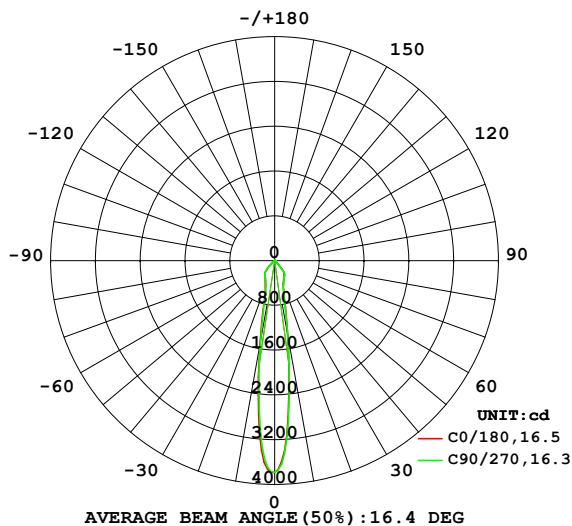


## LUMINAIRE PHOTOMETRIC TEST REPORT

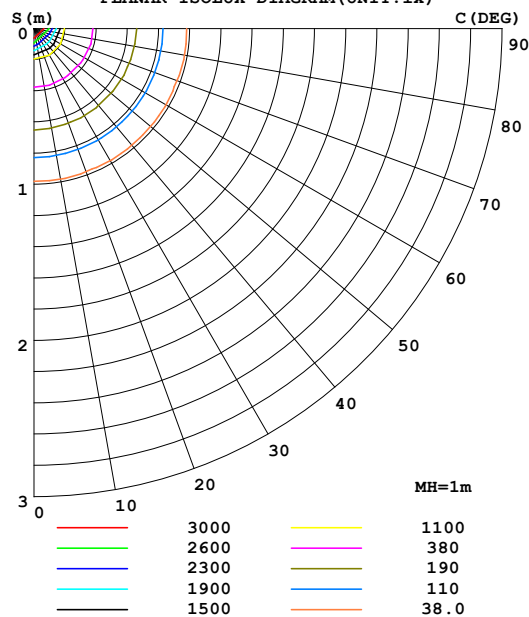
Test:U:240.5V I:0.0447A P:10.0W PF:0.9304 Freq:49.99Hz		
UTHDi:0.28% ITHDi:19.99% KDisp:0.9519 Lamp Flux:900.493x1 lm		
NAME: MD10-10-XX-02 3000K RA90 15D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 89.95 lm/W
MODEL		I <sub>max</sub> (cd)	3786	S/MH (C0/180)	0.30	
NOMINAL POWER(W)	10	LOR (%)	100.0	S/MH (C90/270)	0.29	
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	900.49	η UP,DN (C0-180)	0.0,49.0	
NOMINAL FLUX(lm)	900.493	CIE CLASS	DIRECT	η UP,DN (C180-360)	0.0,51.0	
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.00	
TEST VOLTAGE(V)	240.40	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	1362	1344	1353	1440	1524	1518	1472	1392	0- 10	227.4	227.4	25.2,25.2
20	461.1	468.0	467.9	478.7	486.3	474.8	466.0	464.8	10- 20	205.2	432.6	48,48
30	340.4	339.6	346.1	341.1	344.4	346.9	344.8	343.8	20- 30	182.6	615.2	68.3,68.3
40	229.7	225.2	229.2	245.6	252.1	253.3	249.3	237.0	30- 40	190.4	805.5	89.5,89.5
50	13.65	14.80	15.83	19.31	16.46	16.07	13.88	12.19	40- 50	80.61	886.2	98.4,98.4
60	4.240	4.201	4.285	4.745	4.647	4.487	4.115	4.336	50- 60	6.658	892.8	99.1,99.1
70	3.237	3.189	3.208	3.544	3.535	3.413	3.038	3.255	60- 70	3.725	896.5	99.6,99.6
80	2.233	2.287	2.333	2.501	2.620	2.458	1.900	2.110	70- 80	3.032	899.6	99.9,99.9
90	0.0167	0.0029	0.0135	0.0042	0.0022	0.0032	0.0077	0.0019	80- 90	0.9230	900.5	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): 868.01 lm

%lum = 96.4%

%lamp = 96.4%

Conical surface Flux(130deg): 894.77 lm

%lum = 99.4%

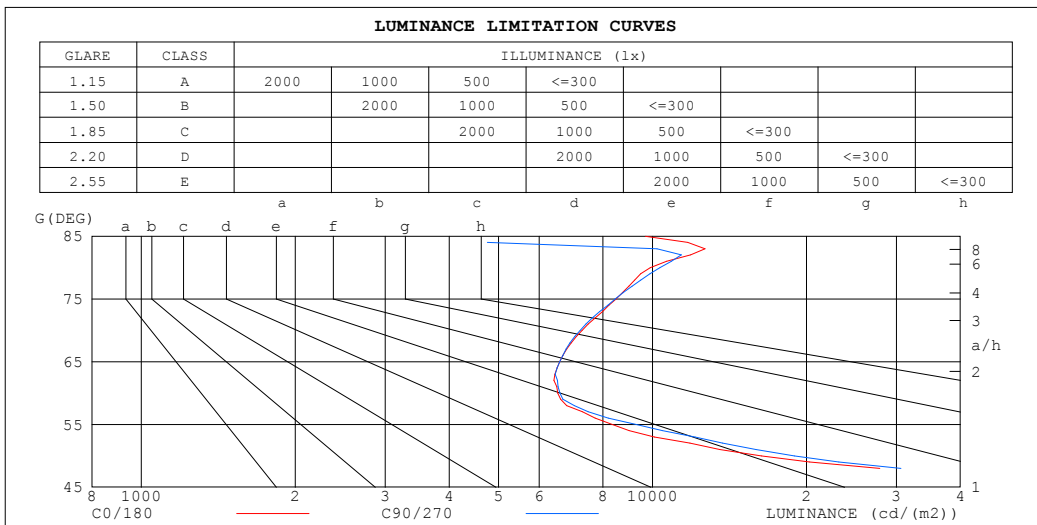
%lamp = 99.4%

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:240.5V I:0.0447A P:10.0W PF:0.9304 Freq:49.99Hz		
UTHDi:0.28% ITHDi:19.99% KDisp:0.9519 Lamp Flux:900.493x1 lm		
NAME: MD10-10-XX-02 3000K RA90 15D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	9684	360
80	9893	10335
75	8484	8451
70	7280	7213
65	6580	6586
60	6523	6591
55	8346	9309
50	16333	18935
45	91607	92114

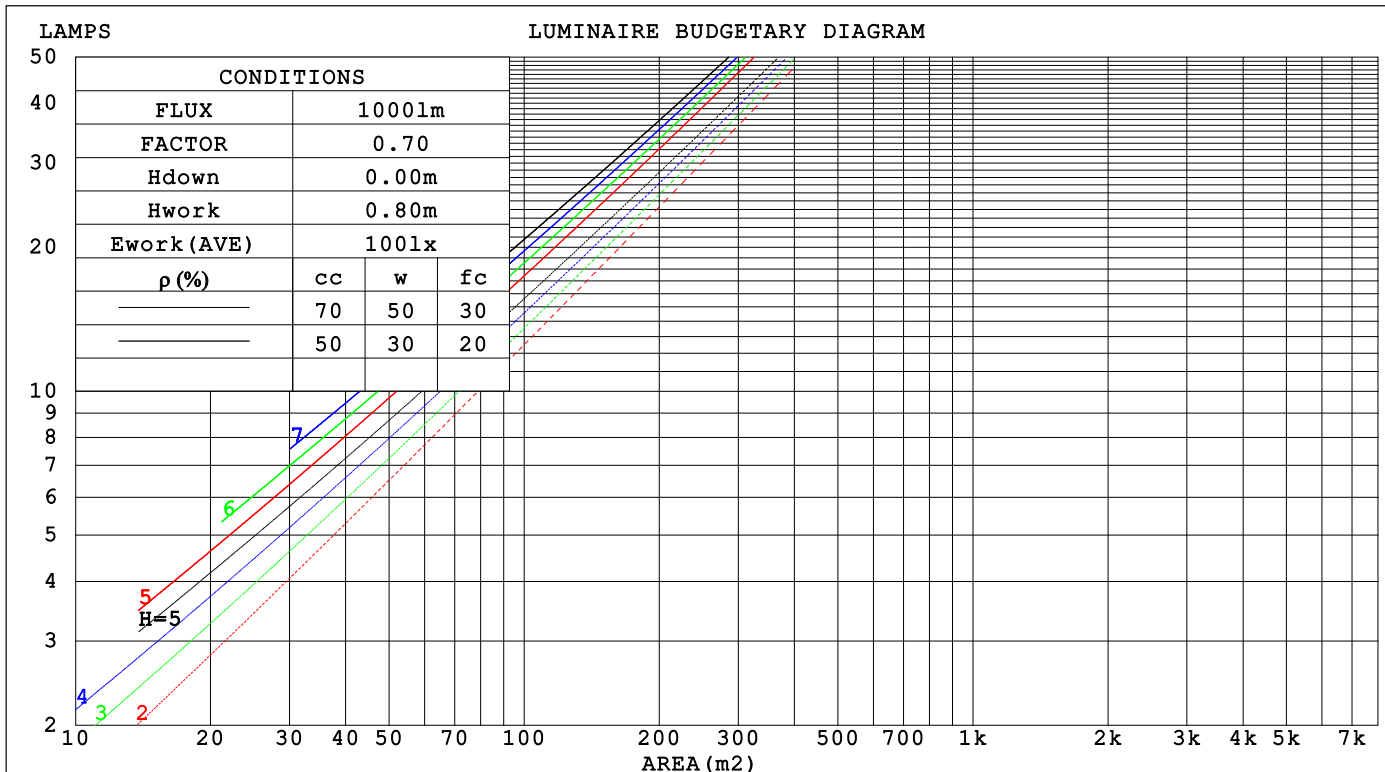
C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2023-09-14

$\gamma$  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:240.5V I:0.0447A P:10.0W PF:0.9304 Freq:49.99Hz		
UTHDi:0.28% ITHDi:19.99% KDisp:0.9519		
Lamp Flux:900.493x1 lm		
NAME: MD10-10-XX-02 3000K 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															



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:240.5V I:0.0447A P:10.0W PF:0.9304 Freq:49.99Hz			UTHDi:0.28% ITHDi:19.99% KDisp:0.9519			Lamp Flux:900.493x1 lm		
NAME: MD10-10-XX-02 3000K 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	.171	.097	.031	.164	.093	.030	.151	.087	.028	.140	.081	.026	.129	.075	.024		
2.0	.163	.089	.027	.157	.086	.027	.146	.081	.025	.137	.077	.024	.128	.072	.023		
3.0	.154	.082	.025	.149	.080	.024	.140	.076	.023	.132	.072	.022	.124	.069	.021		
4.0	.146	.076	.022	.142	.074	.022	.134	.071	.021	.127	.068	.021	.121	.066	.020		
5.0	.139	.071	.020	.135	.069	.020	.129	.067	.020	.122	.065	.019	.117	.062	.019		
6.0	.132	.066	.019	.129	.065	.019	.123	.063	.018	.118	.061	.018	.112	.059	.018		
7.0	.126	.062	.018	.123	.061	.017	.118	.060	.017	.113	.058	.017	.108	.056	.017		
8.0	.120	.059	.016	.117	.058	.016	.113	.056	.016	.109	.055	.016	.105	.054	.016		
9.0	.114	.055	.015	.112	.055	.015	.108	.053	.015	.104	.052	.015	.101	.051	.015		
10.0	.109	.052	.015	.108	.052	.014	.104	.051	.014	.100	.050	.014	.097	.049	.014		

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	.171	.157	.145	.146	.135	.125	.100	.093	.087	.057	.054	.050	.018	.017	.016		
2.0	.155	.133	.114	.133	.114	.098	.091	.079	.069	.052	.046	.040	.017	.015	.013		
3.0	.142	.114	.091	.122	.098	.079	.084	.068	.055	.048	.040	.033	.016	.013	.011		
4.0	.131	.099	.074	.113	.085	.064	.078	.059	.045	.045	.035	.027	.014	.011	.009		
5.0	.122	.087	.061	.105	.075	.053	.072	.053	.037	.042	.031	.022	.014	.010	.007		
6.0	.115	.078	.051	.098	.067	.044	.068	.047	.031	.039	.028	.019	.013	.009	.006		
7.0	.108	.070	.043	.093	.061	.038	.064	.042	.027	.037	.025	.016	.012	.008	.005		
8.0	.102	.063	.037	.088	.055	.032	.061	.039	.023	.035	.023	.014	.011	.007	.005		
9.0	.096	.058	.032	.083	.050	.028	.058	.035	.020	.034	.021	.012	.011	.007	.004		
10.0	.092	.054	.028	.079	.047	.025	.055	.033	.018	.032	.019	.010	.010	.006	.003		

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:240.5V I:0.0447A P:10.0W PF:0.9304 Freq:49.99Hz UTHDi:0.28% ITHDi:19.99% KDisp:0.9519Lamp Flux:900.493x1 lm										
NAME: MD10-10-XX-02 3000K 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	24.0	24.9	24.2	25.0	25.2	24.0	24.9	24.2	25.1	25.2
3H	23.8	24.7	24.1	24.9	25.1	23.9	24.7	24.1	24.9	25.1
4H	23.8	24.6	24.1	24.8	25.0	23.8	24.6	24.1	24.8	25.0
6H	23.7	24.5	24.0	24.7	24.9	23.8	24.5	24.0	24.7	25.0
8H	23.7	24.4	24.0	24.7	24.9	23.7	24.4	24.0	24.7	24.9
12H	23.7	24.4	24.0	24.6	24.9	23.7	24.4	24.0	24.6	24.9
4H 2H	23.7	24.5	24.0	24.7	25.0	23.8	24.5	24.0	24.8	25.0
3H	23.6	24.3	23.9	24.5	24.8	23.6	24.3	23.9	24.6	24.8
4H	23.5	24.2	23.9	24.5	24.8	23.6	24.2	23.9	24.5	24.8
6H	23.5	24.0	23.9	24.4	24.7	23.5	24.1	23.9	24.4	24.8
8H	23.5	24.0	23.9	24.4	24.7	23.5	24.0	23.9	24.4	24.7
12H	23.5	23.9	23.9	24.3	24.7	23.5	23.9	23.9	24.3	24.7
8H 4H	23.4	23.9	23.8	24.3	24.6	23.5	23.9	23.8	24.3	24.7
6H	23.4	23.8	23.8	24.2	24.6	23.4	23.8	23.9	24.2	24.7
8H	23.4	23.8	23.9	24.2	24.6	23.5	23.8	23.9	24.2	24.7
12H	23.4	23.7	23.9	24.2	24.6	23.4	23.7	23.9	24.2	24.6
12H 4H	23.4	23.8	23.8	24.2	24.6	23.4	23.9	23.8	24.2	24.6
6H	23.4	23.7	23.8	24.1	24.6	23.4	23.8	23.8	24.2	24.6
8H	23.4	23.7	23.9	24.2	24.6	23.4	23.7	23.9	24.2	24.6
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 2.5 / - 9.3					+ 2.5 / - 9.3				
1.5H	+ 4.9 / - 9.2					+ 4.9 / - 9.2				
2.0H	+ 7.2 / - 3.2					+ 7.2 / - 3.4				

CIE Pub.117, 900.5 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -0.4)  
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:240.5V I:0.0447A P:10.0W PF:0.9304 Freq:49.99Hz		
UTHDi:0.28% ITHDi:19.99% KDisp:0.9519 Lamp Flux:900.493x1 lm		
NAME: MD10-10-XX-02 3000K RA90 15D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:

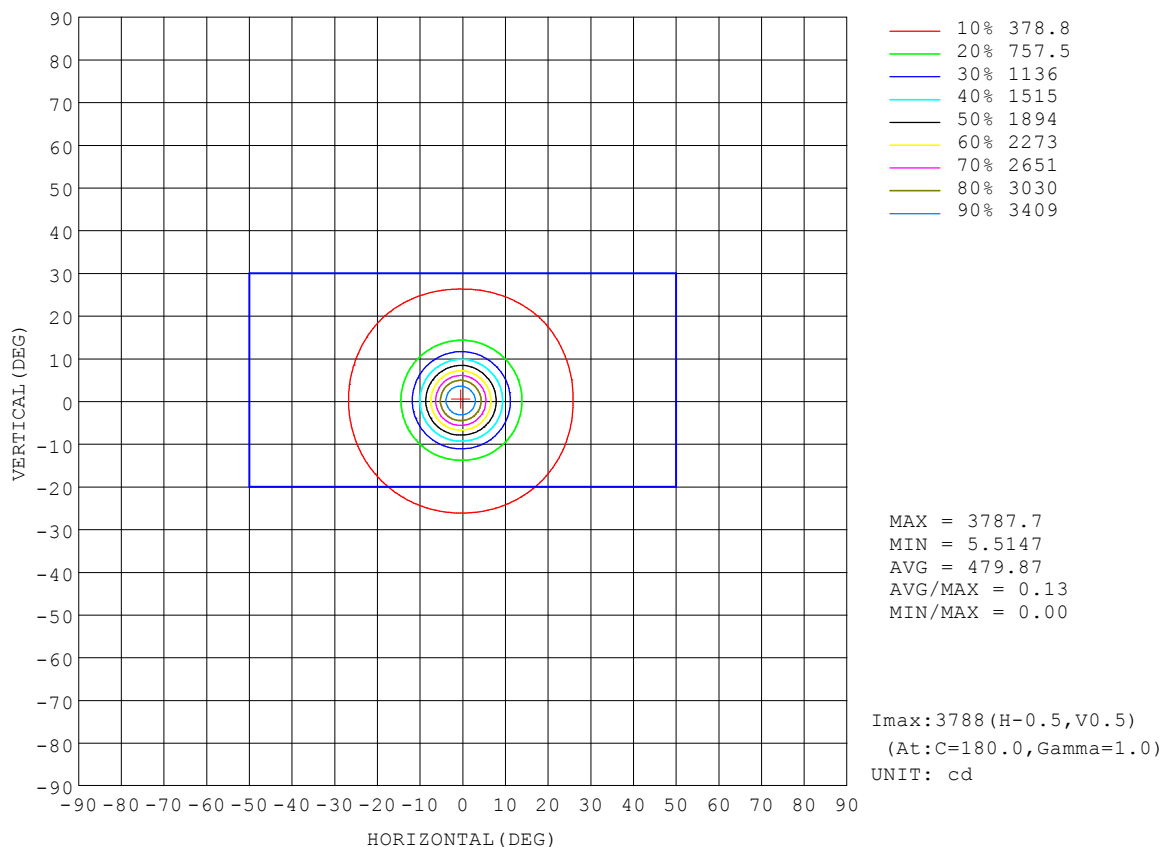
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	85	78	74	84	78	74	84	78	74	70
0.80	93	87	83	92	86	82	91	86	82	78
1.00	98	92	88	97	91	88	95	91	87	83
1.25	102	97	93	101	96	93	99	95	92	87
1.50	105	100	96	104	99	96	101	98	95	90
2.00	108	104	100	107	103	99	104	101	98	93
2.50	110	106	103	108	104	102	105	102	100	94
3.00	111	108	105	110	106	104	106	104	102	95
4.00	113	110	108	111	109	107	108	106	104	97
5.00	115	112	110	113	110	109	109	107	106	98
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:240.5V I:0.0447A P:10.0W PF:0.9304 Freq:49.99Hz		
UTHDi:0.28% ITHDi:19.99% KDisp:0.9519 Lamp Flux:900.493x1 lm		
NAME: MD10-10-XX-02 3000K RA90 15D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:



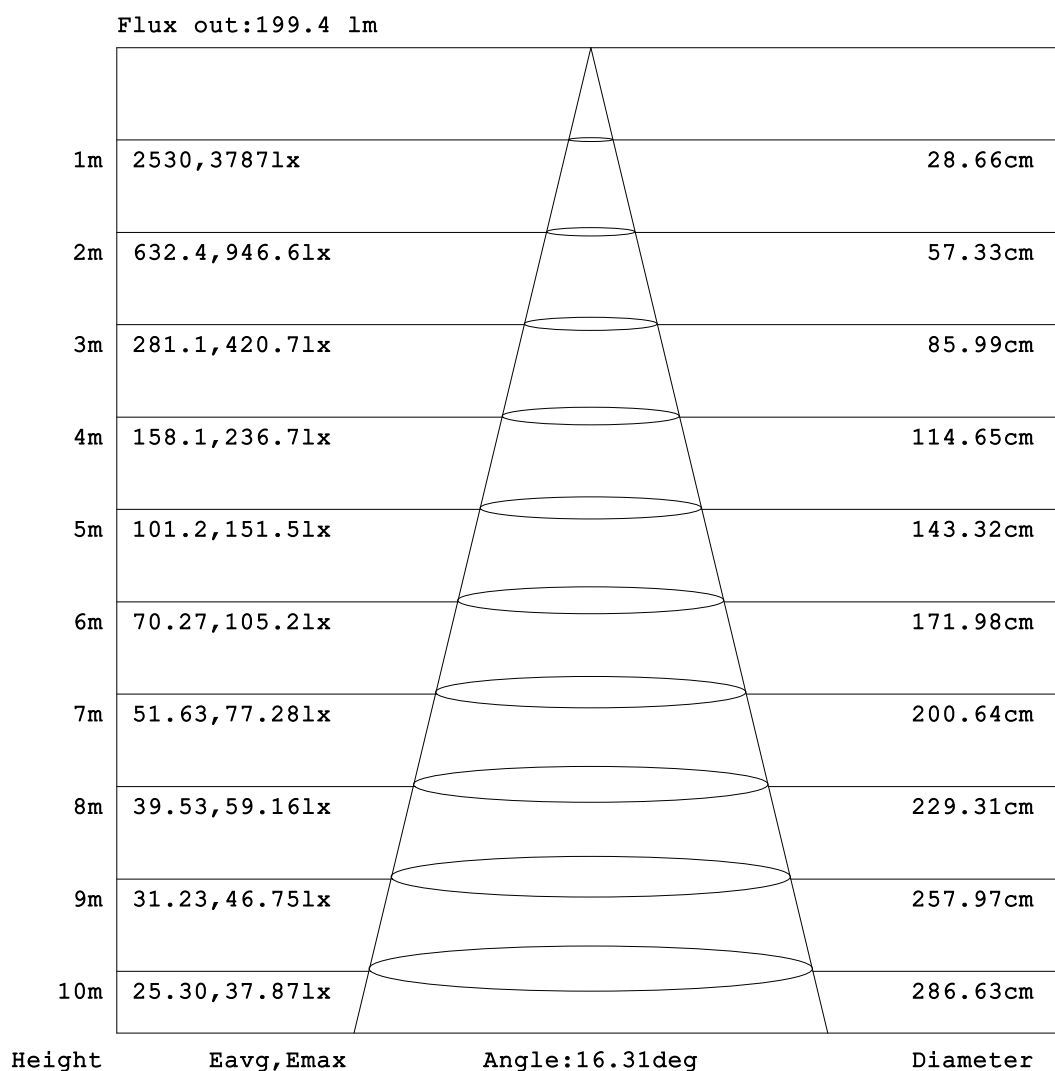
C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: DAMIN  
Test Date: 2023-09-14

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:240.5V I:0.0447A P:10.0W PF:0.9304 Freq:49.99Hz		
UTHDi:0.28% ITHDi:19.99% KDisp:0.9519 Lamp Flux:900.493x1 lm		
NAME: MD10-10-XX-02 3000K RA90 15D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:



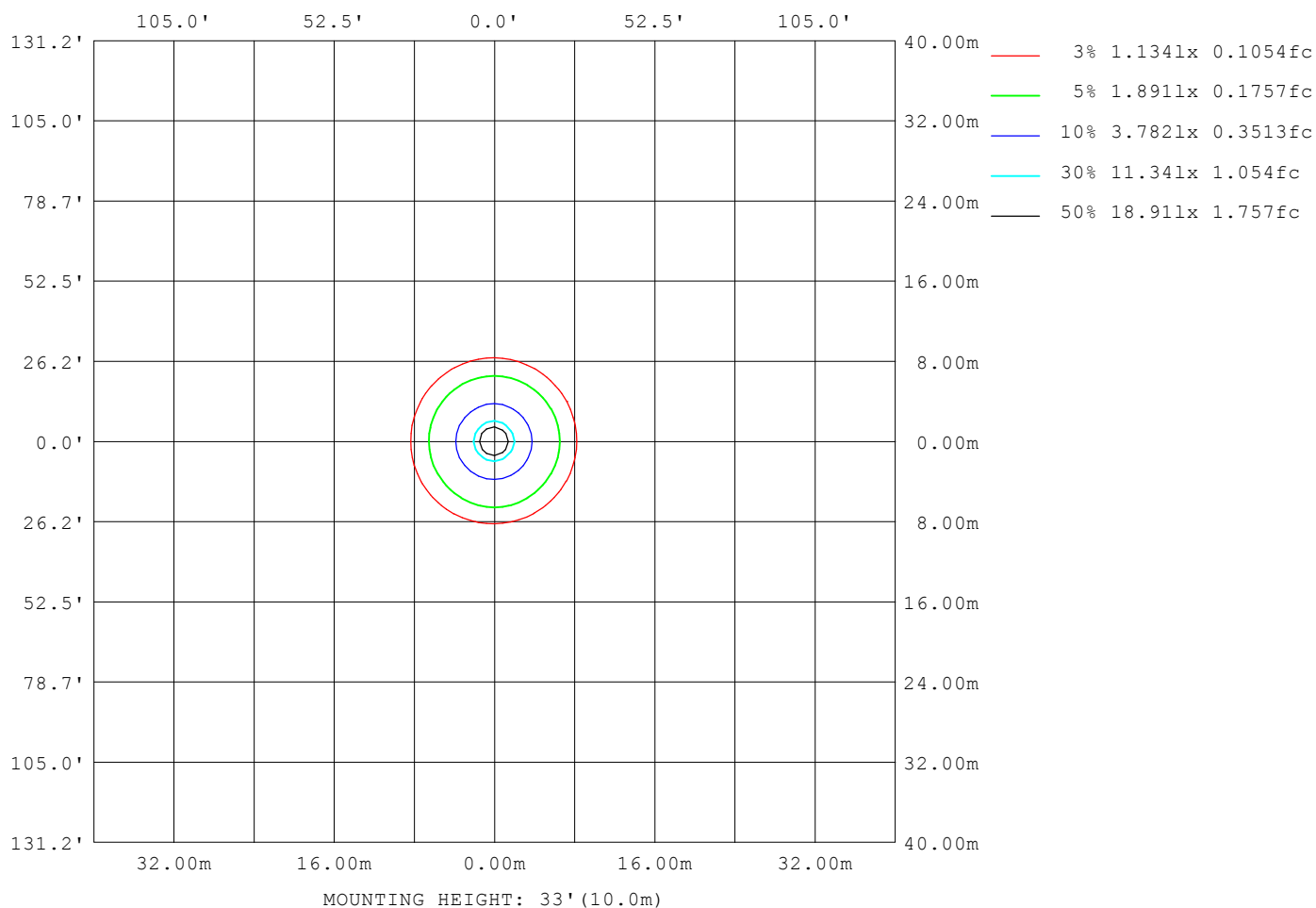
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:240.5V I:0.0447A P:10.0W PF:0.9304 Freq:49.99Hz		
UTHDi:0.28% ITHDi:19.99% KDisp:0.9519 Lamp Flux:900.493x1 lm		
NAME: MD10-10-XX-02 3000K 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:240.5V I:0.0447A P:10.0W PF:0.9304 Freq:49.99Hz		
UTHDi:0.28% ITHDi:19.99% KDisp:0.9519 Lamp Flux:900.493x1 lm		
NAME: MD10-10-XX-02 3000K RA90 15D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:

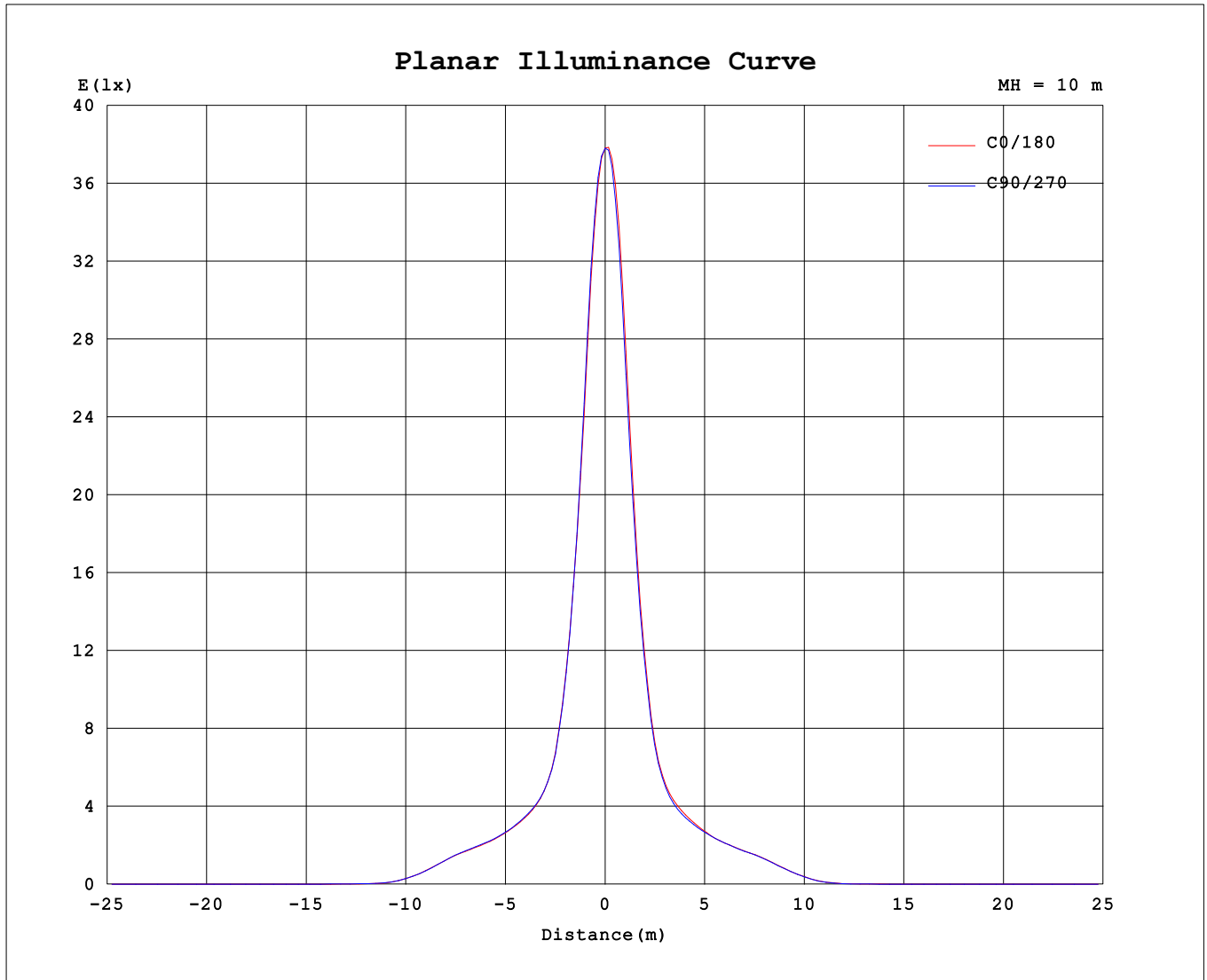
AvgL	cd/m2
L_0~180 (65) av	6892
L_0~180 (75) av	8919
L_0~180 (85) av	12178
L_90~270 (65) av	6436
L_90~270 (75) av	8116
L_90~270 (85) av	247
L_45 (65) av	6862
L_45 (75) av	8783
L_45 (85) av	1881

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:

```