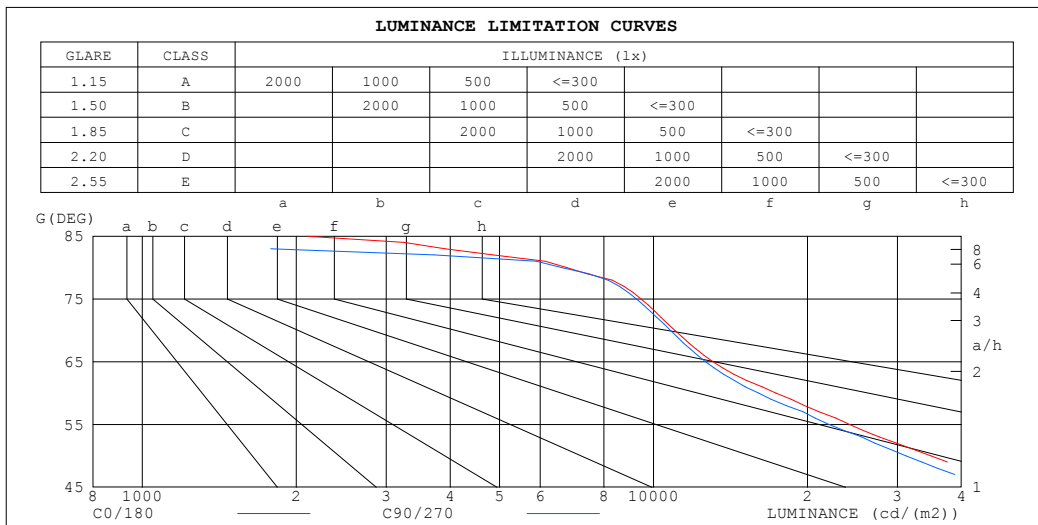
%lamp = 99.3%

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:240.4V I:0.0445A P:10.0W PF:0.9312 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.22% KDisp:0.9486 Lamp Flux:917.342x1 lm		
NAME: MD10-10-XX-03 3000K RA90 24D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	2105	228
80	6771	6624
75	9458	9265
70	11008	10785
65	13071	12656
60	17362	16061
55	24189	22058
50	34911	31188
45	52298	45840

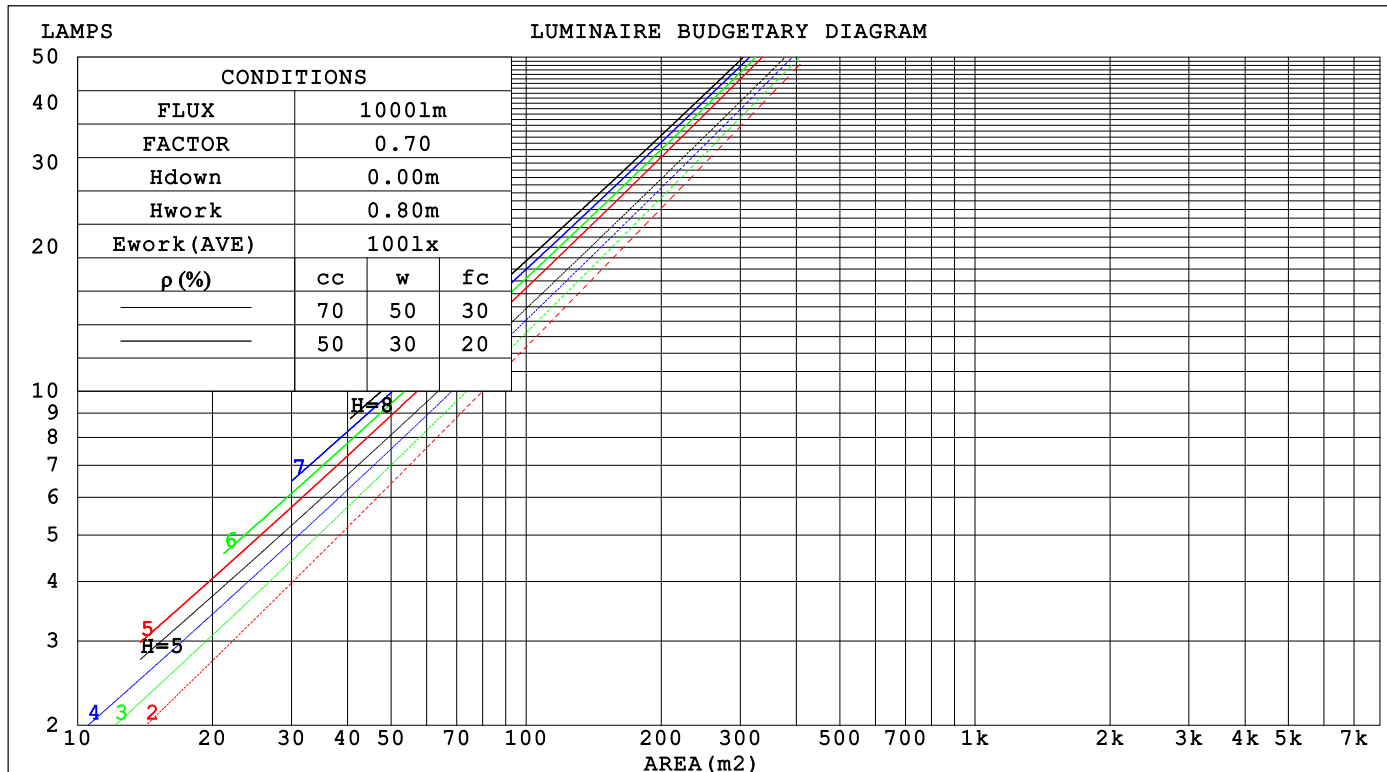
C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DAMIN  
Test Date: 2023-09-14

$\gamma$  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:240.4V I:0.0445A P:10.0W PF:0.9312 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.22% KDisp:0.9486		
Lamp Flux:917.342x1 lm		
NAME: MD10-10-XX-03 3000K RA90 24D	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	1.10	1.08	1.10	1.08	1.06	1.06	1.04	1.03	1.02	1.01	.00	.99	.98	.97	.95
2.0	1.06	1.02	.99	1.04	1.01	.98	1.01	.98	.96	.98	.96	.94	.95	.94	.92	.91
3.0	1.00	.96	.93	.99	.95	.92	.96	.93	.91	.94	.91	.89	.92	.90	.88	.87
4.0	.95	.91	.87	.94	.90	.87	.92	.89	.86	.90	.87	.85	.89	.86	.84	.83
5.0	.91	.86	.83	.90	.86	.83	.89	.85	.82	.87	.84	.81	.86	.83	.81	.79
6.0	.87	.83	.79	.87	.82	.79	.85	.81	.78	.84	.80	.78	.83	.80	.77	.76
7.0	.84	.79	.76	.83	.79	.76	.82	.78	.75	.81	.77	.75	.80	.77	.74	.73
8.0	.81	.76	.73	.80	.76	.73	.79	.75	.72	.78	.75	.72	.77	.74	.72	.71
9.0	.78	.73	.70	.78	.73	.70	.77	.73	.70	.76	.72	.70	.75	.72	.69	.68
10.0	.75	.71	.68	.75	.71	.68	.74	.70	.68	.74	.70	.67	.73	.70	.67	.66



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:240.4V I:0.0445A P:10.0W PF:0.9312 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.22% KDisp:0.9486 Lamp Flux:917.342x1 lm		
NAME: MD10-10-XX-03 3000K RA90 24D	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	.154	.088	.028	.147	.084	.027	.135	.077	.025	.123	.071	.023	.113	.065	.021		
2.0	.145	.079	.024	.139	.077	.024	.129	.072	.022	.119	.067	.021	.111	.063	.020		
3.0	.136	.072	.022	.131	.070	.021	.123	.066	.020	.115	.063	.019	.107	.059	.018		
4.0	.128	.066	.020	.124	.065	.019	.117	.062	.018	.110	.059	.018	.103	.056	.017		
5.0	.121	.061	.018	.117	.060	.018	.111	.058	.017	.105	.055	.016	.099	.053	.016		
6.0	.114	.057	.016	.111	.056	.016	.106	.054	.016	.101	.052	.015	.096	.050	.015		
7.0	.108	.054	.015	.106	.053	.015	.101	.051	.015	.096	.049	.014	.092	.048	.014		
8.0	.103	.050	.014	.101	.050	.014	.097	.048	.014	.093	.047	.014	.089	.046	.013		
9.0	.098	.048	.013	.096	.047	.013	.093	.046	.013	.089	.045	.013	.086	.044	.013		
10.0	.094	.045	.013	.092	.045	.012	.089	.044	.012	.086	.043	.012	.083	.042	.012		

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	.158	.147	.145	.135	.126	.099	.093	.087	.057	.054	.051	.018	.017	.016		
2.0	.153	.133	.116	.131	.114	.100	.090	.079	.070	.052	.046	.041	.017	.015	.013		
3.0	.139	.113	.093	.119	.098	.081	.082	.068	.057	.047	.040	.033	.015	.013	.011		
4.0	.127	.098	.076	.109	.085	.066	.075	.059	.047	.043	.035	.028	.014	.011	.009		
5.0	.117	.086	.063	.101	.075	.055	.069	.052	.039	.040	.031	.023	.013	.010	.008		
6.0	.109	.076	.053	.093	.066	.047	.064	.046	.033	.037	.027	.020	.012	.009	.006		
7.0	.101	.069	.046	.087	.059	.040	.060	.042	.028	.035	.025	.017	.011	.008	.006		
8.0	.095	.062	.039	.082	.054	.034	.057	.038	.024	.033	.022	.014	.011	.007	.005		
9.0	.089	.056	.034	.077	.049	.030	.053	.034	.021	.031	.020	.013	.010	.007	.004		
10.0	.084	.052	.030	.073	.045	.026	.050	.032	.019	.029	.019	.011	.010	.006	.004		

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

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:240.4V I:0.0445A P:10.0W PF:0.9312 Freq:49.99Hz UTHDi:0.17% ITHDi:20.22% KDisp:0.9486 Lamp Flux:917.342x1 lm										
NAME: MD10-10-XX-03 3000K RA90 24D					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	19.7	20.4	19.9	20.6	20.7	19.2	20.0	19.5	20.2	20.3
3H	19.8	20.5	20.0	20.7	20.8	19.4	20.1	19.6	20.3	20.4
4H	19.8	20.5	20.1	20.7	20.9	19.4	20.1	19.7	20.3	20.5
6H	19.8	20.4	20.1	20.6	20.9	19.4	20.0	19.7	20.3	20.5
8H	19.7	20.4	20.0	20.6	20.9	19.4	20.0	19.7	20.2	20.5
12H	19.7	20.3	20.0	20.6	20.8	19.3	19.9	19.6	20.2	20.4
4H 2H	19.6	20.3	19.9	20.5	20.7	19.2	19.9	19.5	20.1	20.3
3H	19.8	20.4	20.1	20.6	20.9	19.4	20.0	19.7	20.3	20.5
4H	19.9	20.4	20.2	20.7	21.0	19.5	20.0	19.8	20.3	20.6
6H	19.9	20.4	20.3	20.7	21.0	19.5	20.0	19.9	20.3	20.7
8H	19.9	20.3	20.2	20.6	21.0	19.5	19.9	19.9	20.3	20.7
12H	19.8	20.2	20.2	20.6	21.0	19.5	19.9	19.9	20.2	20.6
8H 4H	19.8	20.3	20.2	20.6	21.0	19.5	19.9	19.9	20.3	20.6
6H	19.9	20.2	20.3	20.6	21.0	19.5	19.9	19.9	20.3	20.7
8H	19.8	20.2	20.3	20.6	21.0	19.5	19.8	19.9	20.2	20.7
12H	19.8	20.1	20.2	20.5	21.0	19.4	19.7	19.9	20.1	20.6
12H 4H	19.8	20.2	20.2	20.5	20.9	19.4	19.8	19.8	20.2	20.6
6H	19.8	20.1	20.3	20.6	21.0	19.5	19.8	19.9	20.2	20.7
8H	19.8	20.1	20.3	20.5	21.0	19.4	19.7	19.9	20.2	20.6
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 1.7 / - 2.8					+ 1.6 / - 2.6				
1.5H	+ 2.7 / - 2.1					+ 2.3 / - 2.0				
2.0H	+ 3.0 / - 2.3					+ 2.7 / - 2.1				

CIE Pub.117, 917.3 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -0.3)  
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:240.4V I:0.0445A P:10.0W PF:0.9312 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.22% KDisp:0.9486 Lamp Flux:917.342x1 lm		
NAME: MD10-10-XX-03 3000K RA90 24D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:

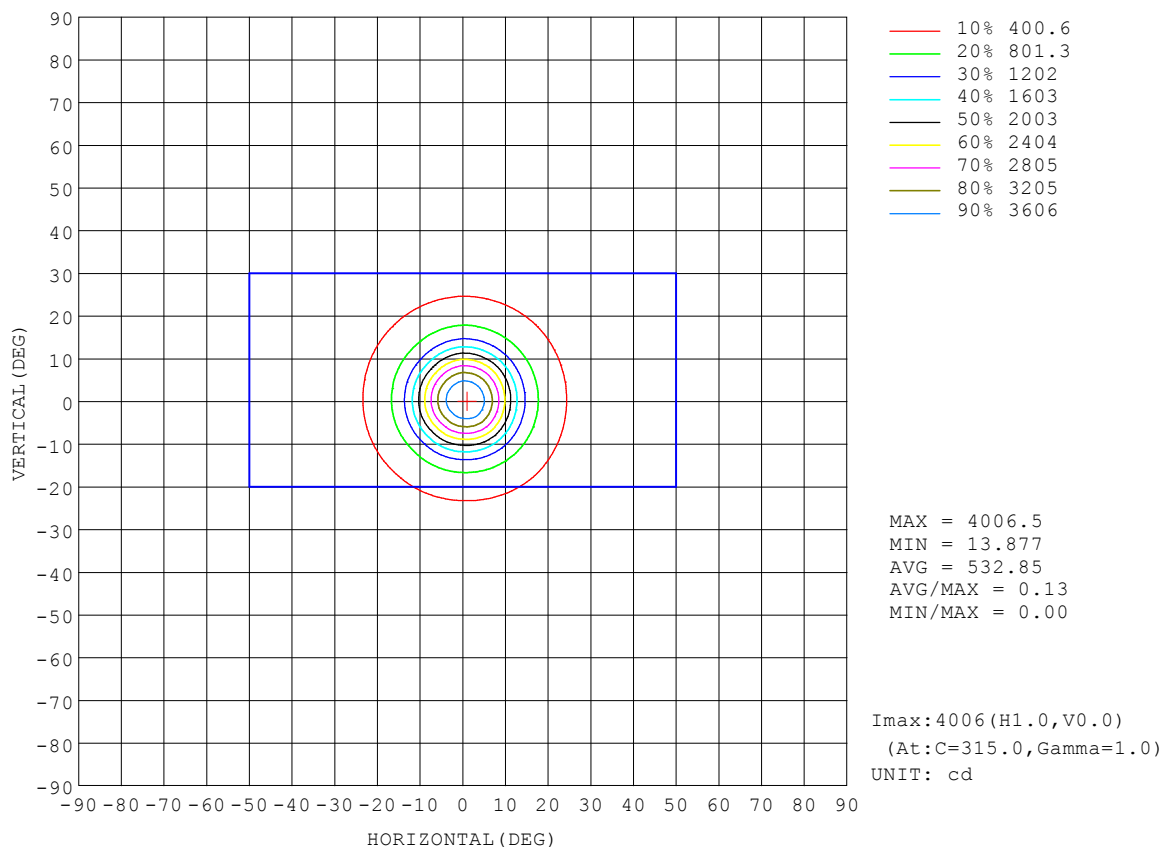
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	87	81	77	87	81	77	86	80	77	73
0.80	95	89	85	94	88	85	93	88	85	81
1.00	99	94	90	98	93	90	97	93	89	85
1.25	103	98	94	102	97	94	100	96	93	89
1.50	106	101	98	105	100	97	102	99	96	92
2.00	108	104	101	107	103	100	104	101	99	94
2.50	110	106	103	109	105	102	105	103	101	95
3.00	112	108	106	110	107	105	107	104	102	96
4.00	114	111	109	112	109	107	108	106	105	98
5.00	115	113	111	113	111	109	109	108	106	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:240.4V I:0.0445A P:10.0W PF:0.9312 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.22% KDisp:0.9486 Lamp Flux:917.342x1 lm		
NAME: MD10-10-XX-03 3000K RA90 24D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:

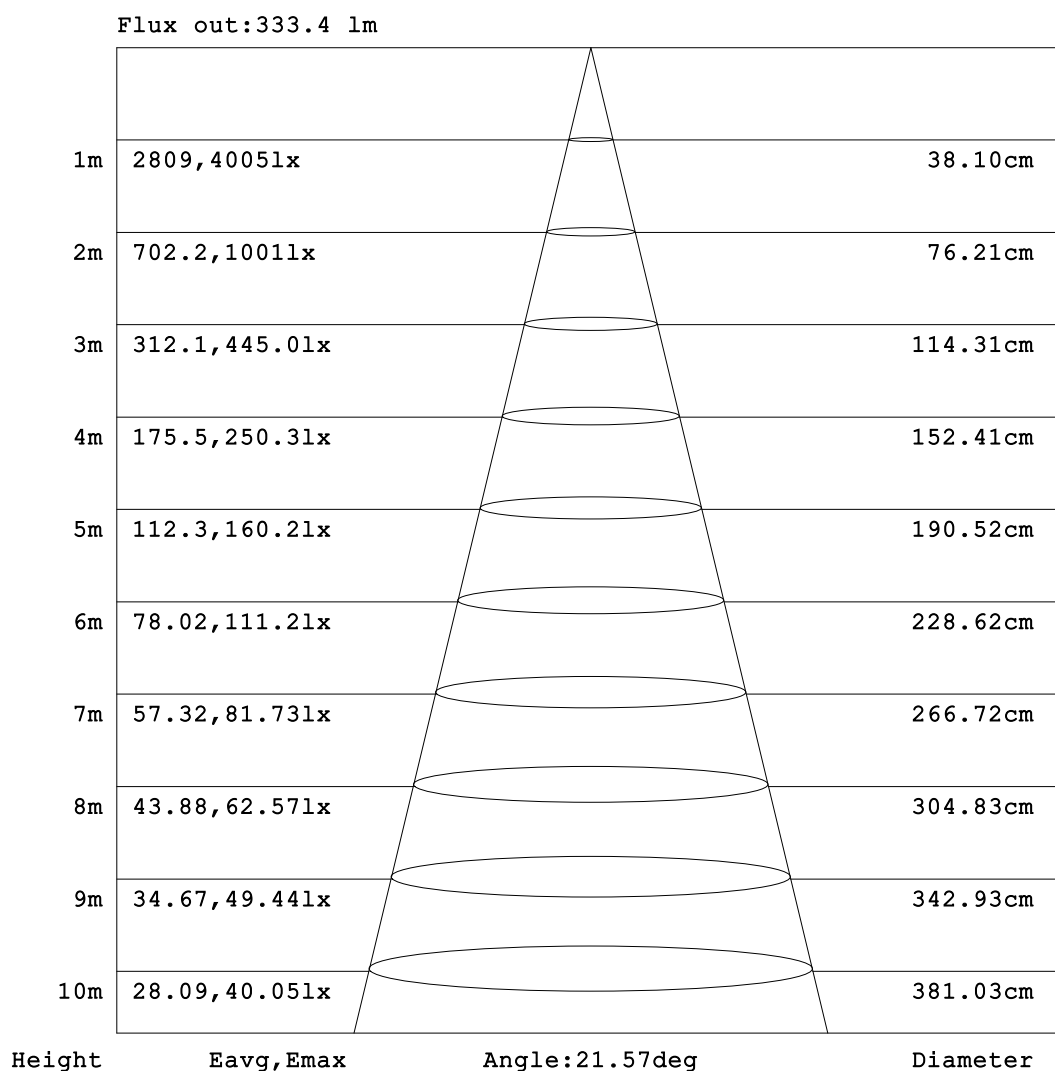


C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DAMIN  
Test Date: 2023-09-14

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:240.4V I:0.0445A P:10.0W PF:0.9312 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.22% KDisp:0.9486 Lamp Flux:917.342x1 lm		
NAME: MD10-10-XX-03 3000K RA90 24D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:



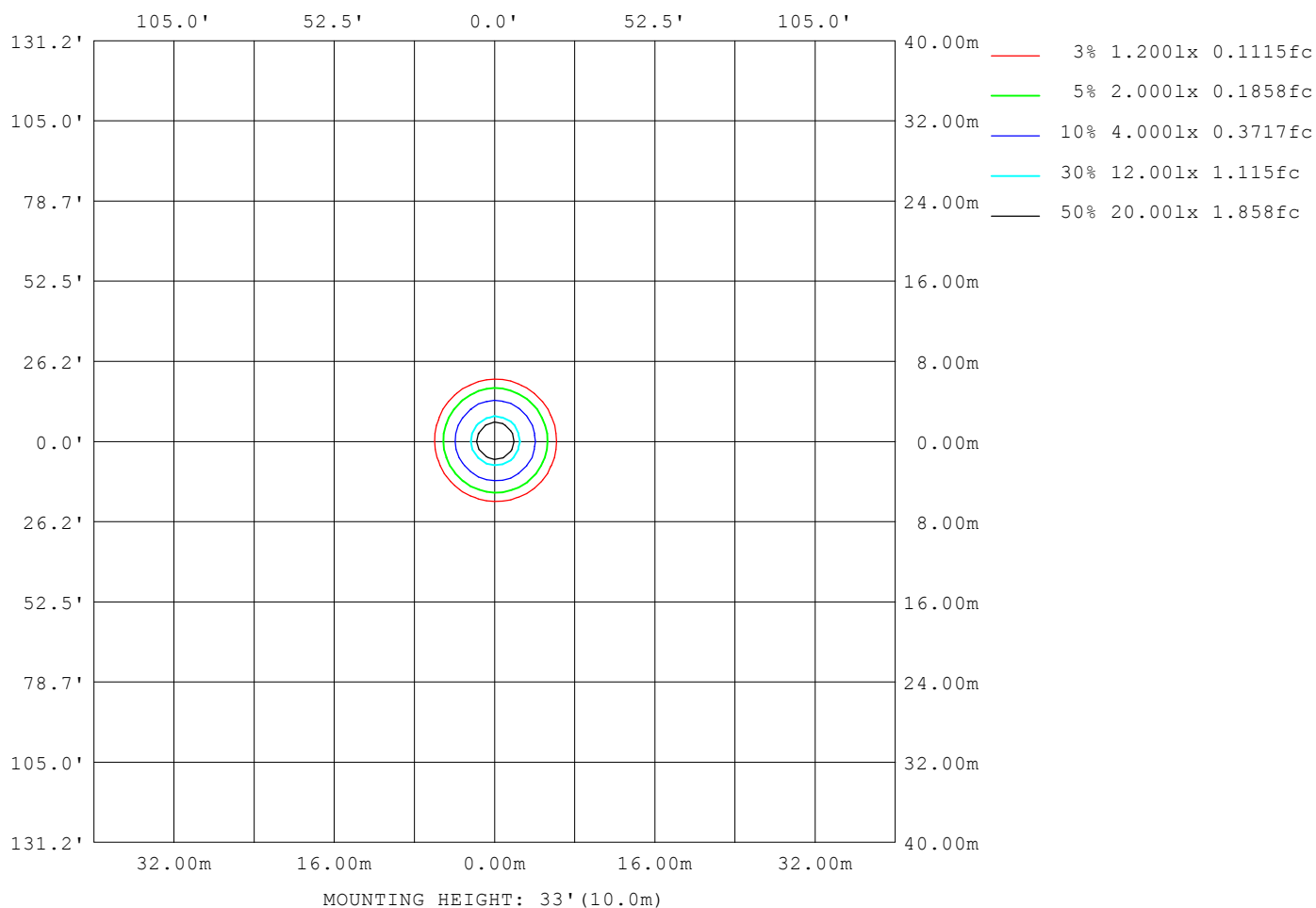
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:240.4V I:0.0445A P:10.0W PF:0.9312 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.22% KDisp:0.9486 Lamp Flux:917.342x1 lm		
NAME: MD10-10-XX-03 3000K RA90 24D	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:240.4V I:0.0445A P:10.0W PF:0.9312 Freq:49.99Hz		
UTHDi:0.17% ITHDi:20.22% KDisp:0.9486 Lamp Flux:917.342x1 lm		
NAME: MD10-10-XX-03 3000K RA90 24D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:

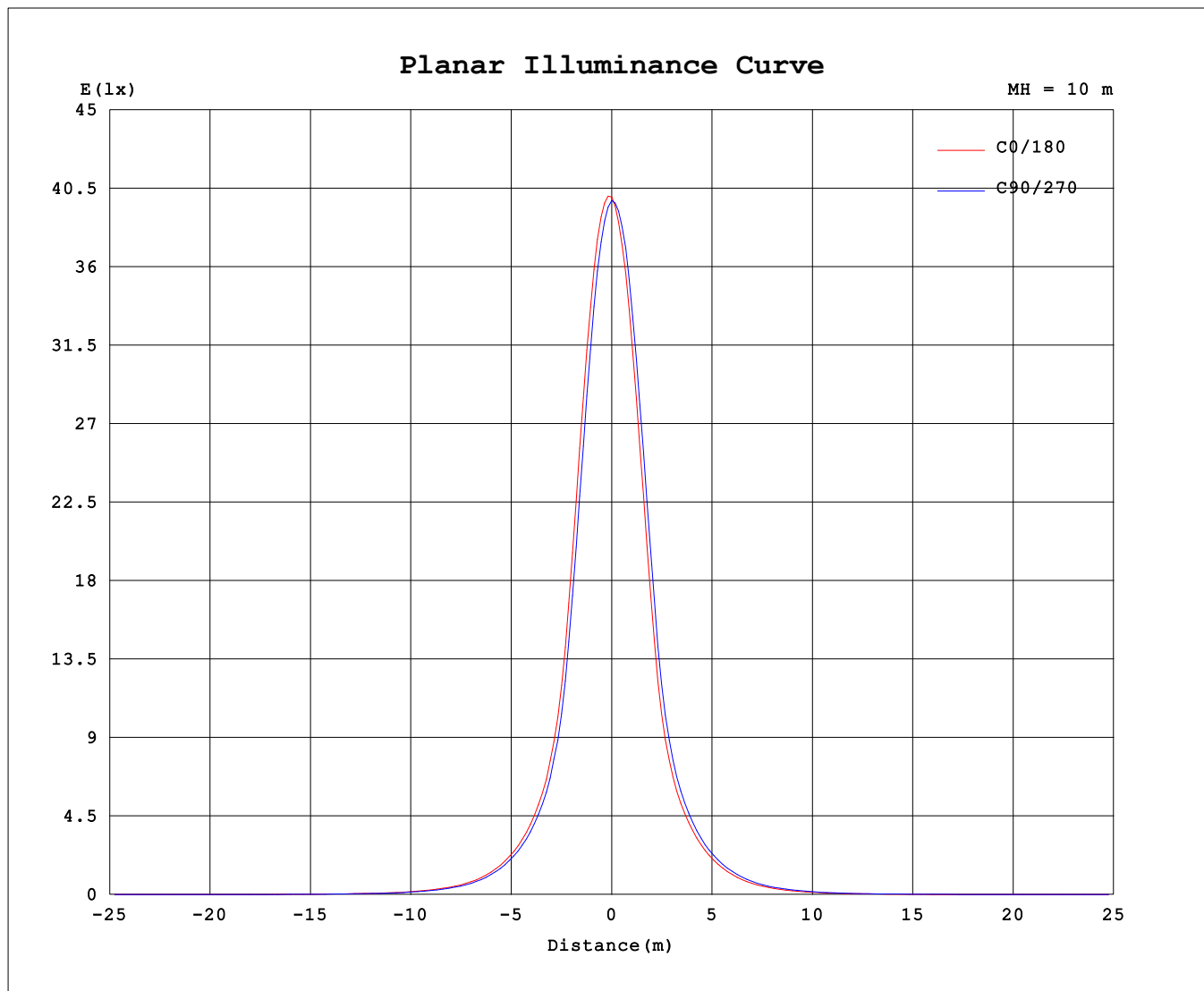
AvgL	cd/m2
L_0~180 (65) av	12439
L_0~180 (75) av	9225
L_0~180 (85) av	2348
L_90~270 (65) av	13224
L_90~270 (75) av	9575
L_90~270 (85) av	172
L_45 (65) av	13263
L_45 (75) av	9767
L_45 (85) av	185

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:

```