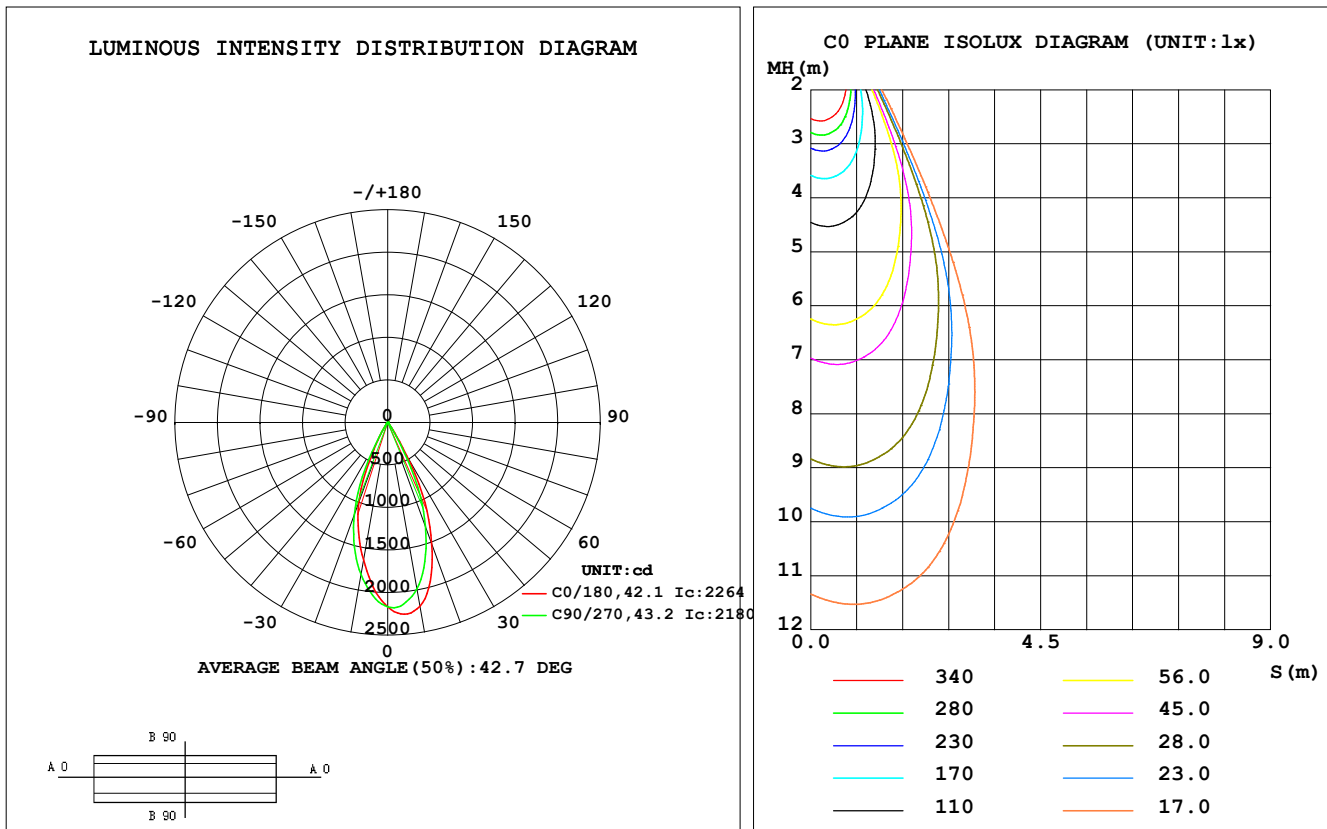


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:48.00V I:0.3052A P:14.65W PF:1.000 Freq:50.00Hz Lamp Flux:1104.98x1 lm		
NAME: M20-T41003A-18G30-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:328*21.6	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 75.43 lm/W			
MODEL	3000K CRI90	I <sub>max</sub> (cd)	2282	S/MH(C0/180)	0.60
NOMINAL POWER(W)	18	LOR(%)	100.0	S/MH(C90/270)	0.66
RATED VOLTAGE(V)	226	TOTAL FLUX(lm)	1105.0	η UP,DN(C0-180)	0.0,52.6
NOMINAL FLUX(lm)	1104.98	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,47.4
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50
TEST VOLTAGE(V)	225.1	η down(%)	100.0	CIBSE SHR MAX	0.70



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
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	2192	2137	1988	1737	1643	1642	1817	2019	0- 10	193.7	193.7	17.5,17.5
20	1516	1455	1302	1081	995.8	1006	1149	1362	10- 20	440.8	634.5	57.4,57.4
30	450.6	576.5	311.9	321.6	196.8	281.7	235.2	514.3	20- 30	356.5	991.0	89.7,89.7
40	27.89	58.16	22.40	33.75	28.34	40.73	28.33	65.56	30- 40	87.38	1078	97.6,97.6
50	3.877	5.861	3.232	4.554	11.14	13.04	11.82	15.81	40- 50	13.17	1092	98.8,98.8
60	0.5698	1.136	0.6701	0.9663	6.378	6.766	6.746	8.021	50- 60	5.164	1097	99.3,99.3
70	0.7678	0.7919	0.9073	0.9063	4.587	4.627	4.868	5.230	60- 70	3.250	1100	99.5,99.5
80	1.061	1.070	1.145	1.145	3.265	3.305	3.471	3.720	70- 80	2.724	1103	99.8,99.8
90	1.327	1.338	1.398	1.437	2.430	2.419	2.522	2.720	80- 90	2.306	1105	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): 1086.9 lm

%lum = 98.4%

%lamp = 98.4%

Conical surface Flux(120deg): 1096.7 lm

%lum = 99.3%

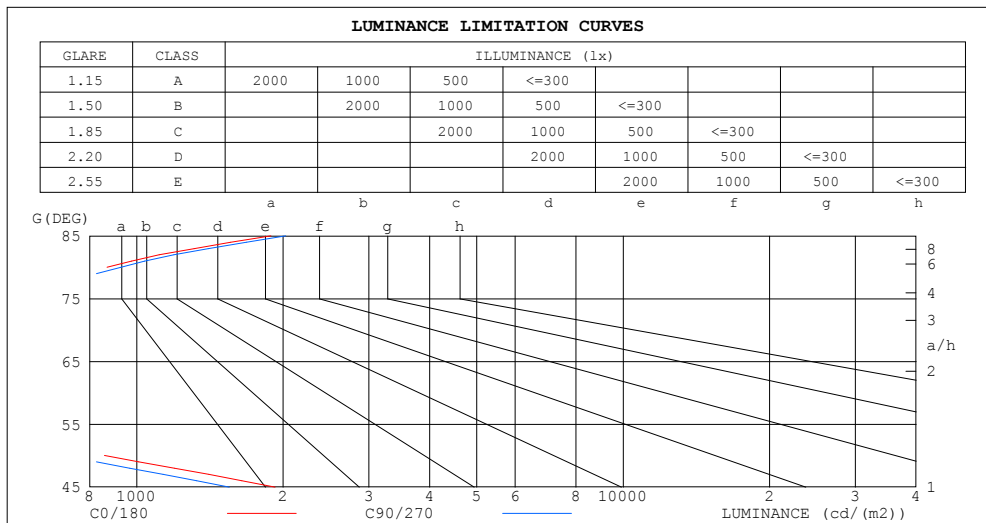
%lamp = 99.3%

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 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:0.3052A P:14.65W PF:1.000 Freq:50.00Hz Lamp Flux:1104.98x1 lm		
NAME: M20-T41003A-18G30-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:328*21.6	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	1886	2023
80	869	929
75	520	560
70	320	374
65	220	248
60	162	189
55	365	319
50	859	709
45	1924	1550

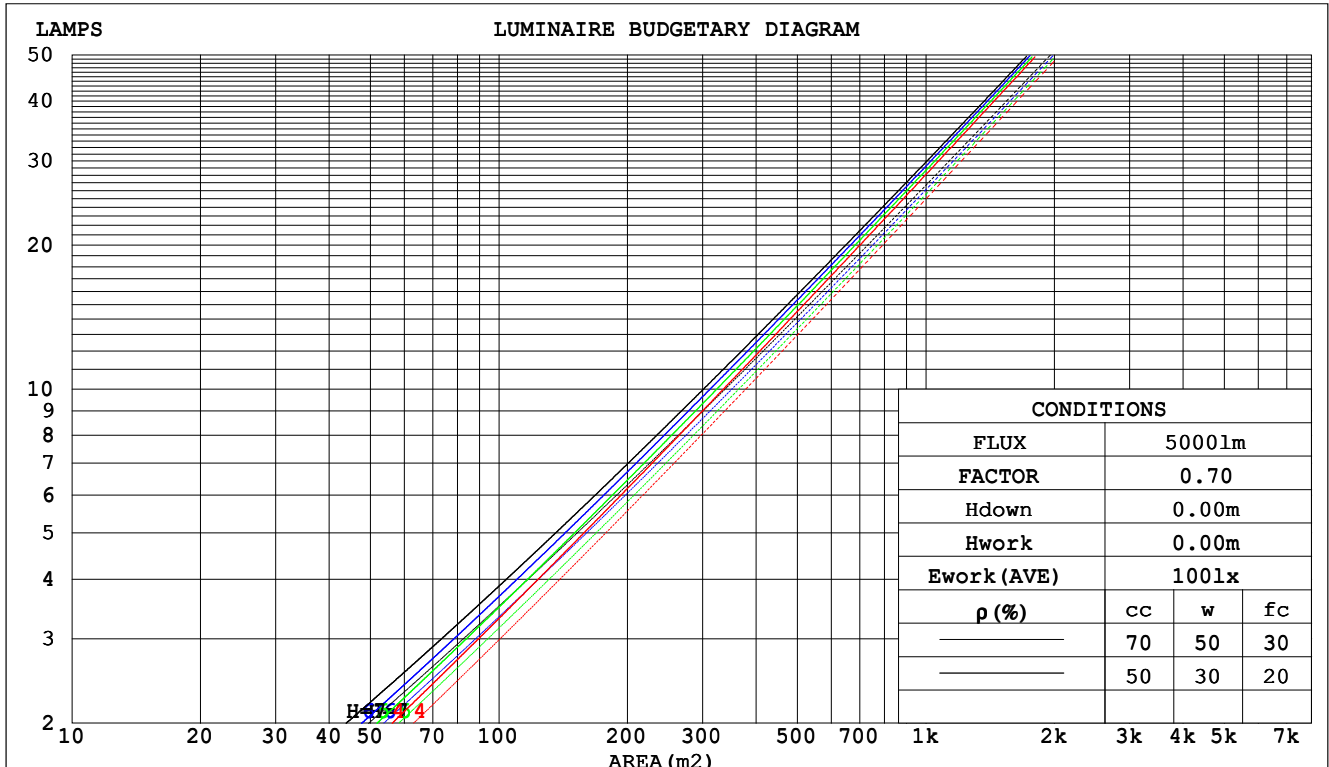
C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-18

$\gamma$  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:0.3052A P:14.65W PF:1.000 Freq:50.00Hz Lamp Flux:1104.98x1 lm		
NAME: M20-T41003A-18G30-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:328*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	1.09	1.07	1.10	1.08	1.06	1.06	1.04	1.02	1.02	1.01	.99	.98	.97	.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	.84	.89	.86	.83	.87	.85	.83	.81
5.0	.90	.85	.81	.89	.84	.81	.87	.83	.80	.85	.82	.79	.84	.81	.79	.77
6.0	.85	.80	.77	.85	.80	.76	.83	.79	.76	.82	.78	.75	.81	.77	.75	.74
7.0	.81	.76	.73	.81	.76	.73	.80	.75	.72	.78	.75	.72	.77	.74	.71	.70
8.0	.78	.73	.69	.77	.72	.69	.76	.72	.69	.75	.71	.69	.74	.71	.68	.67
9.0	.74	.69	.66	.74	.69	.66	.73	.69	.66	.72	.68	.66	.72	.68	.65	.64
10.0	.71	.66	.63	.71	.66	.63	.70	.66	.63	.70	.66	.63	.69	.65	.63	.62



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 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:0.3052A P:14.65W PF:1.000 Freq:50.00Hz Lamp Flux:1104.98x1 lm					
NAME: M20-T41003A-18G30-R36			TYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.:			SUR.:328*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	.160	.091	.029	.154	.088	.028	.141	.081	.026	.130	.075	.024	.119	.069	.022		
2.0	.150	.082	.025	.145	.080	.025	.134	.075	.023	.124	.070	.022	.116	.065	.021		
3.0	.141	.075	.023	.137	.073	.022	.128	.069	.021	.120	.066	.020	.112	.062	.019		
4.0	.134	.069	.020	.130	.068	.020	.122	.065	.019	.115	.062	.019	.109	.059	.018		
5.0	.127	.065	.019	.123	.063	.018	.117	.061	.018	.111	.058	.017	.105	.056	.017		
6.0	.121	.060	.017	.118	.059	.017	.112	.057	.017	.107	.055	.016	.102	.054	.016		
7.0	.115	.057	.016	.113	.056	.016	.108	.054	.016	.103	.053	.015	.099	.051	.015		
8.0	.110	.054	.015	.108	.053	.015	.104	.052	.015	.099	.050	.015	.096	.049	.014		
9.0	.106	.051	.014	.104	.051	.014	.100	.049	.014	.096	.048	.014	.093	.047	.014		
10.0	.102	.049	.014	.100	.048	.013	.096	.047	.013	.093	.046	.013	.090	.045	.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	.054	.070	.052	.038	.041	.031	.023	.013	.010	.008	
6.0	.111	.077	.053	.095	.067	.046	.066	.047	.032	.038	.027	.019	.012	.009	.006	
7.0	.104	.069	.045	.089	.060	.039	.062	.042	.028	.036	.025	.016	.012	.008	.005	
8.0	.098	.063	.038	.084	.054	.033	.058	.038	.024	.034	.022	.014	.011	.007	.005	
9.0	.093	.057	.033	.080	.050	.029	.055	.035	.021	.032	.021	.012	.010	.007	.004	
10.0	.088	.053	.029	.076	.046	.025	.053	.032	.018	.031	.019	.011	.010	.006	.004	

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
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:0.3052A P:14.65W PF:1.000 Freq:50.00Hz Lamp Flux:1104.98x1 lm											
NAME: M20-T41003A-18G30-R36					TYPE:			WEIGHT:			
SPEC.:					DIM.:			SERIAL No.:			
MFR.:					SUR.:328*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		12.2	13.0	12.4	13.2	13.3	10.6	11.4	10.8	11.5	11.7
	3H	12.1	12.8	12.3	13.0	13.2	10.4	11.2	10.7	11.4	11.6
	4H	12.0	12.7	12.2	12.9	13.1	10.4	11.1	10.6	11.3	11.5
	6H	11.9	12.6	12.2	12.8	13.1	10.3	11.0	10.6	11.2	11.5
	8H	11.9	12.5	12.2	12.8	13.0	10.3	11.0	10.6	11.2	11.5
	12H	11.9	12.5	12.2	12.8	13.0	10.4	11.0	10.7	11.2	11.5
4H	2H	12.0	12.7	12.2	12.9	13.1	10.3	11.0	10.6	11.2	11.5
	3H	11.8	12.4	12.1	12.7	12.9	10.2	10.8	10.5	11.0	11.3
	4H	11.7	12.3	12.1	12.6	12.9	10.1	10.7	10.4	11.0	11.3
	6H	11.7	12.2	12.0	12.5	12.8	10.1	10.6	10.5	10.9	11.3
	8H	11.7	12.1	12.1	12.5	12.8	10.1	10.6	10.5	10.9	11.3
	12H	11.7	12.1	12.1	12.5	12.9	10.2	10.6	10.6	11.0	11.4
8H	4H	11.6	12.0	12.0	12.4	12.8	10.0	10.4	10.4	10.8	11.1
	6H	11.6	11.9	12.0	12.3	12.7	10.0	10.4	10.4	10.8	11.2
	8H	11.6	11.9	12.0	12.3	12.8	10.1	10.4	10.5	10.8	11.3
	12H	11.7	12.0	12.1	12.4	12.9	10.3	10.6	10.7	11.0	11.5
12H	4H	11.5	12.0	11.9	12.3	12.7	9.9	10.4	10.3	10.7	11.1
	6H	11.5	11.8	12.0	12.3	12.7	10.0	10.3	10.4	10.7	11.2
	8H	11.6	11.8	12.0	12.3	12.8	10.1	10.4	10.5	10.8	11.3
Variations with the observer position at spacings:											
S = 1.0H	+ 2.8 / - 4.8					+ 2.2 / - 4.0					
1.5H	+ 5.2 / - 4.6					+ 4.4 / - 3.8					
2.0H	+ 2.3 / - 0.7					+ 1.7 / - 0.6					

CIE Pub.117, 1105 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 0.3)

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
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:0.3052A P:14.65W PF:1.000 Freq:50.00Hz Lamp Flux:1104.98x1 lm		
NAME: M20-T41003A-18G30-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:328*21.6	Shielding Angle:

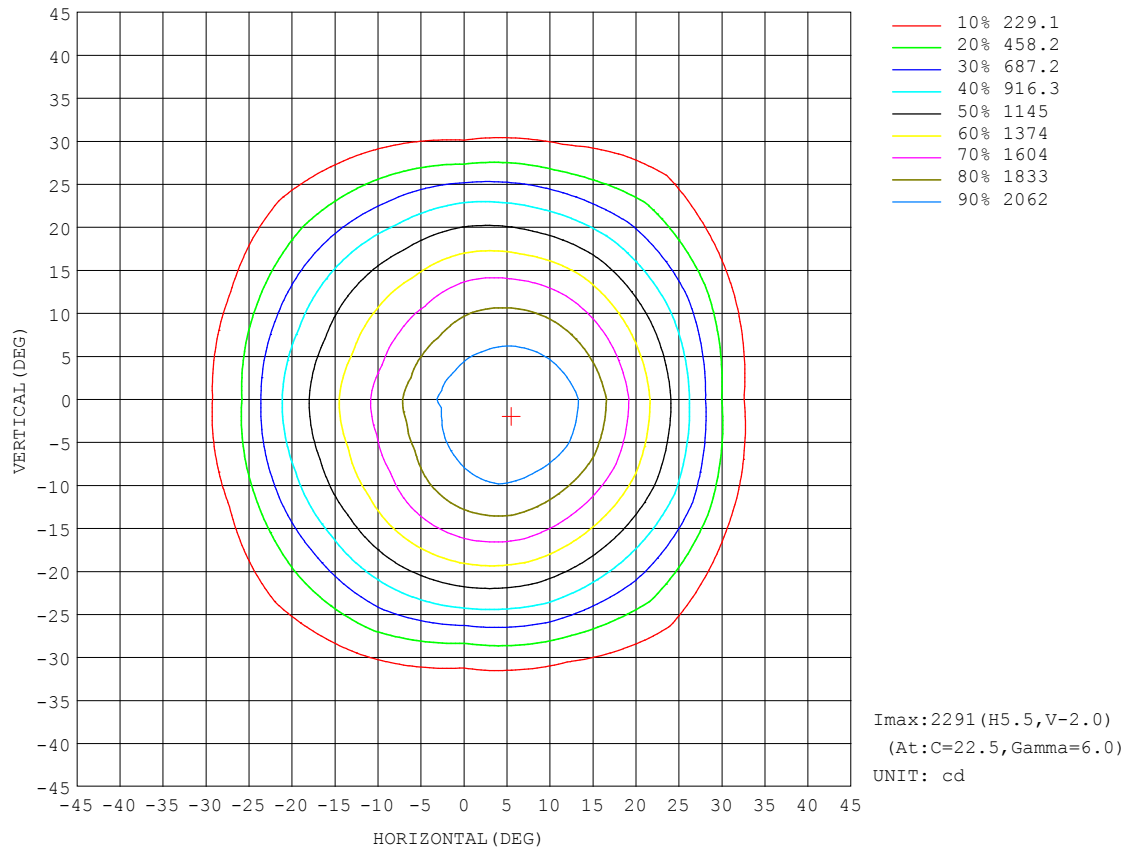
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	90	84	81	90	84	81	89	84	81	77
0.80	97	92	88	96	91	88	95	91	88	84
1.00	101	96	92	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	103	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	106	99
5.00	115	113	112	113	112	110	109	108	107	100
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
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:0.3052A P:14.65W PF:1.000 Freq:50.00Hz Lamp Flux:1104.98x1 lm		
NAME: M20-T41003A-18G30-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:328*21.6	Shielding Angle:



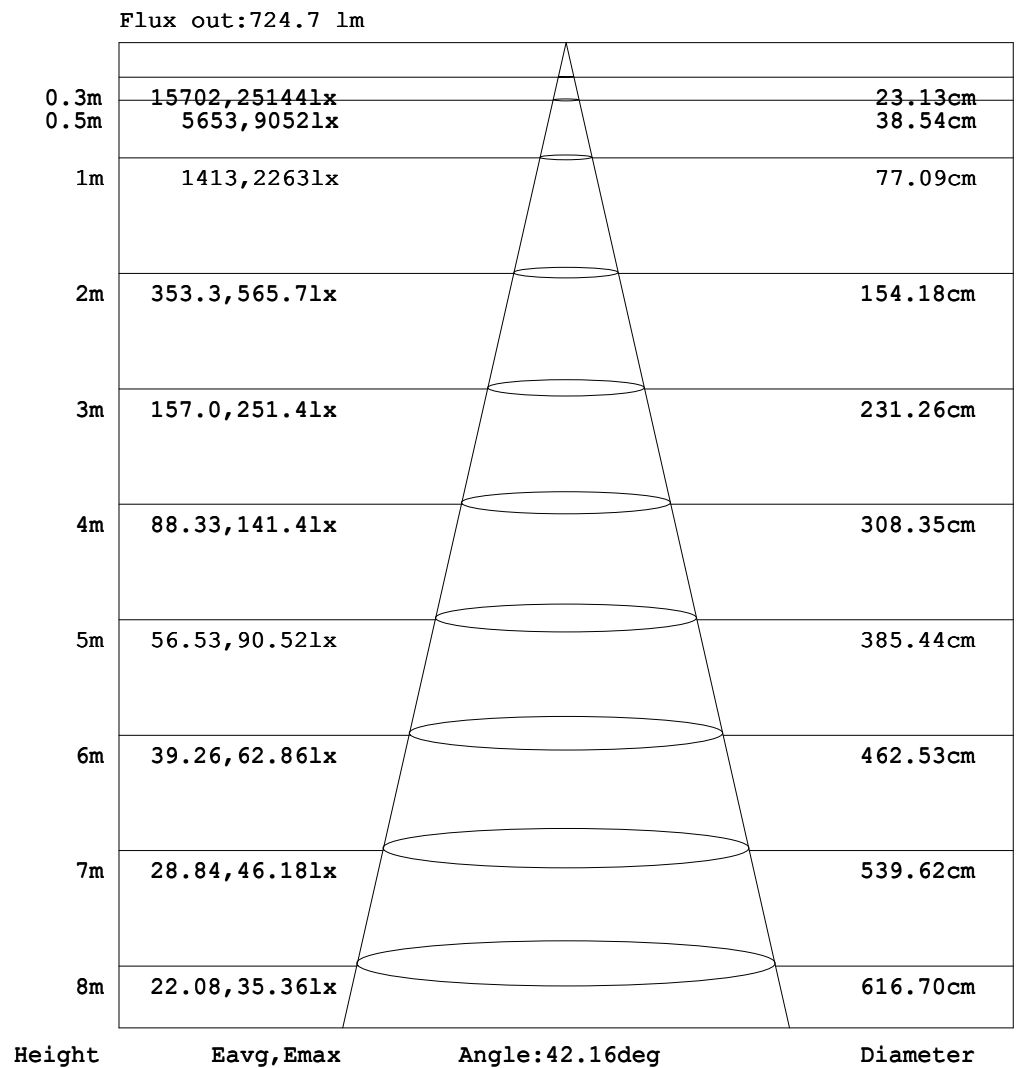
C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:ZR  
Test Date:2021-08-18

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:0.3052A P:14.65W PF:1.000 Freq:50.00Hz Lamp Flux:1104.98x1 lm		
NAME: M20-T41003A-18G30-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:328*21.6	Shielding Angle:



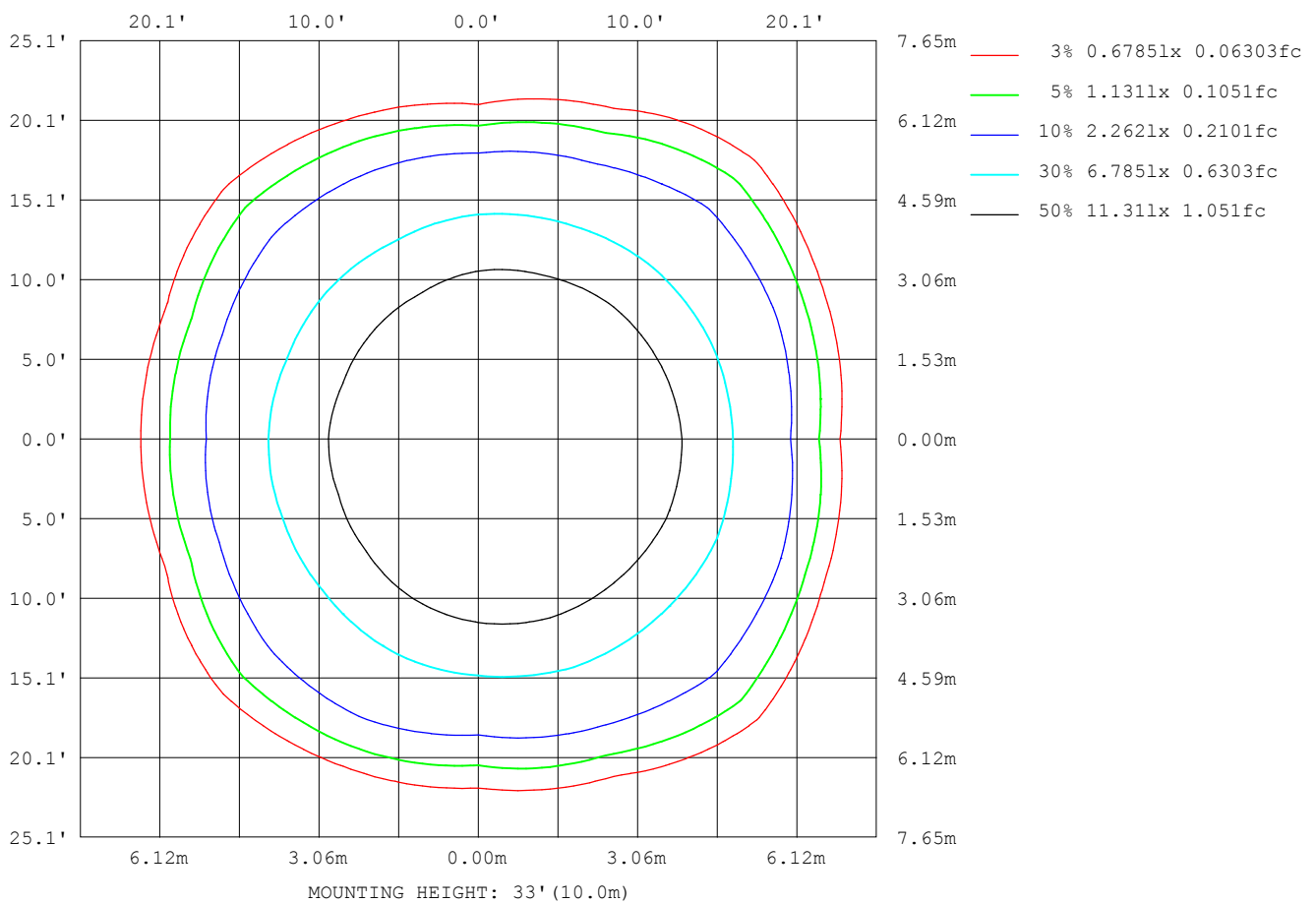
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
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:0.3052A P:14.65W PF:1.000 Freq:50.00Hz Lamp Flux:1104.98x1 lm		
NAME: M20-T41003A-18G30-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:328*21.6	Shielding Angle:



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
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:0.3052A P:14.65W PF:1.000 Freq:50.00Hz Lamp Flux:1104.98x1 lm		
NAME: M20-T41003A-18G30-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:328*21.6	Shielding Angle:

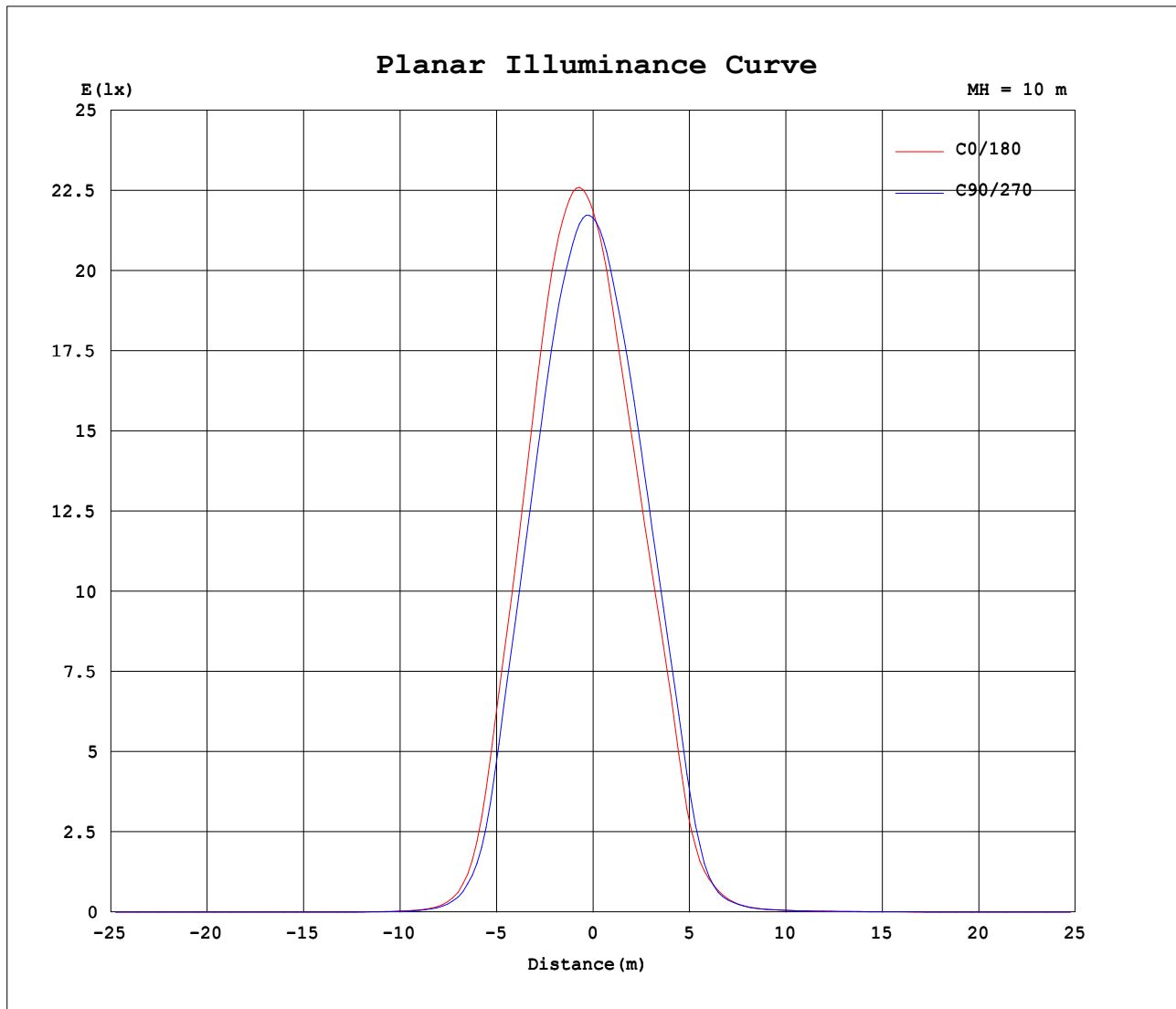
AvgL	cd/m2
L_0~180 (65) av	1012
L_0~180 (75) av	1313
L_0~180 (85) av	3219
L_90~270 (65) av	1076
L_90~270 (75) av	1400
L_90~270 (85) av	3392
L_45 (65) av	1100
L_45 (75) av	1400
L_45 (85) av	3398

Standard: GB/T 29293-2012

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 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: 22.5DEG  
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:

```