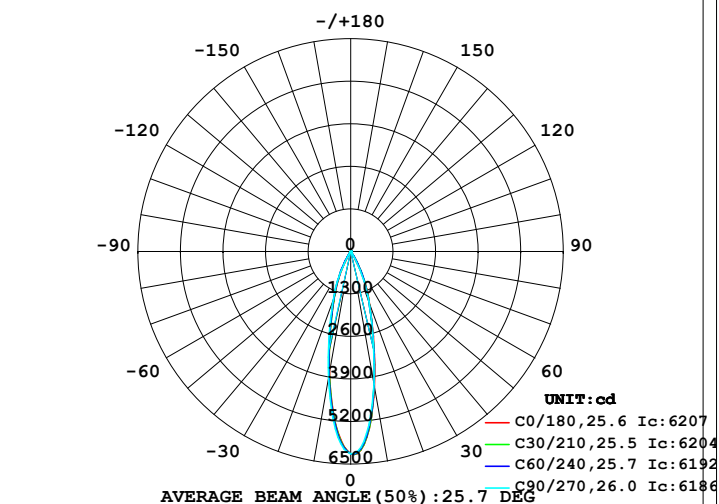


## LUMINAIRE PHOTOMETRIC TEST REPORT

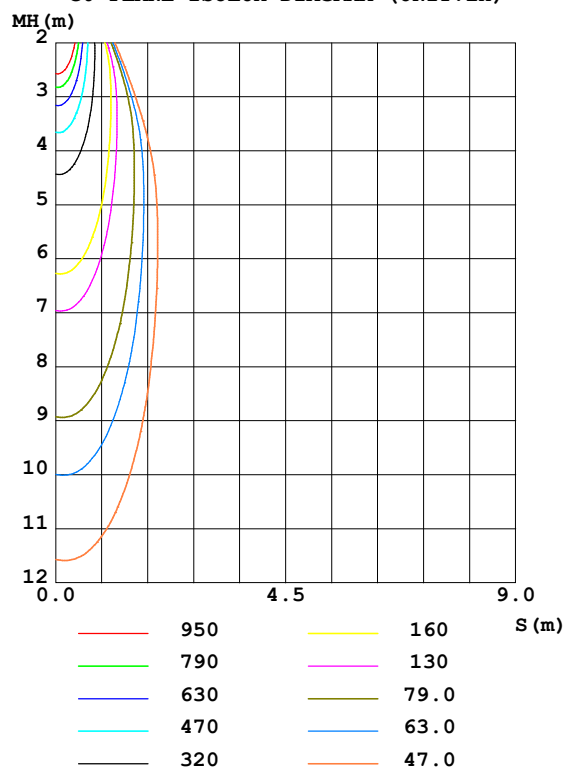
Test:U:48.00V I:0.4991A P:23.96W PF:1.000 Freq:50.00Hz Lamp Flux:1716.28x1 lm					
NAME: M20-T41004A-24G40-R24			TYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.:			SUR.:436*21.6		Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 71.64 lm/W
MODEL	4000K CRI90	I <sub>max</sub> (cd)	6225	S/MH(C0/180)	0.41	
NOMINAL POWER(W)	24	LOR(%)	100.0	S/MH(C90/270)	0.43	
RATED VOLTAGE(V)	226	TOTAL FLUX(lm)	1716.3	η UP,DN(C0-180)	0.0,50.1	
NOMINAL FLUX(lm)	1716.28	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,49.9	
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.00	
TEST VOLTAGE(V)	225.1	η down(%)	100.0	CIBSE SHR MAX	1.00	

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: ZR  
 Test Date: 2021-08-18

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity: 65.0%  
 Test Distance: 8.402m [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	4190	4182	4111	3889	3762	3734	3917	4020	0- 10	475.3	475.3	27.7, 27.7
20	1672	1669	1630	1511	1467	1465	1562	1615	10- 20	705.9	1181	68.8, 68.8
30	291.0	515.3	280.1	412.2	230.2	389.2	262.2	496.1	20- 30	412.4	1594	92.9, 92.9
40	23.04	47.00	24.00	44.67	42.30	57.16	39.72	65.41	30- 40	82.63	1676	97.7, 97.7
50	4.371	6.922	4.820	7.749	19.01	21.37	18.54	21.89	40- 50	17.36	1694	98.7, 98.7
60	1.503	2.090	1.554	2.337	10.88	11.70	11.01	12.04	50- 60	8.257	1702	99.2, 99.2
70	1.932	1.966	1.966	2.016	7.831	7.905	7.948	8.143	60- 70	5.569	1707	99.5, 99.5
80	2.290	2.318	2.299	2.360	5.708	5.798	5.808	5.973	70- 80	4.770	1712	99.8, 99.8
90	2.549	2.601	2.611	2.636	4.311	4.304	4.377	4.476	80- 90	4.103	1716	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): 1686.9 lm

%lum = 98.3%

%lamp = 98.3%

Conical surface Flux(120deg): 1701.8 lm

%lum = 99.2%

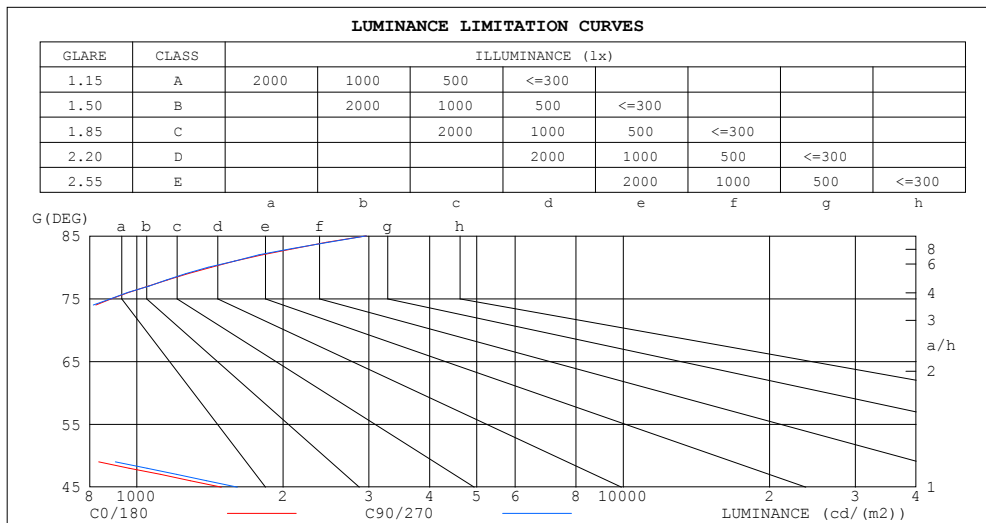
%lamp = 99.2%

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:ZR  
 Test Date:2021-08-18

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity:65.0%  
 Test Distance:8.402m [K=1.0000]  
 Remarks:

## LUMINANCE LIMITATION CURVES

Test:U:48.00V I:0.4991A P:23.96W PF:1.000 Freq:50.00Hz Lamp Flux:1716.28x1 lm		
NAME: M20-T41004A-24G40-R24	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:436*21.6	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	2966	2967
80	1424	1402
75	889	886
70	610	609
65	437	439
60	325	329
55	420	455
50	735	794
45	1493	1609

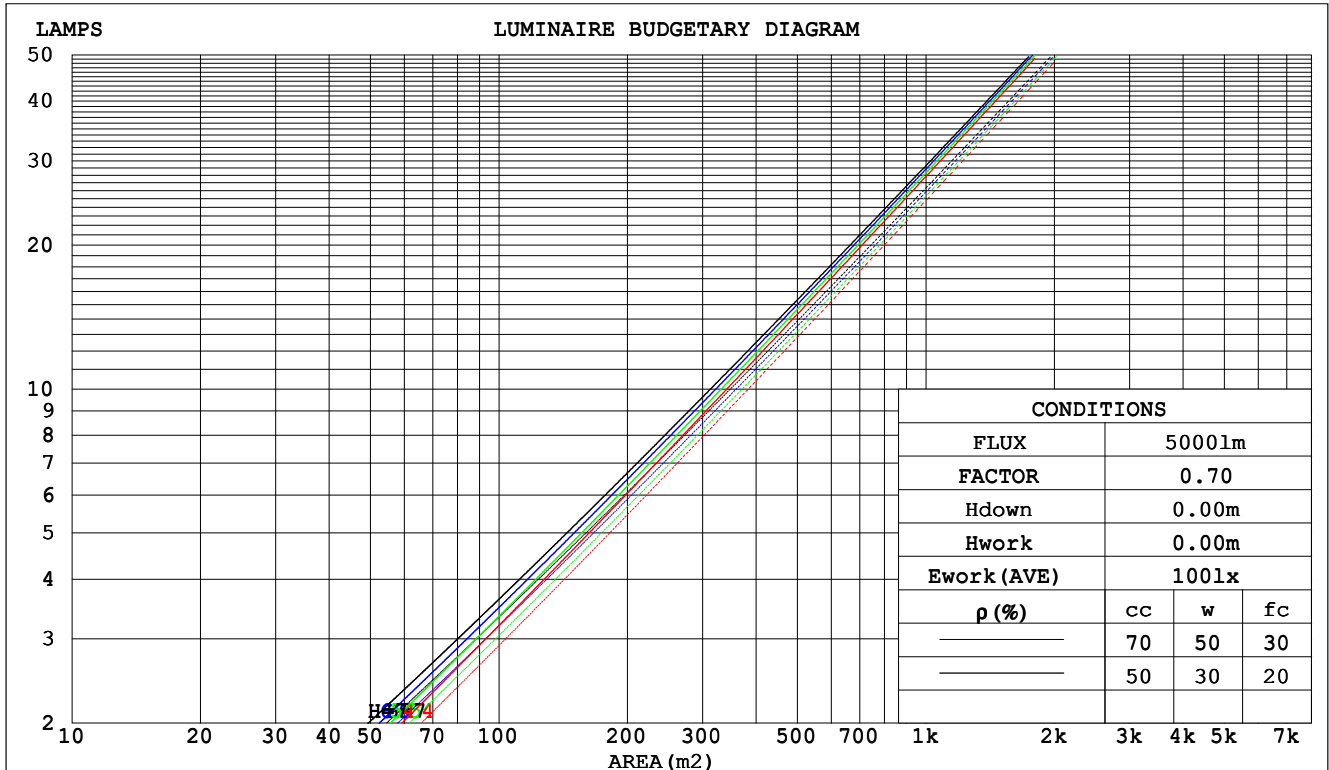
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-18

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity:65.0%  
Test Distance:8.402m [K=1.0000]  
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:48.00V I:0.4991A P:23.96W PF:1.000 Freq:50.00Hz Lamp Flux:1716.28x1 lm		
NAME: M20-T41004A-24G40-R24	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:436*21.6	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	.00
1.0	1.12	1.10	1.08	1.10	1.08	1.07	1.06	1.05	1.03	1.02	1.01	1.00	.99	.98	.97	.96
2.0	1.06	1.03	1.00	1.05	1.02	.99	1.02	.99	.97	.99	.97	.95	.96	.94	.93	.92
3.0	1.01	.97	.94	.90	.96	.93	.97	.94	.92	.95	.93	.91	.93	.91	.89	.88
4.0	.97	.92	.89	.96	.92	.89	.94	.90	.88	.92	.89	.87	.90	.88	.86	.84
5.0	.93	.88	.85	.92	.88	.84	.90	.86	.84	.89	.85	.83	.87	.84	.82	.81
6.0	.89	.84	.81	.88	.84	.81	.87	.83	.80	.86	.82	.80	.84	.81	.79	.78
7.0	.85	.81	.78	.85	.81	.77	.84	.80	.77	.83	.79	.77	.82	.79	.76	.75
8.0	.82	.78	.75	.82	.78	.75	.81	.77	.74	.80	.77	.74	.79	.76	.74	.73
9.0	.80	.75	.72	.79	.75	.72	.78	.74	.72	.77	.74	.71	.77	.74	.71	.70
10.0	.77	.72	.69	.76	.72	.69	.76	.72	.69	.75	.72	.69	.74	.71	.69	.68



C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:ZR  
 Test Date:2021-08-18

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity:65.0%  
 Test Distance:8.402m [K=1.0000]  
 Remarks:

### WEC AND CCEC

Test:U:48.00V I:0.4991A P:23.96W PF:1.000 Freq:50.00Hz Lamp Flux:1716.28x1 lm					
NAME: M20-T41004A-24G40-R24			TYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.:			SUR.:436*21.6		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	.150	.085	.027	.143	.082	.026	.131	.075	.024	.119	.069	.022	.109	.063	.020	
2.0	.139	.076	.023	.134	.074	.023	.123	.069	.021	.114	.064	.020	.105	.059	.019	
3.0	.130	.069	.021	.125	.067	.020	.117	.063	.019	.109	.060	.018	.101	.056	.017	
4.0	.122	.063	.019	.118	.062	.018	.111	.059	.018	.104	.056	.017	.098	.053	.016	
5.0	.115	.059	.017	.112	.057	.017	.106	.055	.016	.100	.053	.016	.094	.050	.015	
6.0	.109	.055	.016	.106	.054	.015	.101	.052	.015	.096	.050	.015	.091	.048	.014	
7.0	.104	.051	.015	.101	.051	.014	.097	.049	.014	.092	.047	.014	.088	.046	.013	
8.0	.099	.048	.014	.097	.048	.014	.093	.046	.013	.089	.045	.013	.085	.044	.013	
9.0	.095	.046	.013	.093	.045	.013	.089	.044	.013	.086	.043	.012	.082	.042	.012	
10.0	.091	.044	.012	.089	.043	.012	.086	.042	.012	.083	.041	.012	.080	.040	.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	.169	.158	.147	.145	.135	.127	.099	.093	.088	.057	.054	.051	.018	.017	.016	
2.0	.152	.133	.116	.130	.114	.101	.089	.079	.070	.051	.046	.041	.016	.015	.013	
3.0	.137	.113	.094	.118	.098	.082	.081	.068	.057	.047	.040	.034	.015	.013	.011	
4.0	.126	.098	.077	.108	.085	.067	.074	.059	.047	.043	.035	.028	.014	.011	.009	
5.0	.115	.086	.064	.099	.074	.056	.068	.052	.039	.040	.031	.023	.013	.010	.008	
6.0	.107	.076	.054	.092	.066	.047	.063	.046	.033	.037	.027	.020	.012	.009	.007	
7.0	.100	.068	.046	.086	.059	.040	.059	.041	.028	.034	.024	.017	.011	.008	.006	
8.0	.093	.062	.040	.080	.053	.035	.056	.037	.025	.032	.022	.015	.010	.007	.005	
9.0	.088	.056	.035	.076	.049	.030	.052	.034	.021	.031	.020	.013	.010	.007	.004	
10.0	.083	.051	.030	.072	.045	.026	.050	.031	.019	.029	.019	.011	.009	.006	.004	

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-18

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity:65.0%  
Test Distance:8.402m [K=1.0000]  
Remarks:

UGR(Unified Glare Rating) Table

Test:U:48.00V I:0.4991A P:23.96W PF:1.000 Freq:50.00Hz Lamp Flux:1716.28x1 lm											
NAME: M20-T41004A-24G40-R24					TYPE:			WEIGHT:			
SPEC.:					DIM.:			SERIAL No.:			
MFR.:					SUR.:436*21.6			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	4.3	5.0	4.5	5.2	5.3	4.4	5.2	4.6	5.3	5.5	
	3H	4.2	4.9	4.5	5.1	5.3	4.4	5.1	4.6	5.2	5.4
	4H	4.3	4.9	4.6	5.2	5.4	4.4	5.1	4.7	5.3	5.5
	6H	4.6	5.2	4.8	5.4	5.6	4.7	5.3	5.0	5.5	5.8
	8H	4.8	5.4	5.1	5.6	5.9	4.9	5.5	5.2	5.7	6.0
	12H	5.2	5.8	5.5	6.0	6.3	5.3	5.9	5.6	6.1	6.4
4H	2H	4.1	4.7	4.3	4.9	5.1	4.2	4.9	4.5	5.1	5.3
	3H	4.1	4.6	4.4	4.9	5.2	4.2	4.8	4.5	5.0	5.3
	4H	4.3	4.8	4.6	5.1	5.4	4.4	4.9	4.7	5.2	5.5
	6H	4.7	5.2	5.1	5.5	5.8	4.8	5.3	5.2	5.6	5.9
	8H	5.2	5.6	5.5	5.9	6.3	5.2	5.6	5.6	6.0	6.4
	12H	5.8	6.2	6.2	6.6	7.0	5.9	6.3	6.3	6.6	7.0
8H	4H	4.3	4.7	4.7	5.1	5.4	4.4	4.8	4.8	5.2	5.5
	6H	5.0	5.3	5.4	5.7	6.1	5.1	5.4	5.5	5.8	6.2
	8H	5.6	5.9	6.1	6.3	6.8	5.7	6.0	6.1	6.4	6.8
	12H	6.6	6.9	7.1	7.3	7.8	6.6	6.9	7.1	7.3	7.8
12H	4H	4.3	4.7	4.7	5.1	5.4	4.4	4.8	4.8	5.2	5.6
	6H	5.1	5.4	5.5	5.8	6.2	5.2	5.5	5.6	5.9	6.3
	8H	5.8	6.1	6.3	6.5	7.0	5.9	6.2	6.4	6.6	7.1
Variations with the observer position at spacings:											
S = 1.0H	+ 0.9 / - 1.0					+ 0.9 / - 1.1					
1.5H	+ 2.0 / - 0.9					+ 1.9 / - 0.9					
2.0H	+ 0.5 / - 0.2					+ 0.6 / - 0.2					

CIE Pub.117, 1716 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 1.9)

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-18

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity:65.0%  
Test Distance:8.402m [K=1.0000]  
Remarks:

### UTILIZATION FACTORS TABLE

Test:U:48.00V I:0.4991A P:23.96W PF:1.000 Freq:50.00Hz Lamp Flux:1716.28x1 lm		
NAME: M20-T41004A-24G40-R24	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:436*21.6	Shielding Angle:

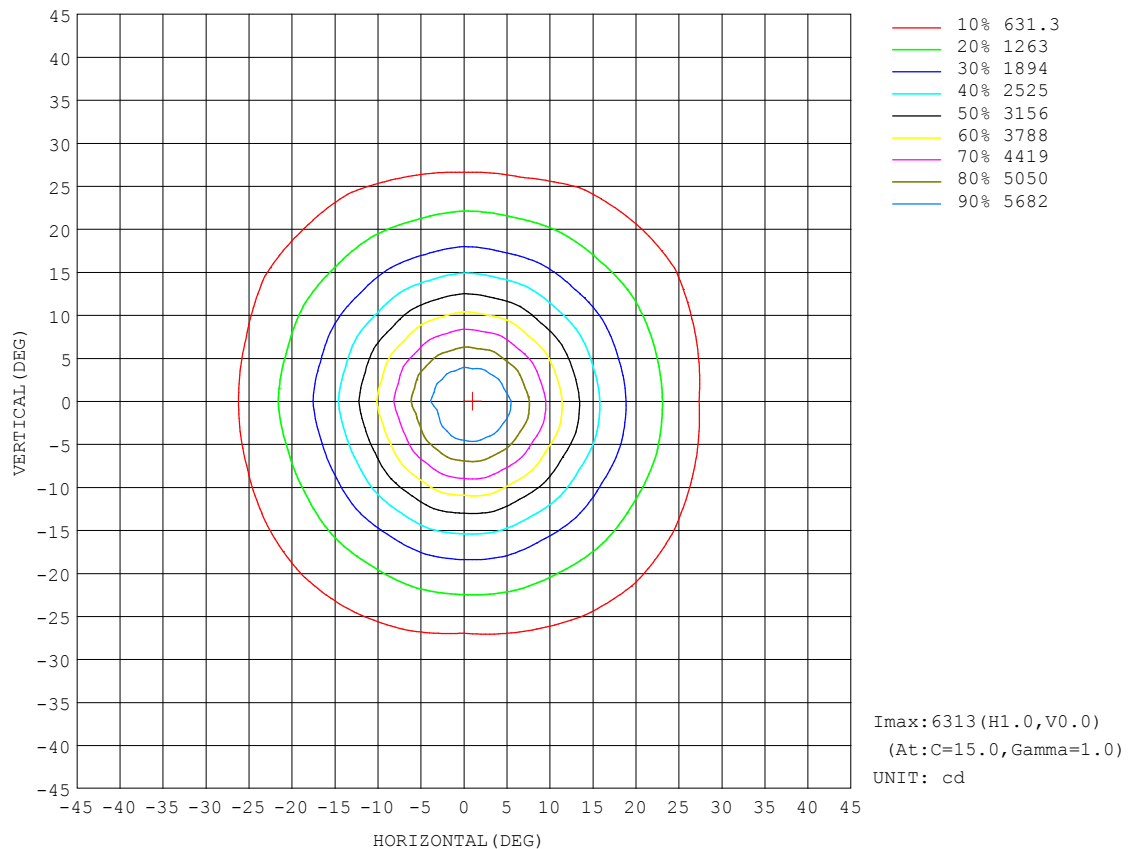
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	90	84	81	90	84	81	89	84	81	77
0.80	97	92	88	97	91	88	95	91	88	84
1.00	101	96	93	100	95	92	99	95	92	88
1.25	105	100	97	104	99	96	102	98	95	91
1.50	107	103	100	106	102	99	104	101	98	94
2.00	109	105	102	108	104	102	105	102	100	95
2.50	111	107	105	109	106	104	106	104	102	96
3.00	112	109	107	111	108	105	107	105	103	97
4.00	114	112	110	112	110	108	109	107	105	99
5.00	115	113	112	113	112	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: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-18

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity:65.0%  
Test Distance:8.402m [K=1.0000]  
Remarks:

## ISOCANDELA DIAGRAM

Test:U:48.00V I:0.4991A P:23.96W PF:1.000 Freq:50.00Hz Lamp Flux:1716.28x1 lm		
NAME: M20-T41004A-24G40-R24	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:436*21.6	Shielding Angle:



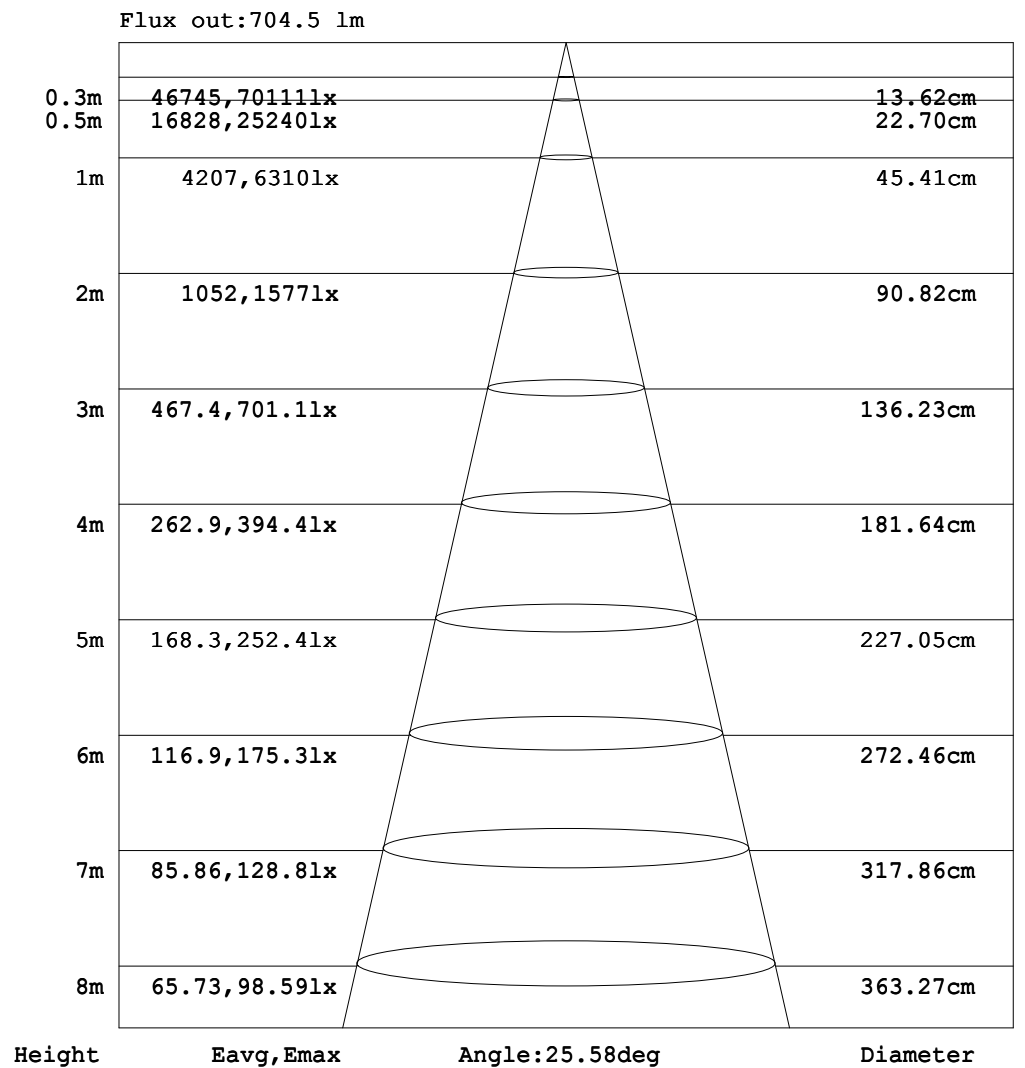
C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-18

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity:65.0%  
Test Distance:8.402m [K=1.0000]  
Remarks:



### AAI Figure

Test:U:48.00V I:0.4991A P:23.96W PF:1.000 Freq:50.00Hz Lamp Flux:1716.28x1 lm		
NAME: M20-T41004A-24G40-R24	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:436*21.6	Shielding Angle:



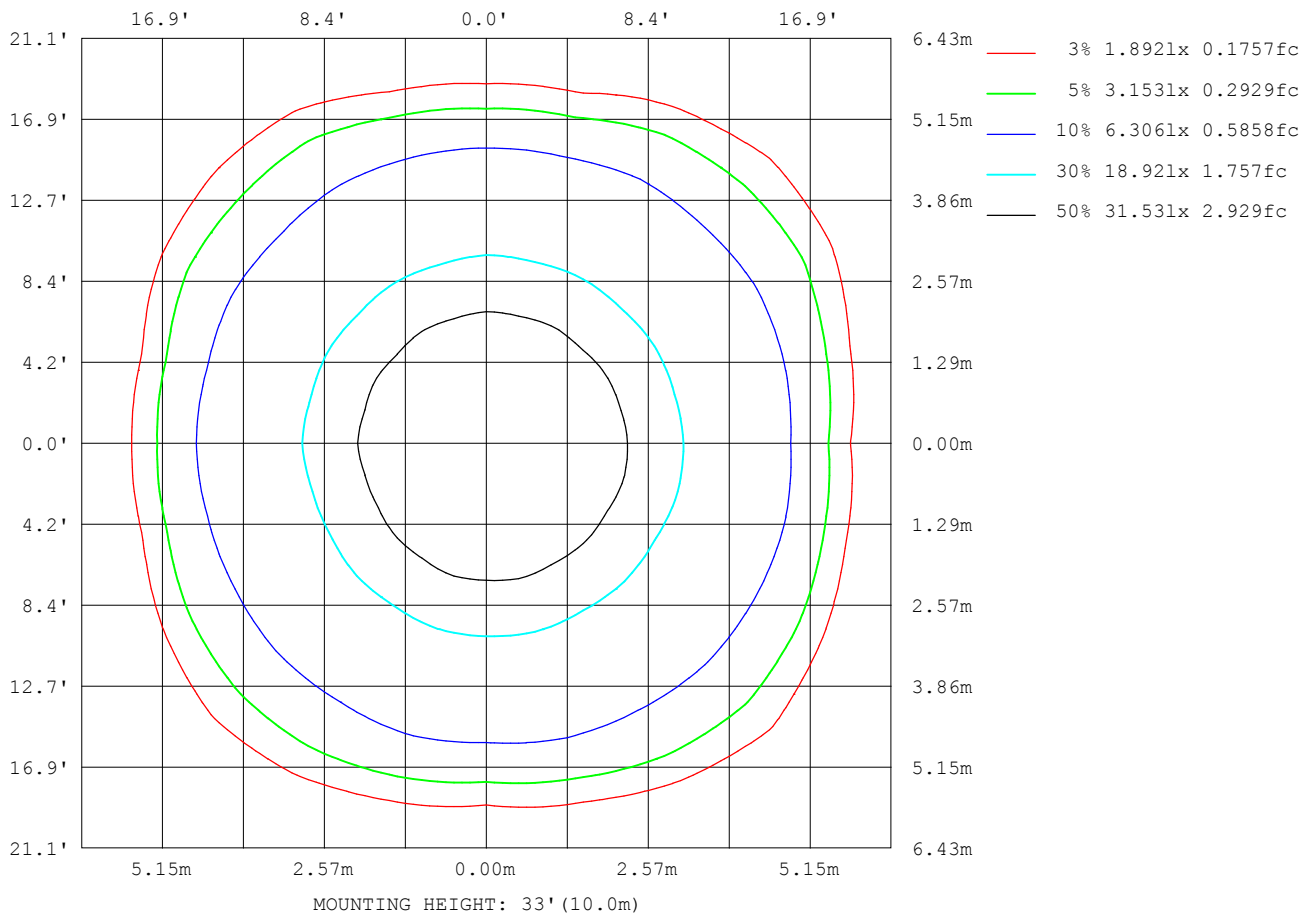
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-18

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity:65.0%  
Test Distance:8.402m [K=1.0000]  
Remarks:

### ISOLUX DIAGRAM

Test:U:48.00V I:0.4991A P:23.96W PF:1.000 Freq:50.00Hz Lamp Flux:1716.28x1 lm		
NAME: M20-T41004A-24G40-R24	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:436*21.6	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-18

γ Range: 0 - 90DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity:65.0%  
Test Distance:8.402m [K=1.0000]  
Remarks:

## LED Avg.L Report

Test:U:48.00V I:0.4991A P:23.96W PF:1.000 Freq:50.00Hz Lamp Flux:1716.28x1 lm		
NAME: M20-T41004A-24G40-R24	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:436*21.6	Shielding Angle:

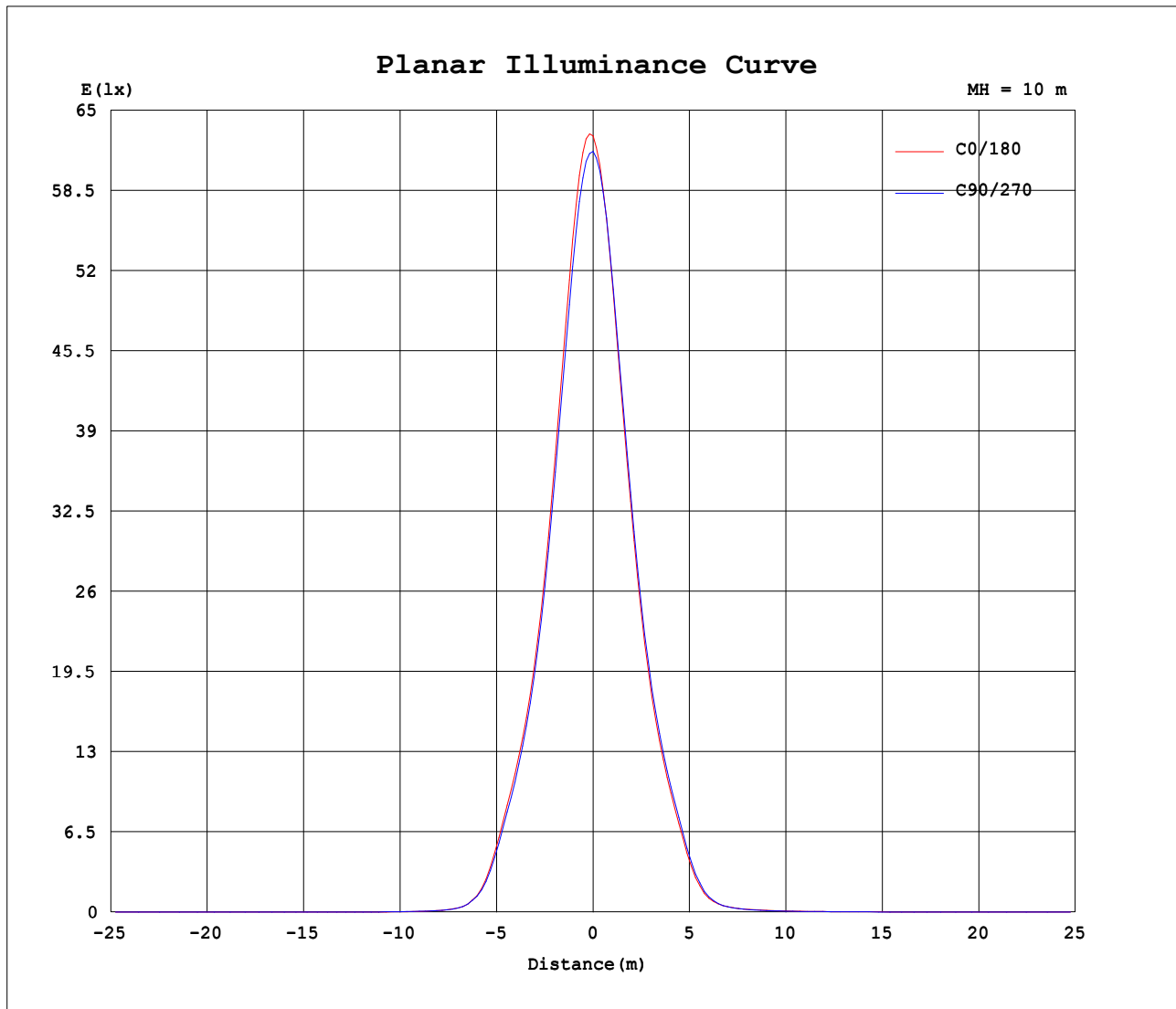
AvgL	cd/m2
L_0~180 (65) av	1365
L_0~180 (75) av	1811
L_0~180 (85) av	4459
L_90~270 (65) av	1384
L_90~270 (75) av	1842
L_90~270 (85) av	4546
L_45 (65) av	1407
L_45 (75) av	1858
L_45 (85) av	4602

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 15.0DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:ZR  
 Test Date:2021-08-18

γ Range: 0 - 90DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
 Humidity:65.0%  
 Test Distance:8.402m [K=1.0000]  
 Remarks:

## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 15.0DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: ZR  
Test Date: 2021-08-18

$\gamma$  Range: 0 - 90DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.354  
Humidity: 65.0%  
Test Distance: 8.402m [K=1.0000]  
Remarks:

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.354
Humidity:65.0%
Test Distance:8.402m [K=1.0000]
Remarks:

```

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000B_V1 SYSTEM V2.0.354
Humidity:65.0%
Test Distance:8.402m [K=1.0000]
Remarks:

```