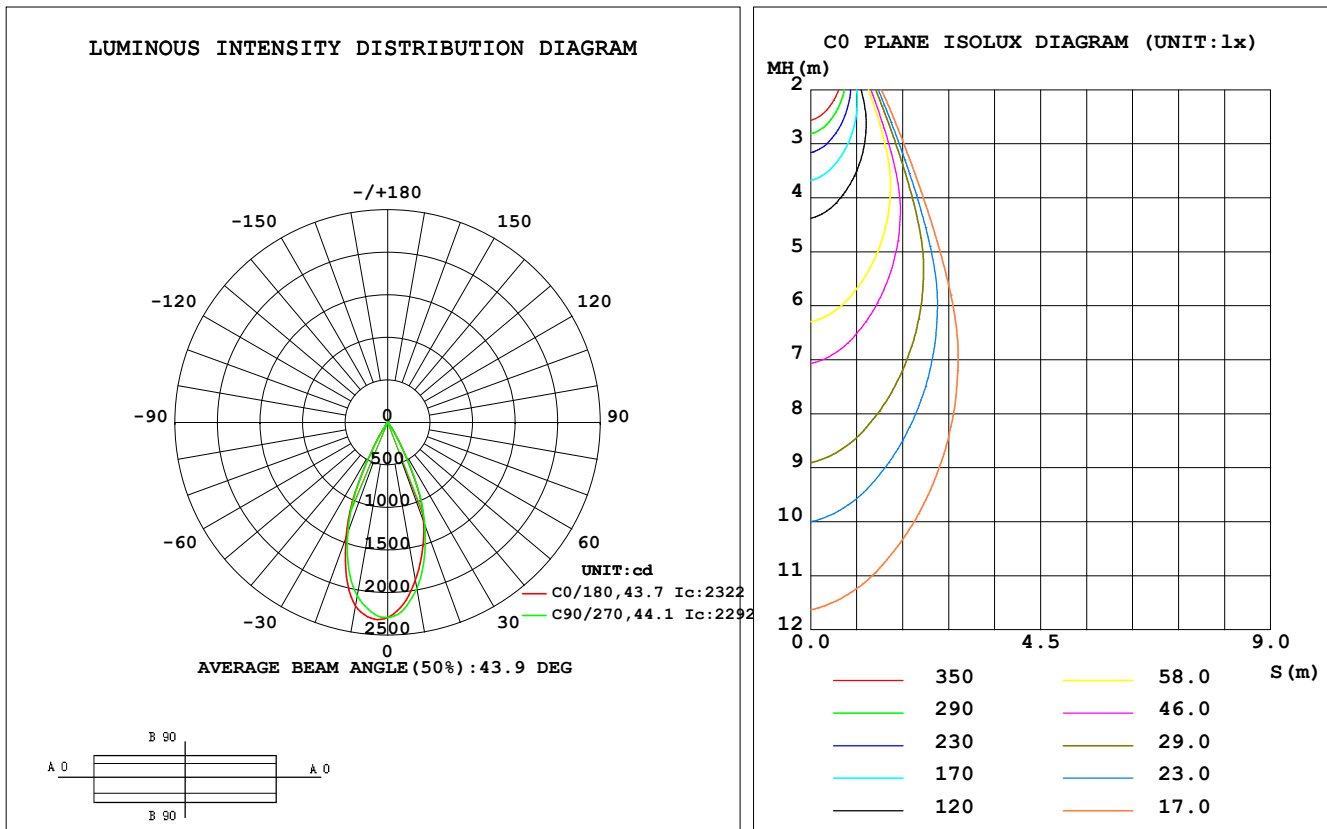


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:48.00V I:0.3042A P:14.60W PF:1.000 Freq:50.00Hz Lamp Flux:1183.23x1 lm		
NAME: M20-T41003A-18G40-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:328*21.6	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 81.03 lm/W			
MODEL	4000K CRI90	I _{max} (cd)	2322	S/MH(C0/180)	0.69
NOMINAL POWER(W)	18	LOR(%)	100.0	S/MH(C90/270)	0.68
RATED VOLTAGE(V)	226	TOTAL FLUX(lm)	1183.2	η UP,DN(C0-180)	0.0,48.3
NOMINAL FLUX(lm)	1183.23	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,51.7
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	225.1	η down(%)	100.0	CIBSE SHR MAX	0.75



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:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	1883	1883	1982	2070	2189	2121	2069	1947	0- 10	205.4	205.4	17.4,17.4
20	1234	1223	1277	1333	1431	1392	1374	1306	10- 20	469.1	674.5	57,57
30	318.0	424.9	305.1	460.6	332.6	495.8	319.2	468.5	20- 30	385.8	1060	89.6,89.6
40	31.29	51.20	25.07	42.79	31.84	52.85	30.01	64.97	30- 40	93.67	1154	97.5,97.5
50	3.889	6.057	3.411	4.941	13.10	15.11	12.95	16.16	40- 50	14.29	1168	98.7,98.7
60	0.7719	1.293	0.7704	1.041	7.603	8.065	7.505	8.169	50- 60	5.662	1174	99.2,99.2
70	0.9959	0.9957	1.018	0.9758	5.441	5.471	5.417	5.391	60- 70	3.631	1178	99.5,99.5
80	1.234	1.238	1.298	1.245	3.904	3.923	3.872	3.856	70- 80	3.045	1181	99.8,99.8
90	1.507	1.517	1.530	1.530	2.892	2.871	2.871	2.860	80- 90	2.580	1183	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): 1163.3 lm

%lum = 98.3%

%lamp = 98.3%

Conical surface Flux(120deg): 1174 lm

%lum = 99.2%

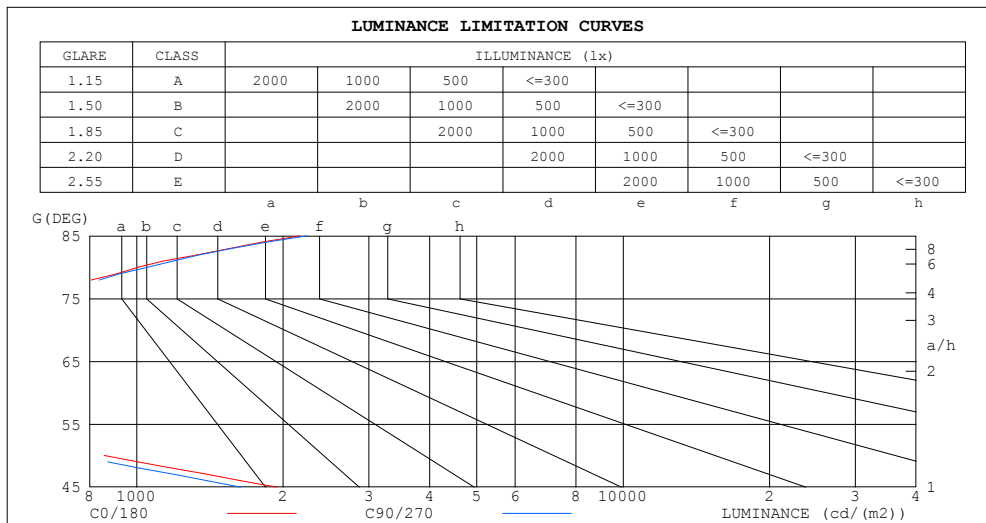
%lamp = 99.2%

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:

LUMINANCE LIMITATION CURVES

Test:U:48.00V I:0.3042A P:14.60W PF:1.000 Freq:50.00Hz Lamp Flux:1183.23x1 lm		
NAME: M20-T41003A-18G40-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:328*21.6	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	2168	2236
80	1007	1053
75	612	629
70	413	420
65	283	296
60	219	217
55	399	354
50	857	748
45	1937	1634

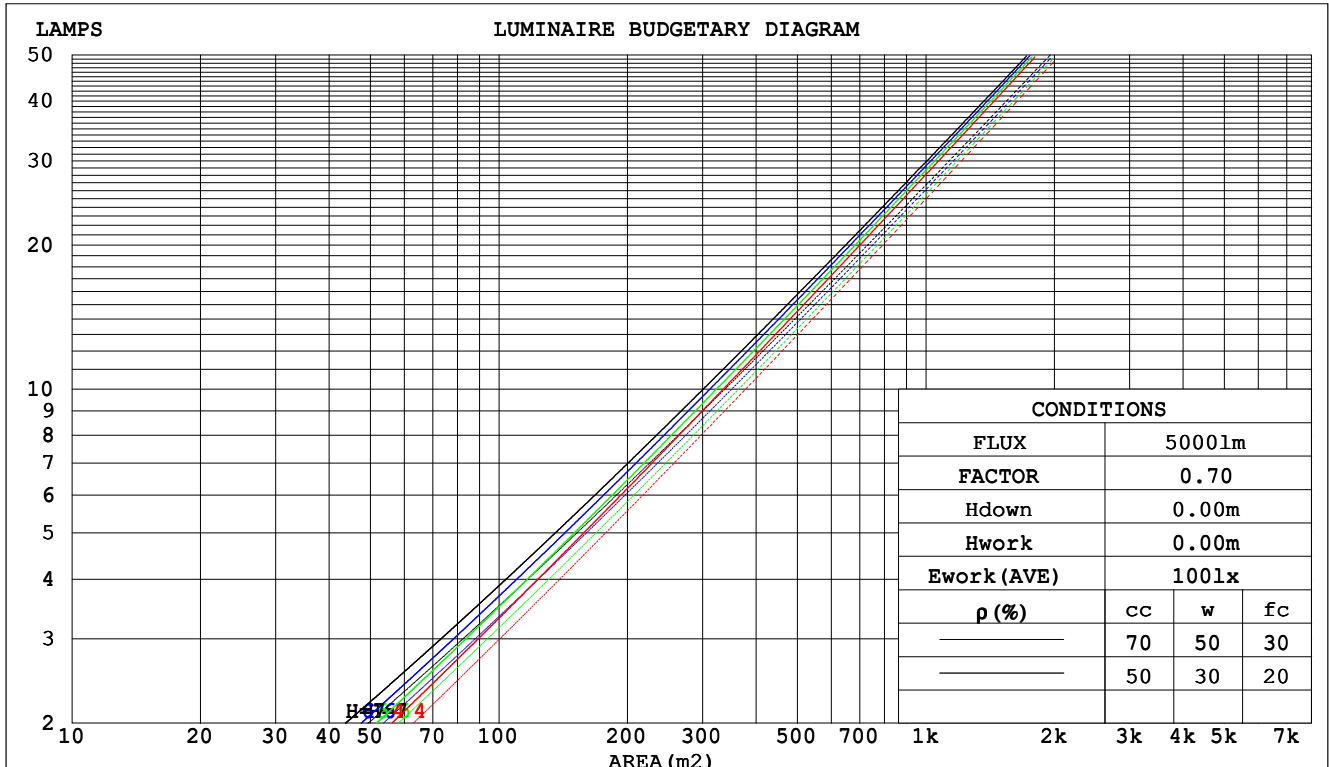
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-08-18

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:48.00V I:0.3042A P:14.60W PF:1.000 Freq:50.00Hz Lamp Flux:1183.23x1 lm		
NAME: M20-T41003A-18G40-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	1.00
1.0	1.12	1.09	1.07	1.10	1.08	1.06	1.05	1.04	1.02	1.02	1.01	.99	.98	.97	.97	.95
2.0	1.05	1.02	.99	1.03	1.00	.98	1.00	.98	.95	.97	.95	.93	.95	.93	.91	.90
3.0	.99	.95	.92	.98	.94	.91	.95	.92	.89	.93	.90	.88	.91	.89	.87	.85
4.0	.94	.89	.86	.93	.89	.85	.91	.87	.84	.89	.86	.83	.87	.85	.82	.81
5.0	.90	.85	.81	.89	.84	.80	.87	.83	.80	.85	.82	.79	.84	.81	.78	.77
6.0	.85	.80	.76	.84	.80	.76	.83	.79	.76	.82	.78	.75	.81	.77	.75	.73
7.0	.81	.76	.73	.81	.76	.72	.79	.75	.72	.78	.75	.72	.77	.74	.71	.70
8.0	.78	.73	.69	.77	.72	.69	.76	.72	.69	.75	.71	.68	.74	.71	.68	.67
9.0	.74	.69	.66	.74	.69	.66	.73	.69	.66	.72	.68	.65	.71	.68	.65	.64
10.0	.71	.66	.63	.71	.66	.63	.70	.66	.63	.69	.65	.63	.69	.65	.62	.61



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:0.3042A P:14.60W PF:1.000 Freq:50.00Hz Lamp Flux:1183.23x1 lm					
NAME: M20-T41003A-18G40-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	.161	.091	.029	.154	.088	.028	.141	.081	.026	.130	.075	.024	.119	.069	.022	
2.0	.150	.082	.025	.145	.080	.025	.135	.075	.023	.125	.070	.022	.116	.066	.021	
3.0	.142	.075	.023	.137	.073	.022	.128	.069	.021	.120	.066	.020	.112	.062	.019	
4.0	.134	.070	.020	.130	.068	.020	.122	.065	.019	.115	.062	.019	.109	.059	.018	
5.0	.127	.065	.019	.124	.063	.018	.117	.061	.018	.111	.059	.017	.105	.056	.017	
6.0	.121	.061	.017	.118	.060	.017	.112	.058	.017	.107	.056	.016	.102	.054	.016	
7.0	.116	.057	.016	.113	.056	.016	.108	.055	.016	.103	.053	.015	.099	.051	.015	
8.0	.111	.054	.015	.108	.053	.015	.104	.052	.015	.100	.051	.015	.096	.049	.014	
9.0	.106	.051	.014	.104	.051	.014	.100	.050	.014	.096	.048	.014	.093	.047	.014	
10.0	.102	.049	.014	.100	.048	.013	.097	.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	.092	.120	.098	.080	.082	.068	.056	.048	.040	.033	.015	.013	.011	
4.0	.128	.098	.075	.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	.052	.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:0.3042A P:14.60W PF:1.000 Freq:50.00Hz Lamp Flux:1183.23x1 lm											
NAME: M20-T41003A-18G40-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		10.0	10.8	10.3	11.0	11.2	9.6	10.4	9.8	10.6	10.7
	3H	9.9	10.6	10.1	10.8	11.0	9.5	10.2	9.7	10.4	10.6
	4H	9.8	10.5	10.1	10.8	11.0	9.4	10.1	9.7	10.3	10.5
	6H	9.8	10.5	10.1	10.7	10.9	9.4	10.0	9.7	10.3	10.5
	8H	9.8	10.5	10.1	10.7	11.0	9.4	10.0	9.7	10.3	10.5
	12H	9.9	10.5	10.2	10.7	11.0	9.5	10.1	9.8	10.3	10.6
4H	2H	9.8	10.5	10.1	10.7	10.9	9.4	10.1	9.6	10.3	10.5
	3H	9.6	10.3	10.0	10.5	10.8	9.2	9.8	9.5	10.1	10.4
	4H	9.6	10.2	9.9	10.5	10.8	9.2	9.7	9.5	10.0	10.3
	6H	9.6	10.1	10.0	10.4	10.8	9.2	9.7	9.6	10.0	10.4
	8H	9.7	10.1	10.0	10.5	10.8	9.3	9.7	9.6	10.1	10.4
	12H	9.8	10.2	10.2	10.6	11.0	9.4	9.8	9.8	10.2	10.6
8H	4H	9.5	9.9	9.9	10.3	10.6	9.0	9.5	9.4	9.9	10.2
	6H	9.5	9.9	10.0	10.3	10.7	9.1	9.5	9.5	9.9	10.3
	8H	9.6	10.0	10.1	10.4	10.8	9.3	9.6	9.7	10.0	10.4
	12H	9.9	10.2	10.4	10.6	11.1	9.5	9.8	10.0	10.3	10.7
12H	4H	9.4	9.9	9.8	10.2	10.6	9.0	9.4	9.4	9.8	10.2
	6H	9.5	9.8	10.0	10.3	10.7	9.1	9.4	9.6	9.9	10.3
	8H	9.7	10.0	10.1	10.4	10.9	9.3	9.6	9.8	10.0	10.5
Variations with the observer position at spacings:											
S = 1.0H	+ 2.9 / - 4.3					+ 2.5 / - 3.5					
1.5H	+ 5.3 / - 4.2					+ 4.7 / - 3.4					
2.0H	+ 1.8 / - 0.6					+ 1.4 / - 0.5					

CIE Pub.117, 1183 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 0.6)

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:0.3042A P:14.60W PF:1.000 Freq:50.00Hz Lamp Flux:1183.23x1 lm		
NAME: M20-T41003A-18G40-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:328*21.6	Shielding Angle:

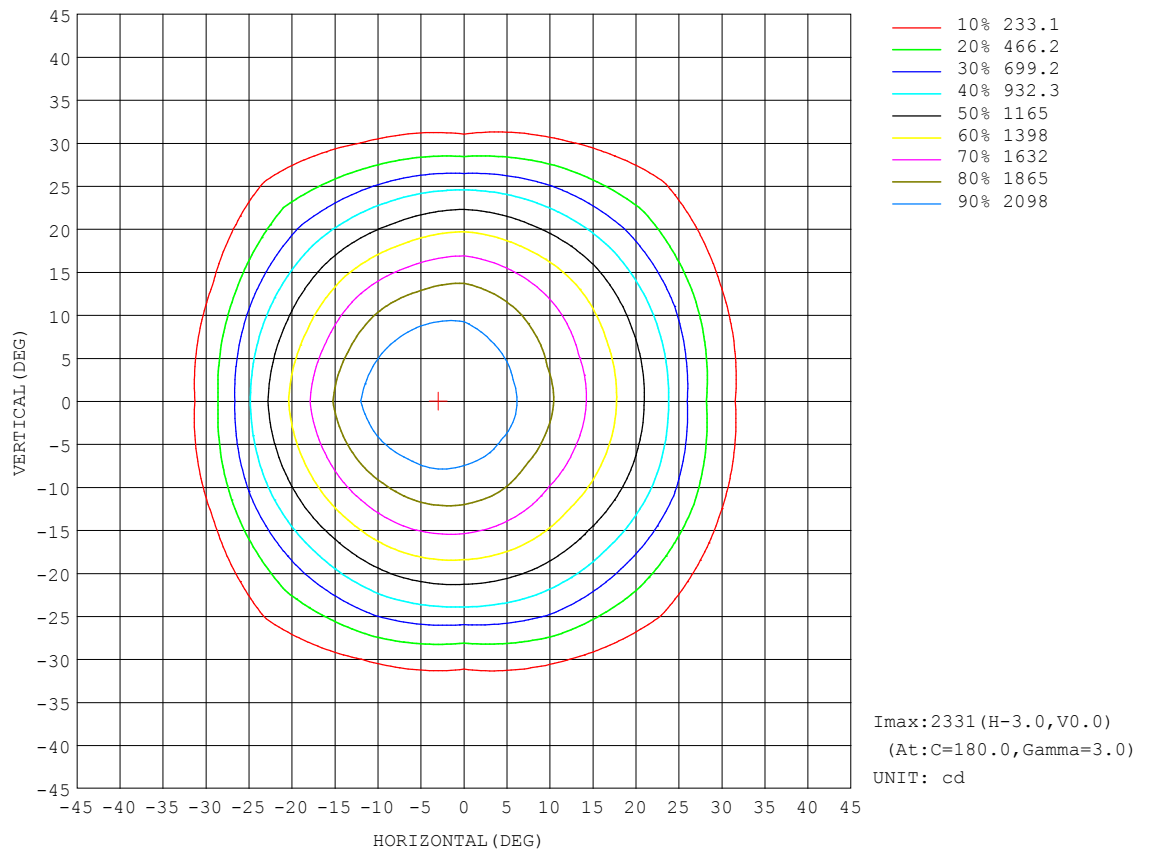
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	90	84	81	90	84	81	89	84	80	77
0.80	97	92	88	96	91	88	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	100	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: 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:

ISOCANDELA DIAGRAM

Test:U:48.00V I:0.3042A P:14.60W PF:1.000 Freq:50.00Hz Lamp Flux:1183.23x1 lm		
NAME: M20-T41003A-18G40-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:328*21.6	Shielding Angle:

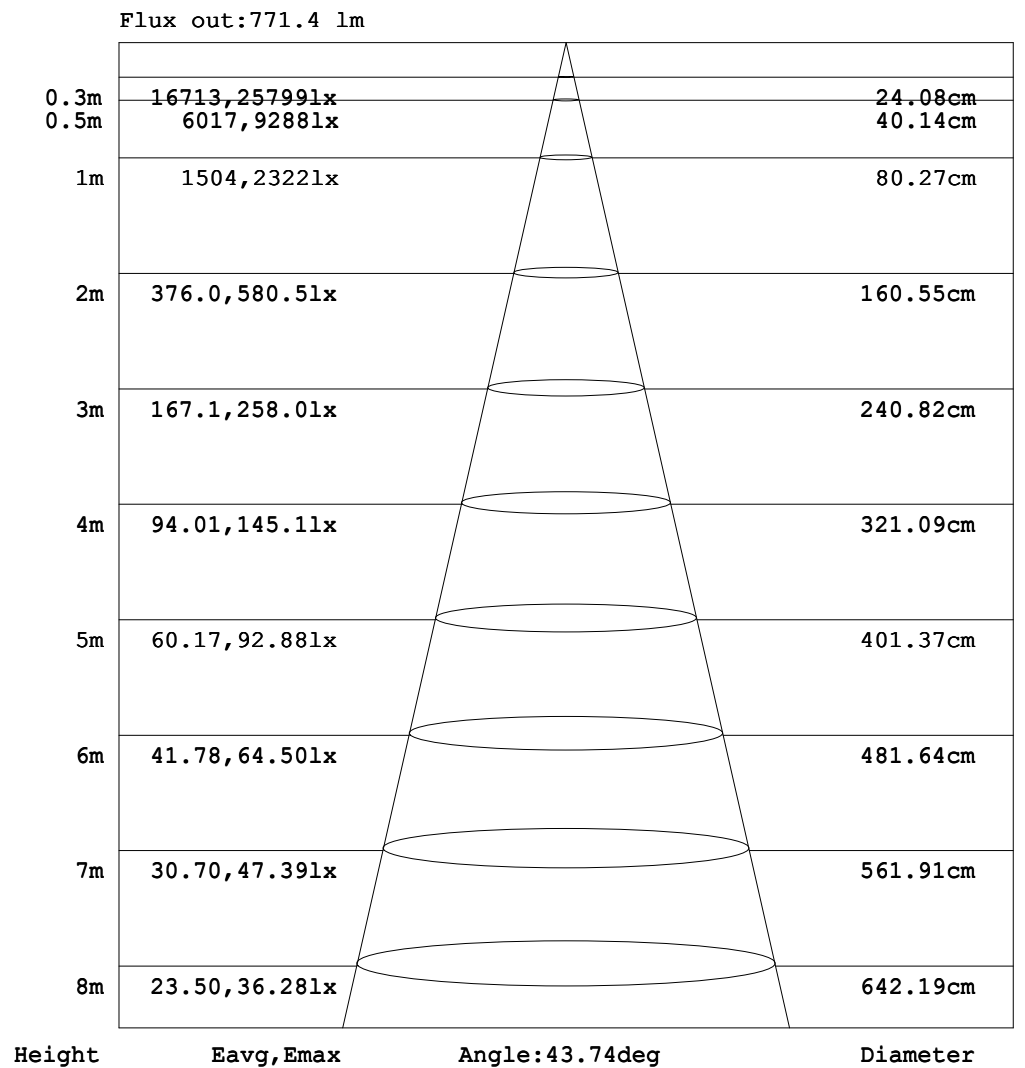


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-08-18

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:0.3042A P:14.60W PF:1.000 Freq:50.00Hz Lamp Flux:1183.23x1 lm		
NAME: M20-T41003A-18G40-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:328*21.6	Shielding Angle:



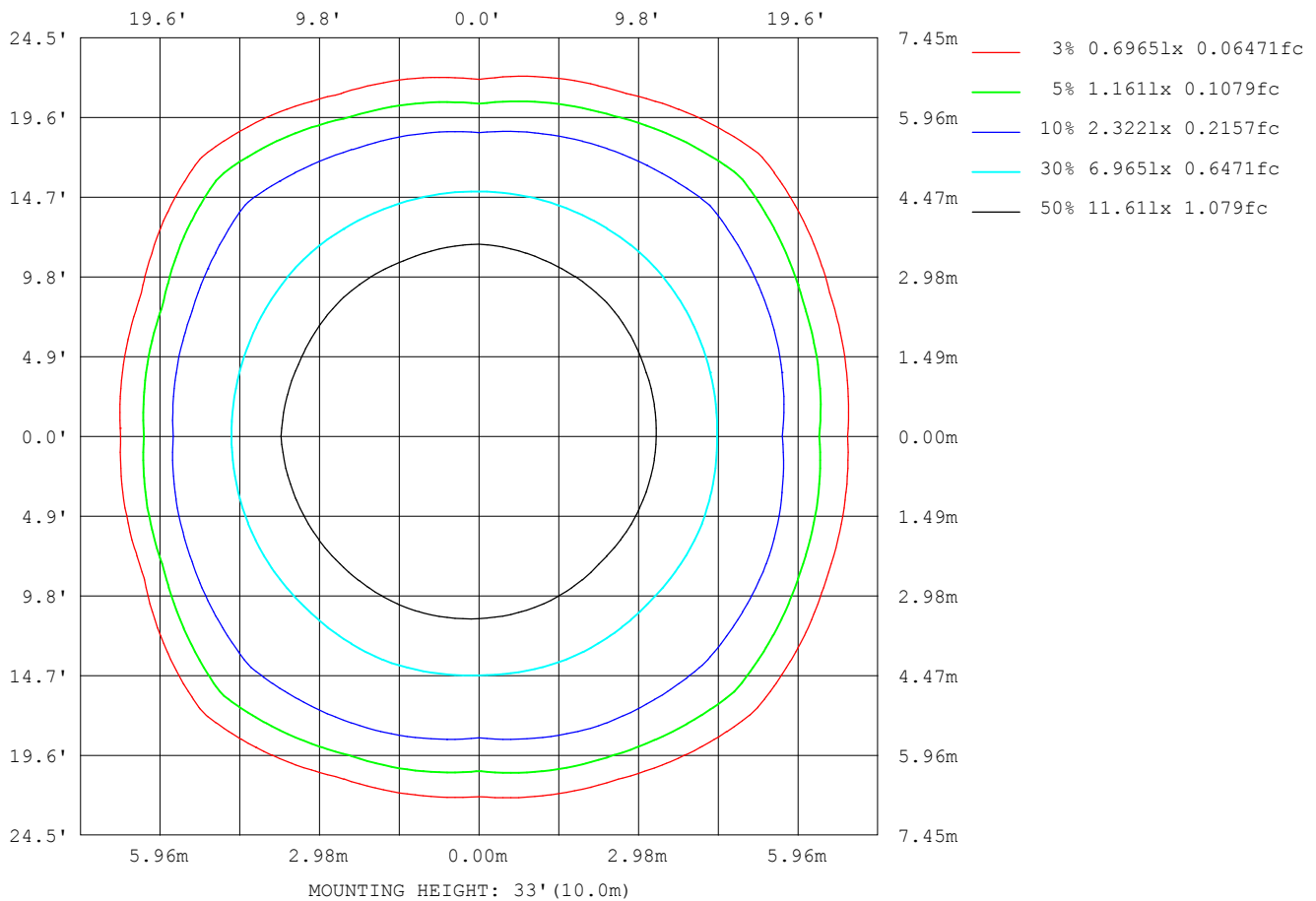
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:0.3042A P:14.60W PF:1.000 Freq:50.00Hz Lamp Flux:1183.23x1 lm		
NAME: M20-T41003A-18G40-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:0.3042A P:14.60W PF:1.000 Freq:50.00Hz Lamp Flux:1183.23x1 lm		
NAME: M20-T41003A-18G40-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:328*21.6	Shielding Angle:

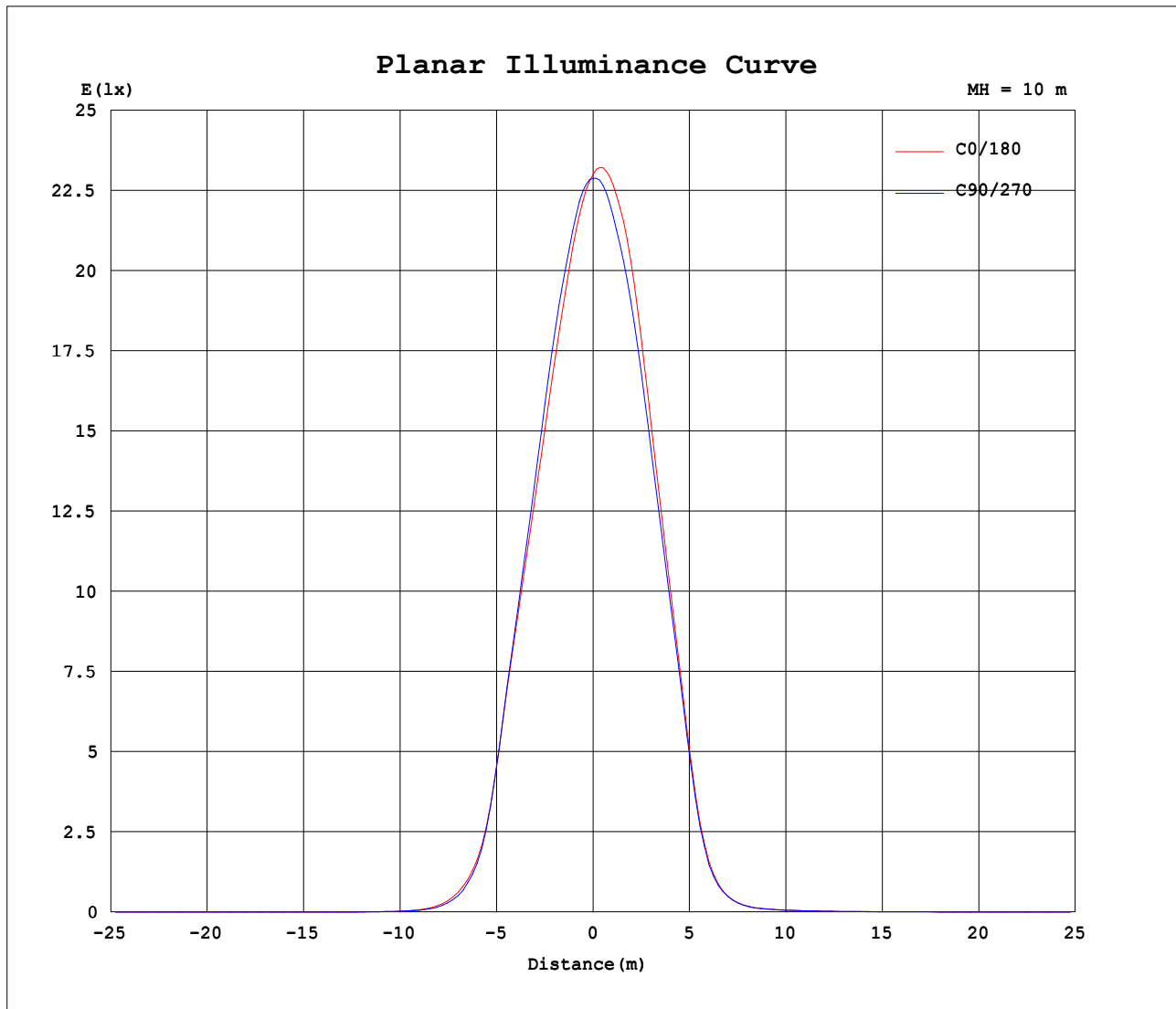
AvgL	cd/m2
L_0~180 (65) av	1206
L_0~180 (75) av	1566
L_0~180 (85) av	3770
L_90~270 (65) av	1203
L_90~270 (75) av	1568
L_90~270 (85) av	3793
L_45 (65) av	1216
L_45 (75) av	1552
L_45 (85) av	3775

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

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:

```