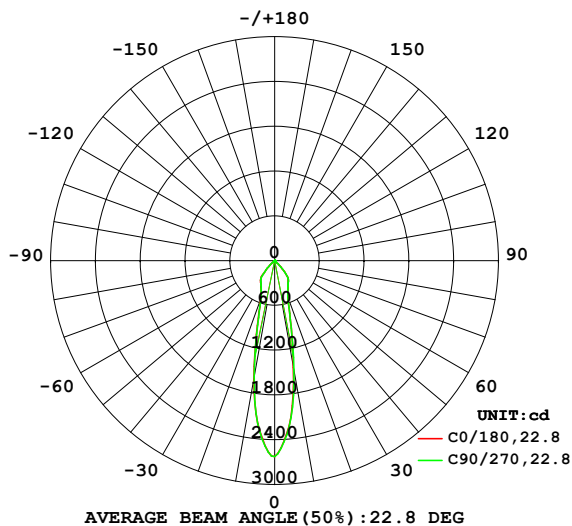


## LUMINAIRE PHOTOMETRIC TEST REPORT

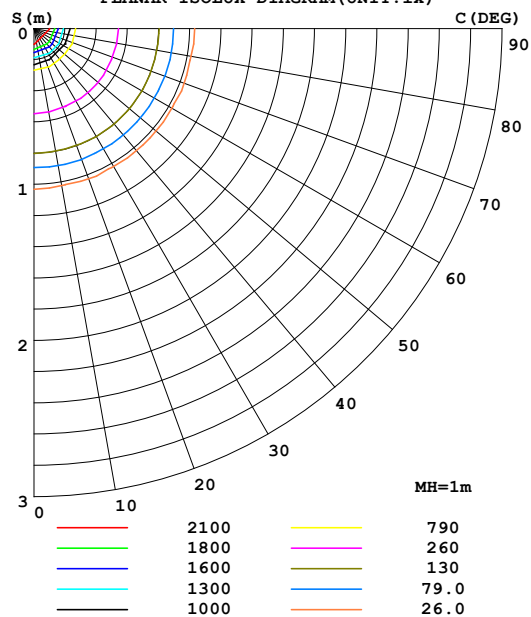
Test:U:240.4V I:0.0445A P:9.9W PF:0.9304 Freq:49.99Hz		
UTHDi:0.20% ITHDi:19.82% KDisp:0.9485 Lamp Flux:940.606x1 lm		
NAME: MD10-10-XX-02 4000K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 94.56 lm/W
MODEL		I <sub>max</sub> (cd)	2623	S/MH (C0/180)	0.40	
NOMINAL POWER(W)	10	LOR (%)	100.0	S/MH (C90/270)	0.40	
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	940.61	η UP,DN (C0-180)	0.0,49.0	
NOMINAL FLUX(lm)	940.606	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)	240.35	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	1456	1453	1488	1571	1612	1604	1582	1506	0- 10	192.9	192.9	20.5,20.5
20	527.3	513.8	522.6	547.1	551.7	540.9	545.4	536.9	10- 20	245.5	438.4	46.6,46.6
30	365.5	362.1	364.3	369.4	373.4	369.4	371.5	366.1	20- 30	198.9	637.3	67.8,67.8
40	238.6	238.5	243.5	256.2	262.7	262.4	259.1	245.1	30- 40	200.8	838.1	89.1,89.1
50	16.40	17.43	17.66	21.82	22.10	21.48	22.41	16.81	40- 50	85.08	923.2	98.1,98.1
60	4.770	4.920	5.016	5.333	5.738	5.632	5.256	4.814	50- 60	9.243	932.4	99.1,99.1
70	3.044	3.159	3.443	3.625	3.703	3.584	3.306	3.080	60- 70	3.936	936.3	99.5,99.5
80	2.628	2.701	3.406	3.368	3.421	2.843	2.364	2.098	70- 80	3.184	939.5	99.9,99.9
90	0.0212	0.0080	0.0167	0.0042	0.0096	0.0077	0.0132	0.0087	80- 90	1.077	940.6	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): 903.35 lm

%lum = 96.0%

%lamp = 96.0%

Conical surface Flux(130deg): 934.53 lm

%lum = 99.4%

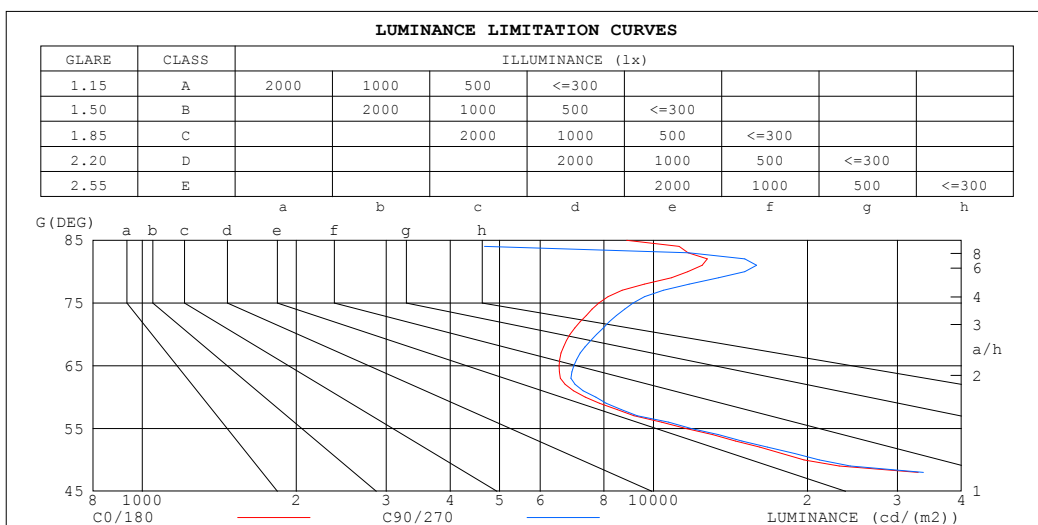
%lamp = 99.4%

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:240.4V I:0.0445A P:9.9W PF:0.9304 Freq:49.99Hz		
UTHDi:0.20% ITHDi:19.82% KDisp:0.9485 Lamp Flux:940.606x1 lm		
NAME: MD10-10-XX-02 4000K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	8864	367
80	11673	15070
75	7815	9117
70	6865	7733
65	6538	6982
60	7358	7708
55	11590	11847
50	19683	21112
45	101023	101518

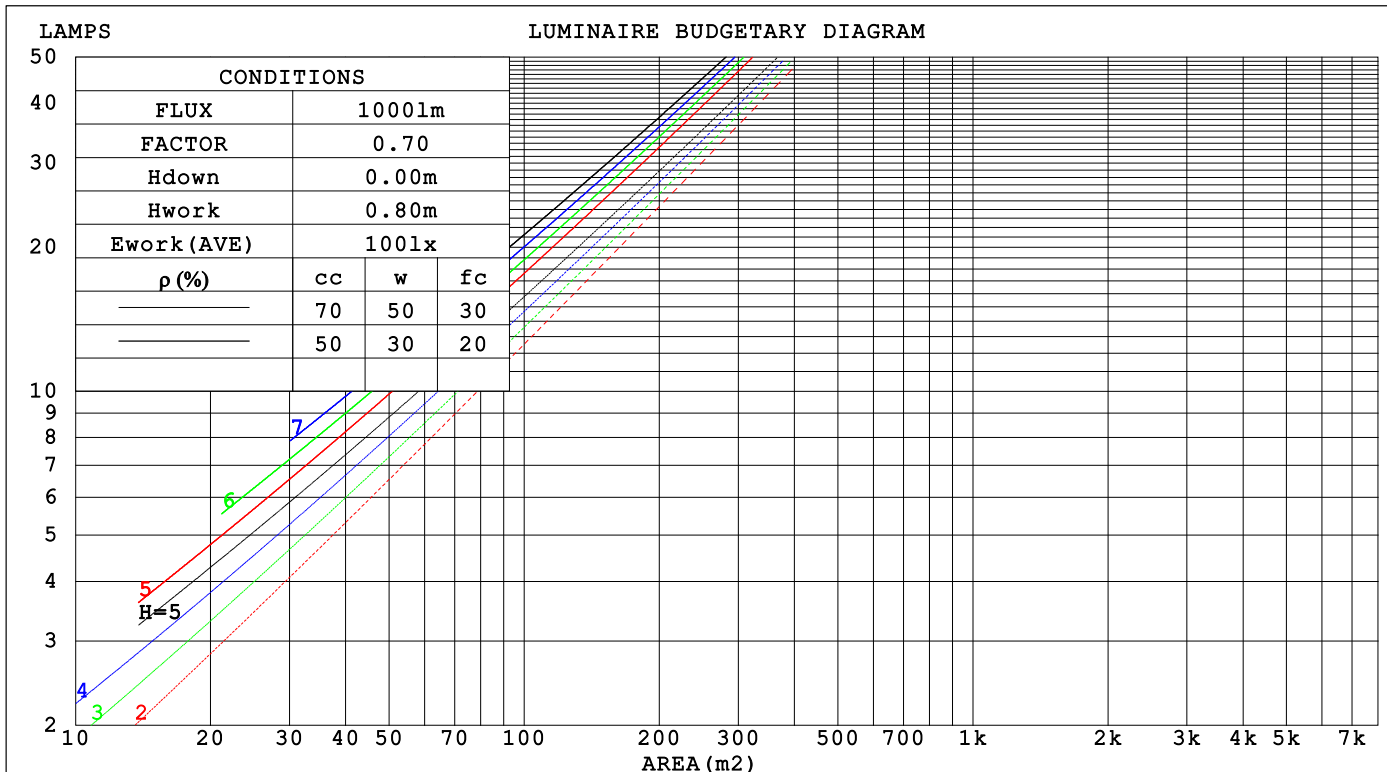
C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2023-09-14

$\gamma$  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:9.9W PF:0.9304 Freq:49.99Hz		
UTHDi:0.20% ITHDi:19.82% KDisp:0.9485 Lamp Flux:940.606x1 lm		
NAME: MD10-10-XX-02 4000K RA90 25D	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	1.11	1.09	1.06	1.09	1.07	1.05	1.05	1.03	1.01	1.01	.00	.98	.98	.97	.96	.94
2.0	1.04	.00	.96	1.02	.98	.95	.99	.96	.93	.96	.93	.91	.93	.91	.89	.88
3.0	.97	.92	.88	.95	.91	.87	.93	.89	.86	.90	.87	.85	.88	.86	.83	.82
4.0	.91	.86	.81	.90	.85	.81	.88	.83	.80	.86	.82	.79	.84	.81	.78	.77
5.0	.86	.80	.76	.85	.79	.75	.83	.78	.75	.81	.77	.74	.80	.76	.73	.72
6.0	.81	.75	.71	.80	.75	.71	.78	.74	.70	.77	.73	.70	.76	.72	.69	.68
7.0	.76	.71	.67	.76	.70	.66	.74	.70	.66	.73	.69	.66	.72	.68	.65	.64
8.0	.72	.67	.63	.72	.66	.63	.71	.66	.62	.70	.65	.62	.69	.65	.62	.61
9.0	.69	.63	.60	.68	.63	.59	.67	.63	.59	.67	.62	.59	.66	.62	.59	.58
10.0	.66	.60	.57	.65	.60	.56	.64	.60	.56	.64	.59	.56	.63	.59	.56	.55



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:9.9W PF:0.9304 Freq:49.99Hz		
UTHDi:0.20% ITHDi:19.82% KDisp:0.9485 Lamp Flux:940.606x1 lm		
NAME: MD10-10-XX-02 4000K RA90 25D	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	.174	.099	.031	.168	.096	.030	.155	.089	.028	.143	.083	.027	.133	.077	.025		
2.0	.166	.091	.028	.161	.089	.027	.150	.083	.026	.140	.079	.025	.131	.074	.023		
3.0	.158	.084	.025	.153	.082	.025	.144	.078	.024	.136	.074	.023	.128	.071	.022		
4.0	.150	.078	.023	.146	.076	.023	.138	.073	.022	.131	.070	.021	.124	.067	.021		
5.0	.143	.073	.021	.139	.071	.021	.132	.069	.020	.126	.066	.020	.120	.064	.019		
6.0	.136	.068	.019	.133	.067	.019	.127	.065	.019	.121	.063	.018	.116	.061	.018		
7.0	.129	.064	.018	.127	.063	.018	.121	.061	.018	.116	.060	.017	.112	.058	.017		
8.0	.123	.060	.017	.121	.060	.017	.116	.058	.017	.112	.057	.016	.108	.055	.016		
9.0	.118	.057	.016	.116	.056	.016	.112	.055	.016	.108	.054	.015	.104	.053	.015		
10.0	.113	.054	.015	.111	.054	.015	.107	.052	.015	.104	.051	.015	.100	.050	.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	.086	.058	.054	.050	.018	.017	.016		
2.0	.156	.133	.113	.133	.114	.098	.091	.079	.068	.053	.046	.040	.017	.015	.013		
3.0	.143	.114	.090	.123	.098	.078	.084	.068	.055	.049	.040	.032	.016	.013	.011		
4.0	.132	.099	.073	.114	.085	.063	.078	.059	.045	.045	.035	.026	.015	.011	.009		
5.0	.123	.087	.060	.106	.075	.052	.073	.053	.037	.042	.031	.022	.014	.010	.007		
6.0	.116	.078	.050	.100	.067	.044	.069	.047	.031	.040	.028	.018	.013	.009	.006		
7.0	.109	.070	.043	.094	.061	.037	.065	.043	.026	.038	.025	.016	.012	.008	.005		
8.0	.103	.064	.037	.089	.055	.032	.061	.039	.023	.036	.023	.014	.012	.008	.004		
9.0	.098	.058	.032	.084	.051	.028	.058	.036	.020	.034	.021	.012	.011	.007	.004		
10.0	.093	.054	.028	.080	.047	.024	.056	.033	.017	.033	.020	.010	.011	.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:240.4V I:0.0445A P:9.9W PF:0.9304 Freq:49.99Hz UTHDi:0.20% ITHDi:19.82% KDisp:0.9485Lamp Flux:940.606x1 lm										
NAME: MD10-10-XX-02 4000K RA90 25D						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	24.2	25.1	24.4	25.3	25.5	24.2	25.2	24.5	25.3	25.5
3H	24.1	24.9	24.3	25.1	25.3	24.1	24.9	24.4	25.1	25.3
4H	24.0	24.8	24.3	25.0	25.2	24.0	24.8	24.3	25.1	25.3
6H	23.9	24.7	24.2	24.9	25.2	24.0	24.7	24.3	25.0	25.2
8H	23.9	24.6	24.2	24.9	25.2	24.0	24.7	24.3	25.0	25.2
12H	23.9	24.6	24.2	24.8	25.1	24.0	24.6	24.3	24.9	25.2
4H 2H	24.0	24.8	24.2	25.0	25.2	24.0	24.8	24.3	25.0	25.2
3H	23.8	24.5	24.1	24.8	25.1	23.9	24.5	24.2	24.8	25.1
4H	23.8	24.4	24.1	24.7	25.0	23.8	24.4	24.1	24.7	25.0
6H	23.7	24.3	24.1	24.6	25.0	23.8	24.3	24.2	24.7	25.0
8H	23.7	24.2	24.1	24.6	24.9	23.8	24.3	24.2	24.7	25.0
12H	23.7	24.2	24.1	24.5	24.9	23.8	24.2	24.2	24.6	25.0
8H 4H	23.6	24.1	24.0	24.5	24.9	23.7	24.2	24.1	24.5	24.9
6H	23.6	24.0	24.1	24.4	24.9	23.7	24.1	24.1	24.5	24.9
8H	23.7	24.0	24.1	24.4	24.9	23.8	24.1	24.2	24.5	25.0
12H	23.6	24.0	24.1	24.4	24.9	23.7	24.0	24.2	24.5	24.9
12H 4H	23.6	24.1	24.0	24.4	24.8	23.6	24.1	24.0	24.5	24.9
6H	23.6	24.0	24.0	24.4	24.8	23.7	24.0	24.1	24.5	24.9
8H	23.6	23.9	24.1	24.4	24.9	23.7	24.0	24.2	24.5	25.0
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 2.5 / - 9.1					+ 2.5 / - 8.6				
1.5H	+ 4.8 / - 8.8					+ 4.8 / - 8.3				
2.0H	+ 7.2 / - 3.5					+ 7.0 / - 3.1				

CIE Pub.117, 940.6 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -0.2)  
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:9.9W PF:0.9304 Freq:49.99Hz		
UTHDi:0.20% ITHDi:19.82% KDisp:0.9485 Lamp Flux:940.606x1 lm		
NAME: MD10-10-XX-02 4000K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:

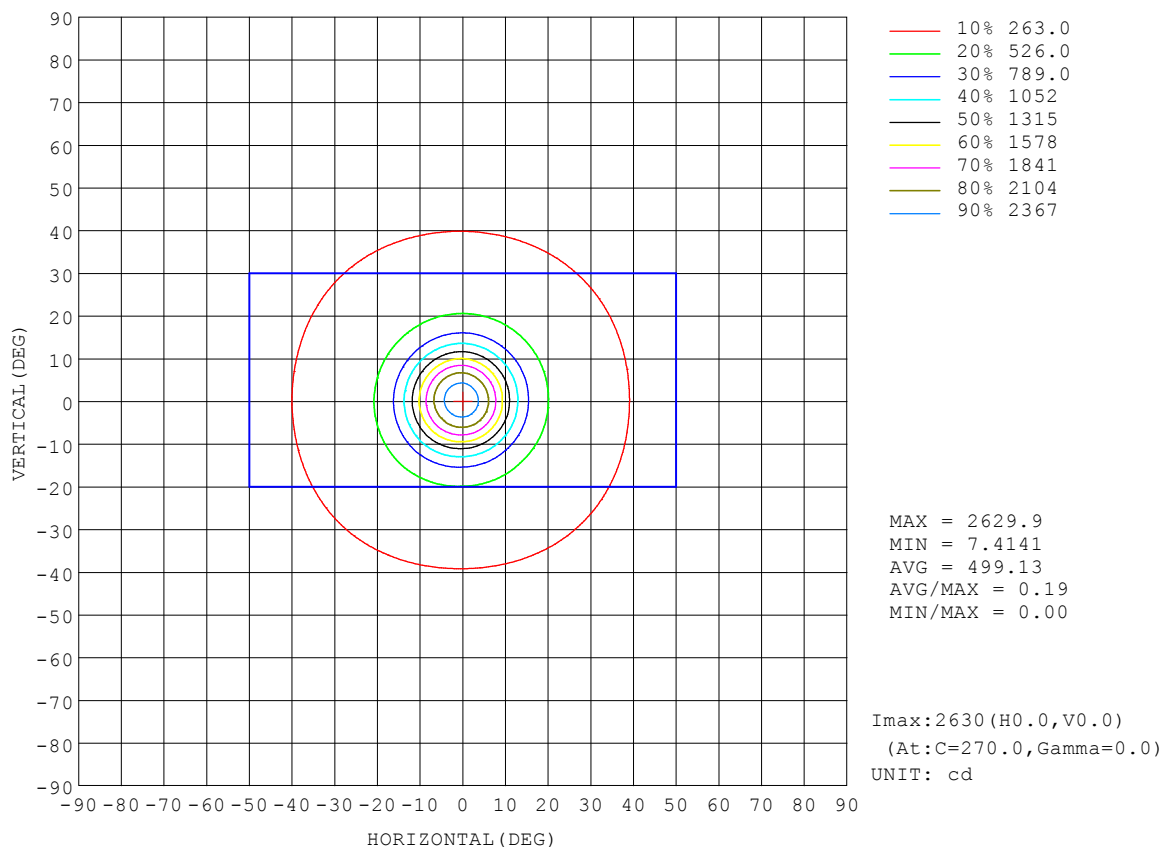
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	85	78	74	84	78	74	83	77	74	70
0.80	93	86	82	92	86	82	91	85	82	78
1.00	98	92	88	97	91	88	95	91	87	83
1.25	102	96	93	101	96	92	99	95	92	87
1.50	105	100	96	104	99	96	101	98	95	90
2.00	108	103	100	106	102	99	104	100	98	93
2.50	110	106	102	108	104	102	105	102	100	94
3.00	111	108	105	109	106	104	106	104	102	95
4.00	113	110	108	111	109	107	108	106	104	97
5.00	115	112	110	112	110	109	108	107	105	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:240.4V I:0.0445A P:9.9W PF:0.9304 Freq:49.99Hz		
UTHDi:0.20% ITHDi:19.82% KDisp:0.9485 Lamp Flux:940.606x1 lm		
NAME: MD10-10-XX-02 4000K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:



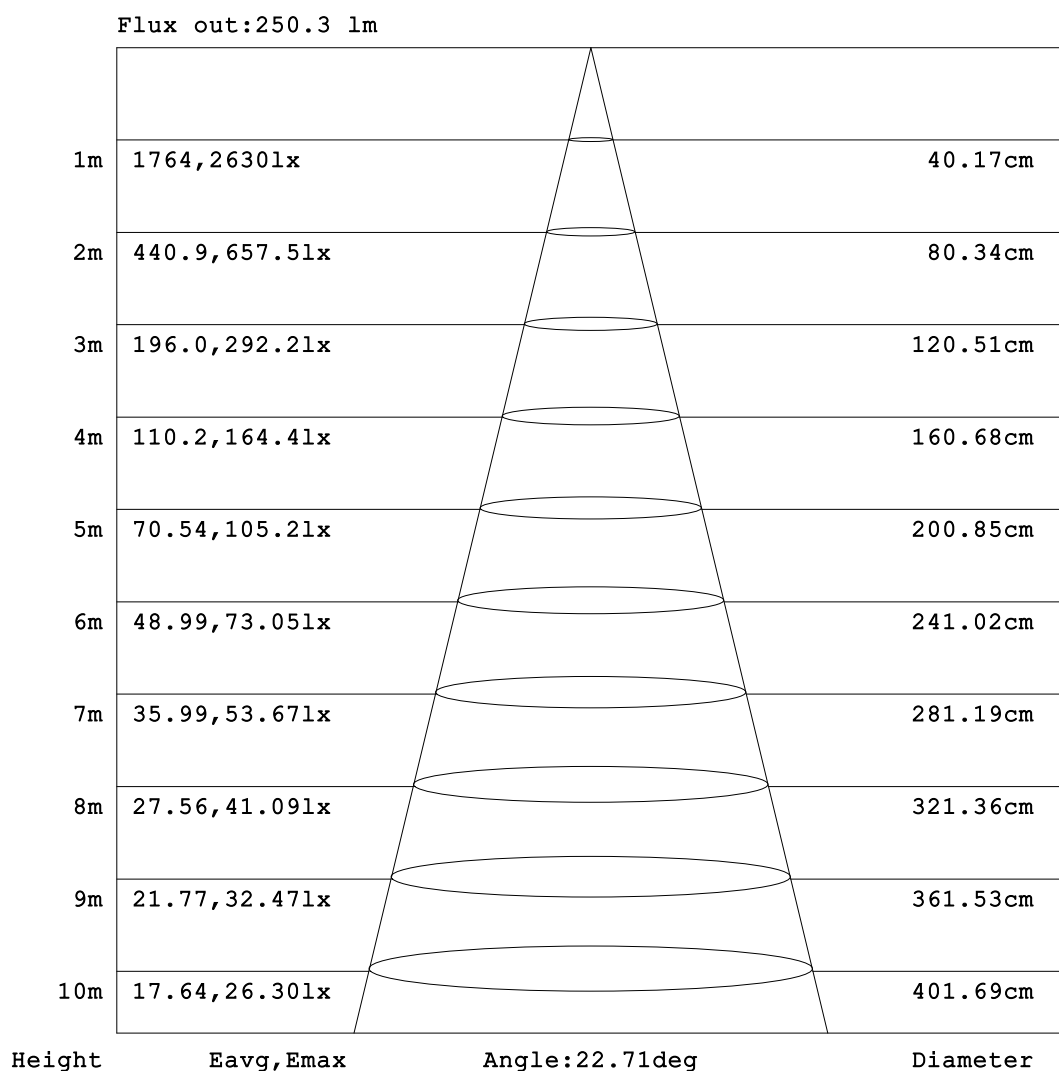
C Range: 0 - 360DEG  
C Interval: 45.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:DAMIN  
Test Date:2023-09-14

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:9.9W PF:0.9304 Freq:49.99Hz		
UTHDi:0.20% ITHDi:19.82% KDisp:0.9485 Lamp Flux:940.606x1 lm		
NAME: MD10-10-XX-02 4000K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:



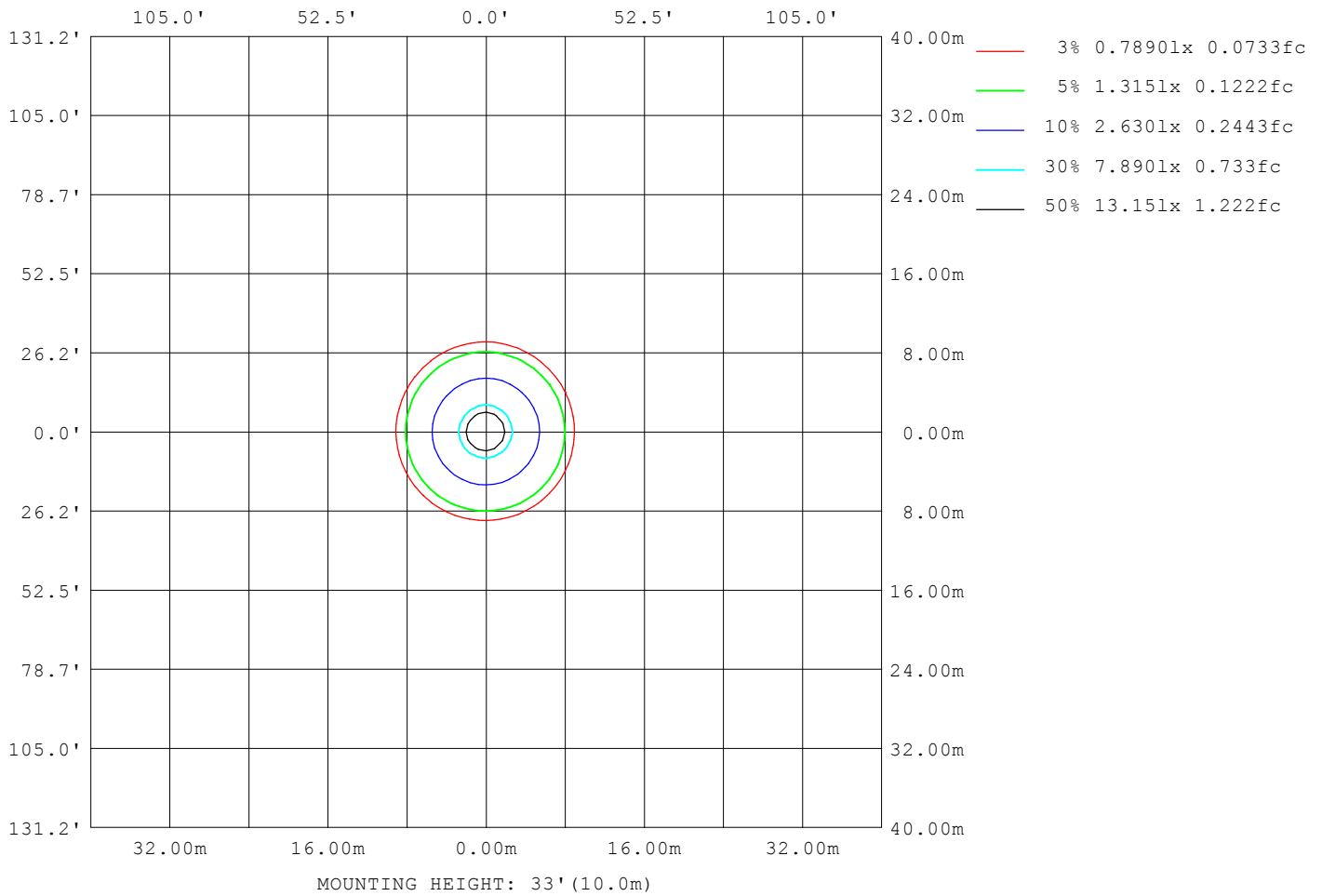
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:9.9W PF:0.9304 Freq:49.99Hz		
UTHDi:0.20% ITHDi:19.82% KDisp:0.9485 Lamp Flux:940.606x1 lm		
NAME: MD10-10-XX-02 4000K RA90 25D	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:9.9W PF:0.9304 Freq:49.99Hz		
UTHDi:0.20% ITHDi:19.82% KDisp:0.9485 Lamp Flux:940.606x1 lm		
NAME: MD10-10-XX-02 4000K RA90 25D	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Norming Lighting	SUR.:	Shielding Angle:

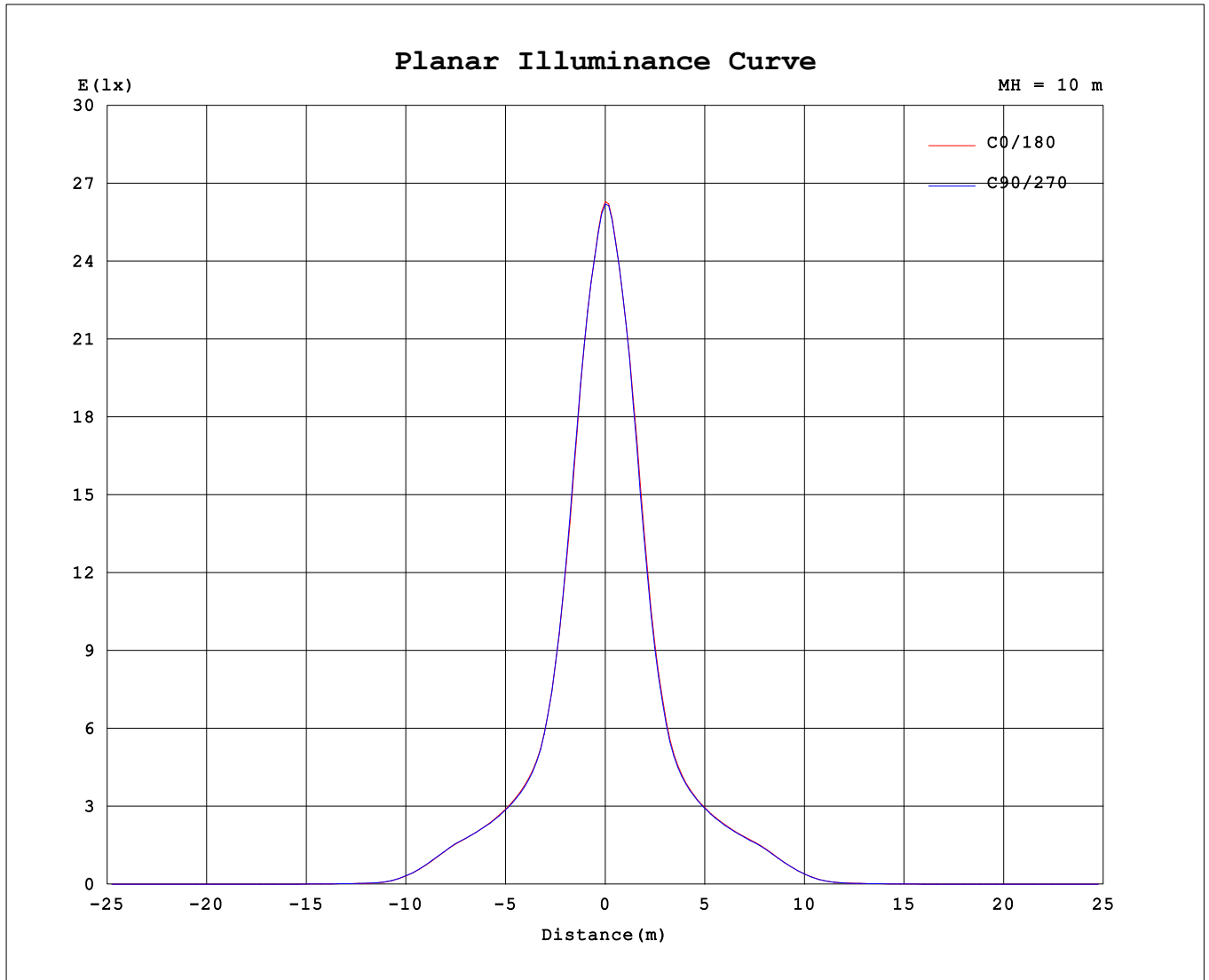
AvgL	cd/m2
L_0~180 (65) av	7082
L_0~180 (75) av	8840
L_0~180 (85) av	12382
L_90~270 (65) av	6959
L_90~270 (75) av	8816
L_90~270 (85) av	279
L_45 (65) av	6998
L_45 (75) av	8746
L_45 (85) av	1774

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:

```