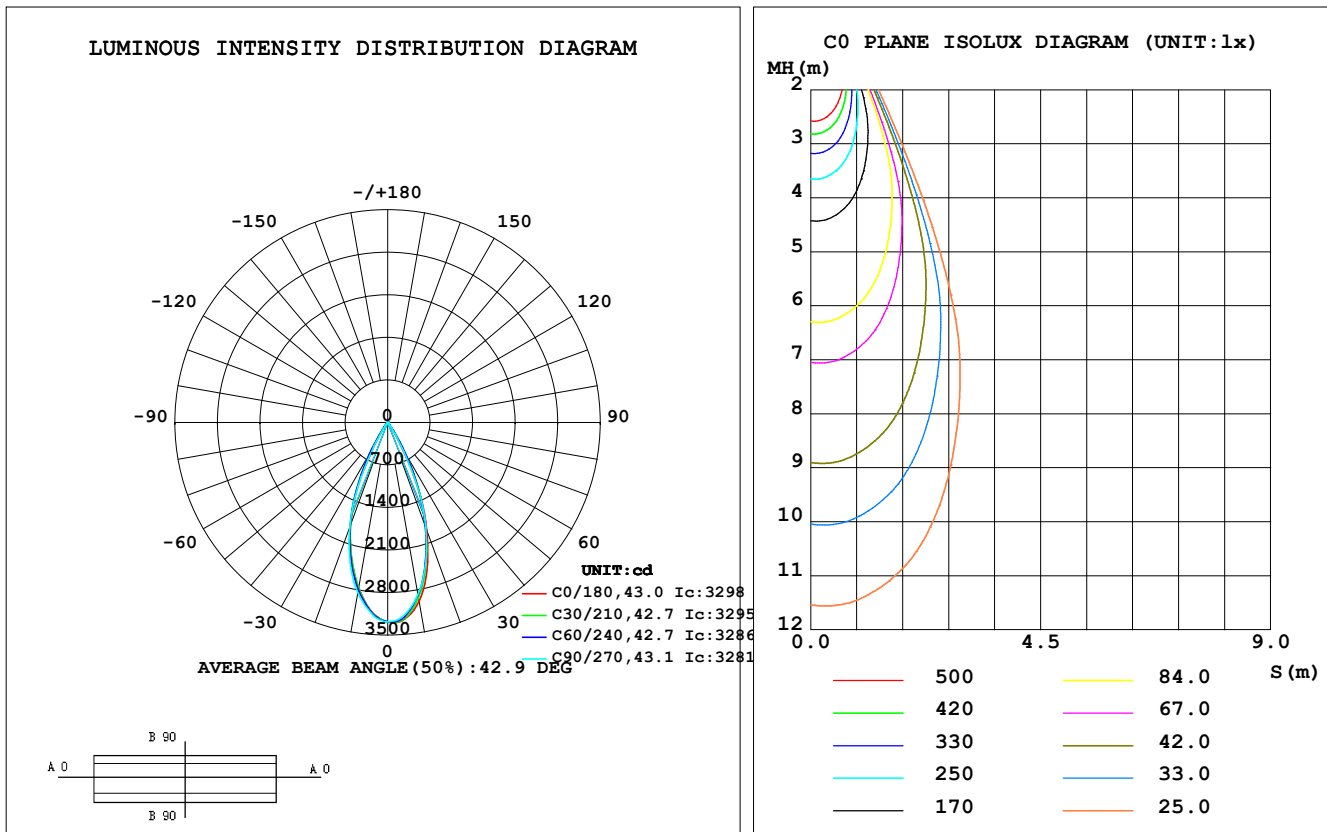


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:48.00V I:0.4991A P:23.96W PF:1.000 Freq:50.00Hz Lamp Flux:1652.92x1 lm					
NAME: M20-T41004A-24G40-R36		TYPE:		WEIGHT:	
SPEC.:		DIM.:		SERIAL No.:	
MFR.:		SUR.:436*21.6		Shielding Angle:	

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 69.00 lm/W
MODEL	4000K CRI90	I _{max} (cd)	3299	S/MH(C0/180)	0.67	
NOMINAL POWER(W)	24	LOR(%)	100.0	S/MH(C90/270)	0.67	
RATED VOLTAGE(V)	226	TOTAL FLUX(lm)	1652.9	η UP,DN(C0-180)	0.0,49.4	
NOMINAL FLUX(lm)	1652.92	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,50.6	
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: 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:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	2991	2906	2879	2776	2759	2750	2848	2892	0- 10	292.4	292.4	17.7,17.7
20	1882	1836	1833	1789	1786	1779	1831	1840	10- 20	655.4	947.8	57.3,57.3
30	420.8	640.9	439.9	628.2	466.2	621.8	442.7	642.9	20- 30	530.3	1478	89.4,89.4
40	31.65	64.02	37.00	77.03	61.15	87.58	44.79	77.86	30- 40	131.8	1610	97.4,97.4
50	4.974	8.143	5.617	9.655	19.55	22.48	18.18	21.55	40- 50	20.96	1631	98.7,98.7
60	1.330	1.906	1.363	2.177	10.74	11.57	10.64	11.41	50- 60	8.292	1639	99.2,99.2
70	1.673	1.704	1.685	1.718	7.765	7.840	7.756	7.848	60- 70	5.327	1644	99.5,99.5
80	2.057	2.072	2.038	2.078	5.693	5.742	5.692	5.753	70- 80	4.546	1649	99.8,99.8
90	2.484	2.523	2.429	2.492	4.302	4.316	4.278	4.326	80- 90	3.927	1653	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): 1623.5 lm

%lum = 98.2%

%lamp = 98.2%

Conical surface Flux(120deg): 1639.1 lm

%lum = 99.2%

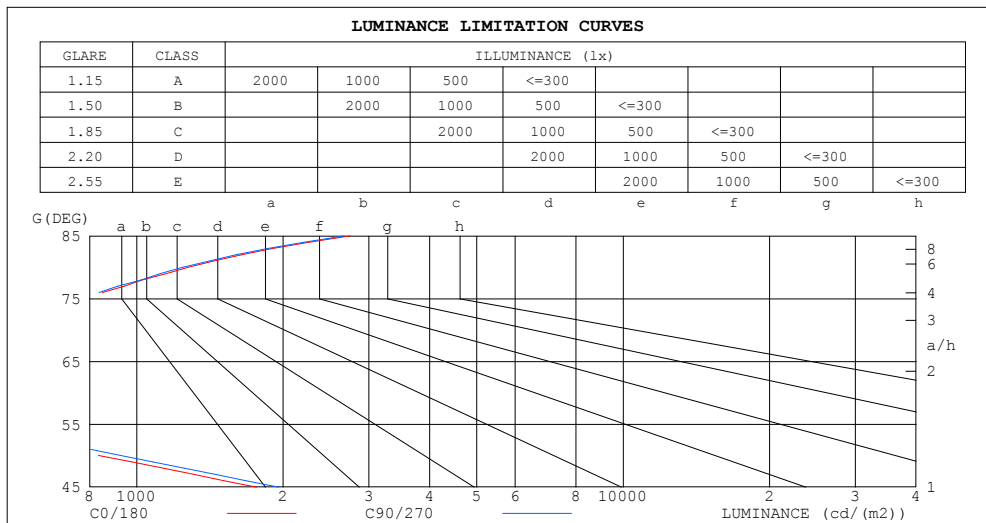
%lamp = 99.2%

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

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:0.4991A P:23.96W PF:1.000 Freq:50.00Hz Lamp Flux:1652.92x1 lm		
NAME: M20-T41004A-24G40-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:436*21.6	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	2748	2671
80	1276	1244
75	787	765
70	527	522
65	376	375
60	287	289
55	409	460
50	833	926
45	1762	1956

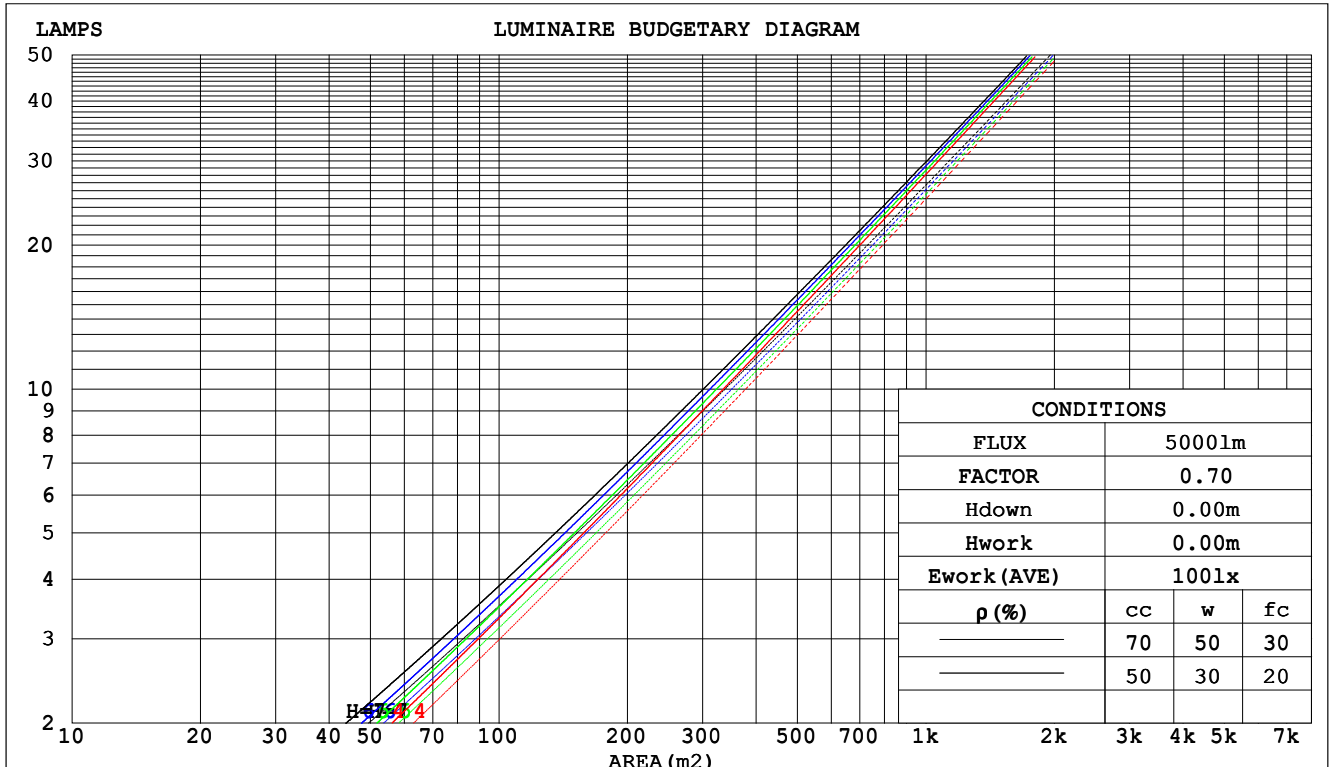
C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-08-18

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:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:48.00V I:0.4991A P:23.96W PF:1.000 Freq:50.00Hz Lamp Flux:1652.92x1 lm		
NAME: M20-T41004A-24G40-R36	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	1.09	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	.81	.87	.83	.80	.85	.82	.79	.84	.81	.78	.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	.72	.80	.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	.72	.68	.65	.64
10.0	.71	.66	.63	.71	.66	.63	.70	.66	.63	.69	.66	.63	.69	.65	.63	.61



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:1652.92x1 lm					
NAME: M20-T41004A-24G40-R36			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	.161	.091	.029	.154	.088	.028	.142	.081	.026	.130	.075	.024	.120	.069	.022		
2.0	.151	.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	.115	.057	.016	.113	.056	.016	.108	.055	.016	.103	.053	.015	.099	.051	.015		
8.0	.110	.054	.015	.108	.053	.015	.104	.052	.015	.100	.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	.099	.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: 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:1652.92x1 lm										
NAME: M20-T41004A-24G40-R36					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	7.6	8.5	7.9	8.6	8.8	8.2	9.0	8.4	9.1	9.3
	3H	7.5	8.3	7.8	8.5	8.7	8.0	8.8	8.3	9.0
	4H	7.5	8.2	7.8	8.4	8.6	8.0	8.7	8.3	8.9
	6H	7.5	8.2	7.8	8.4	8.7	8.0	8.7	8.3	8.9
	8H	7.6	8.2	7.9	8.5	8.7	8.0	8.7	8.3	8.9
	12H	7.7	8.3	8.0	8.6	8.9	8.2	8.8	8.5	9.0
4H	2H	7.4	8.1	7.7	8.3	8.6	7.9	8.6	8.2	8.8
	3H	7.3	7.9	7.6	8.2	8.4	7.8	8.4	8.1	8.7
	4H	7.3	7.8	7.6	8.1	8.4	7.8	8.3	8.1	8.6
	6H	7.4	7.9	7.8	8.2	8.6	7.9	8.3	8.2	8.7
	8H	7.6	8.0	7.9	8.4	8.7	8.0	8.4	8.4	8.8
	12H	7.8	8.3	8.3	8.6	9.0	8.2	8.6	8.6	9.0
8H	4H	7.2	7.7	7.6	8.0	8.4	7.7	8.1	8.1	8.5
	6H	7.4	7.8	7.8	8.2	8.6	7.8	8.2	8.3	8.6
	8H	7.7	8.0	8.1	8.4	8.9	8.1	8.4	8.5	8.8
	12H	8.2	8.5	8.6	8.9	9.4	8.5	8.8	8.9	9.2
12H	4H	7.2	7.6	7.6	8.0	8.3	7.6	8.1	8.1	8.4
	6H	7.4	7.8	7.9	8.2	8.6	7.8	8.2	8.3	8.6
	8H	7.8	8.0	8.2	8.5	8.9	8.1	8.4	8.6	8.9
Variations with the observer position at spacings:										
S = 1.0H	+ 2.1 / - 2.3					+ 2.4 / - 2.8				
1.5H	+ 4.2 / - 2.2					+ 4.5 / - 2.7				
2.0H	+ 0.9 / - 0.3					+ 1.2 / - 0.4				

CIE Pub.117, 1653 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 1.7)

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:1652.92x1 lm		
NAME: M20-T41004A-24G40-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:436*21.6	Shielding Angle:

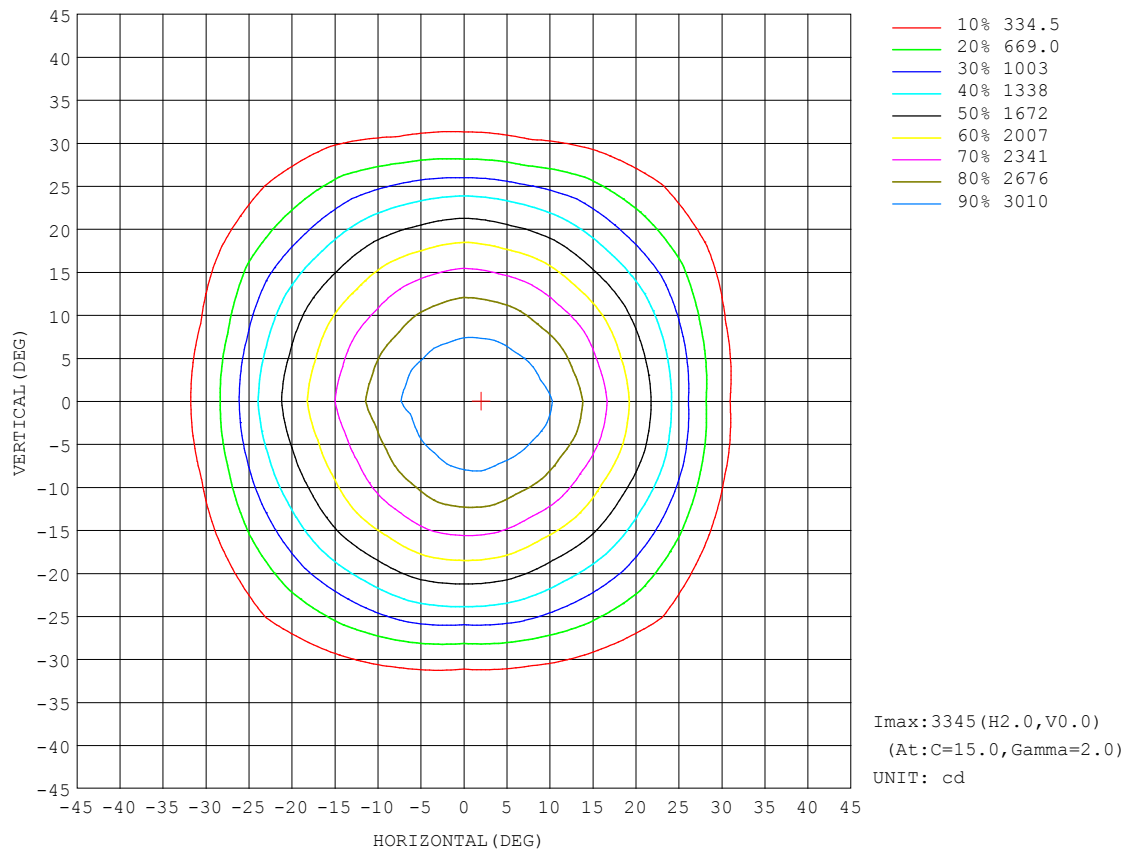
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	90	84	81	89	84	80	89	84	80	77
0.80	97	92	88	96	91	88	95	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	104	109	106	104	106	104	102	96
3.00	112	109	106	111	108	105	107	105	103	97
4.00	114	112	110	112	110	108	109	107	105	98
5.00	115	113	112	113	111	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

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:0.4991A P:23.96W PF:1.000 Freq:50.00Hz Lamp Flux:1652.92x1 lm		
NAME: M20-T41004A-24G40-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:436*21.6	Shielding Angle:

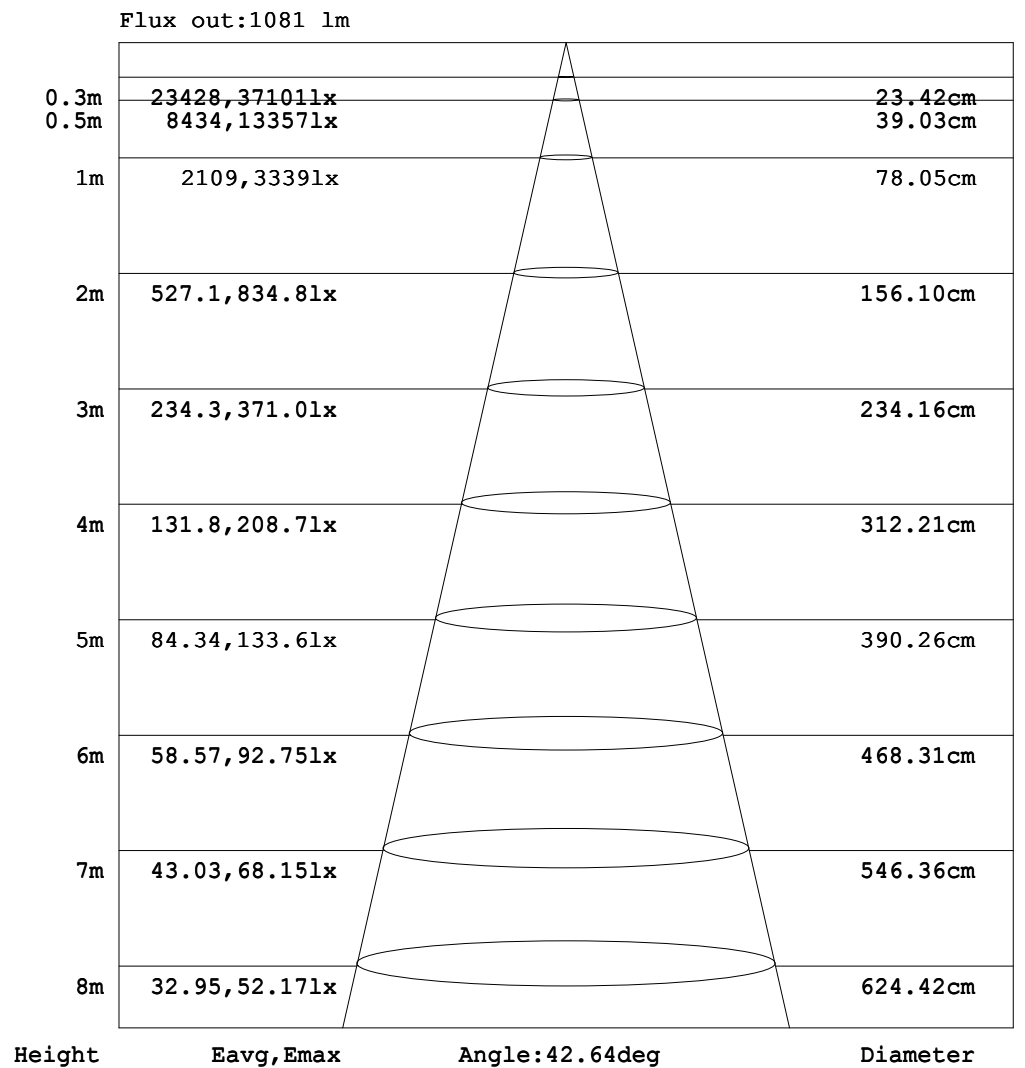


C Range: 0 - 360DEG
C Interval: 15.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-08-18

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:1652.92x1 lm		
NAME: M20-T41004A-24G40-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:436*21.6	Shielding Angle:



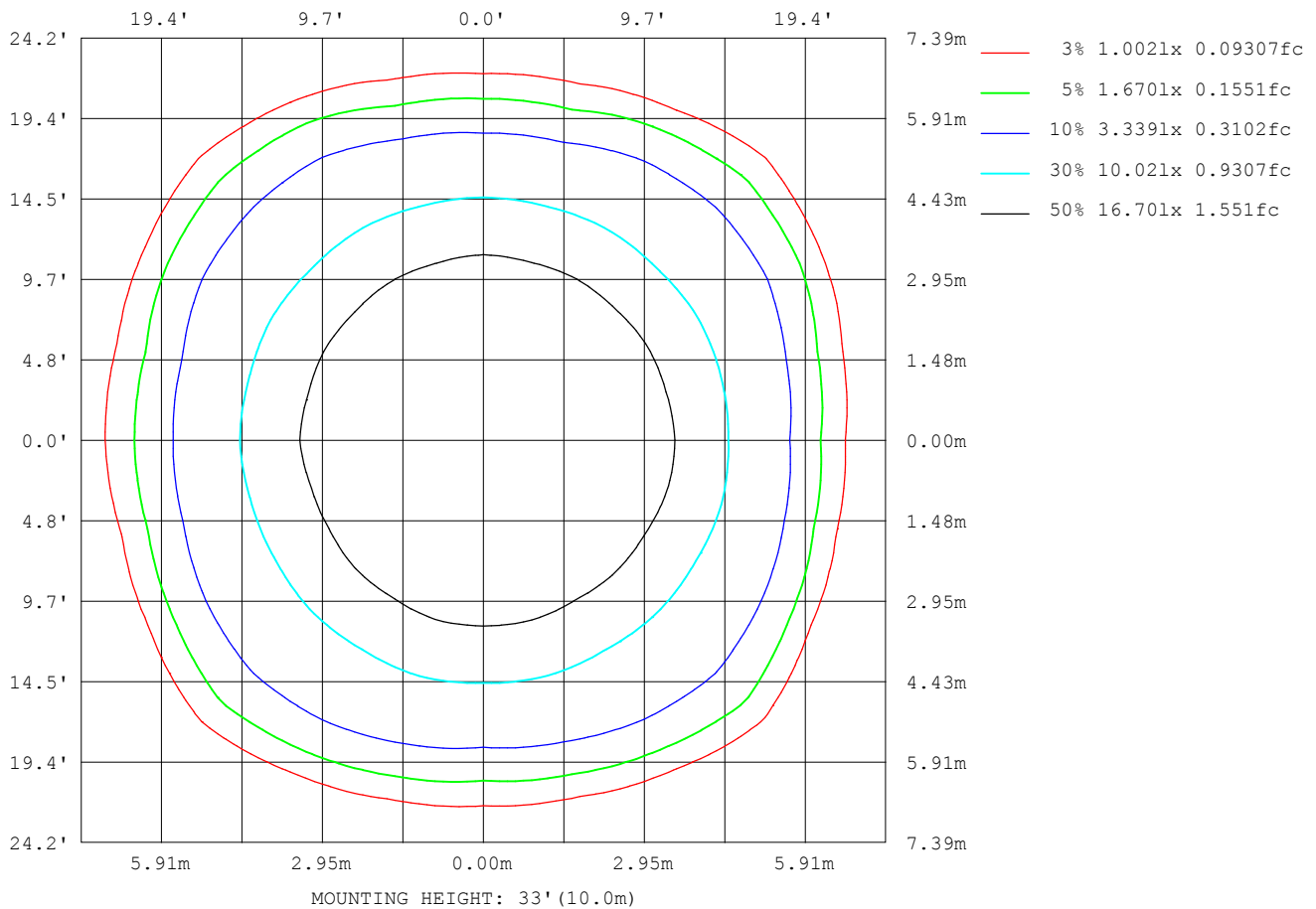
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:1652.92x1 lm		
NAME: M20-T41004A-24G40-R36	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:1652.92x1 lm		
NAME: M20-T41004A-24G40-R36	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:436*21.6	Shielding Angle:

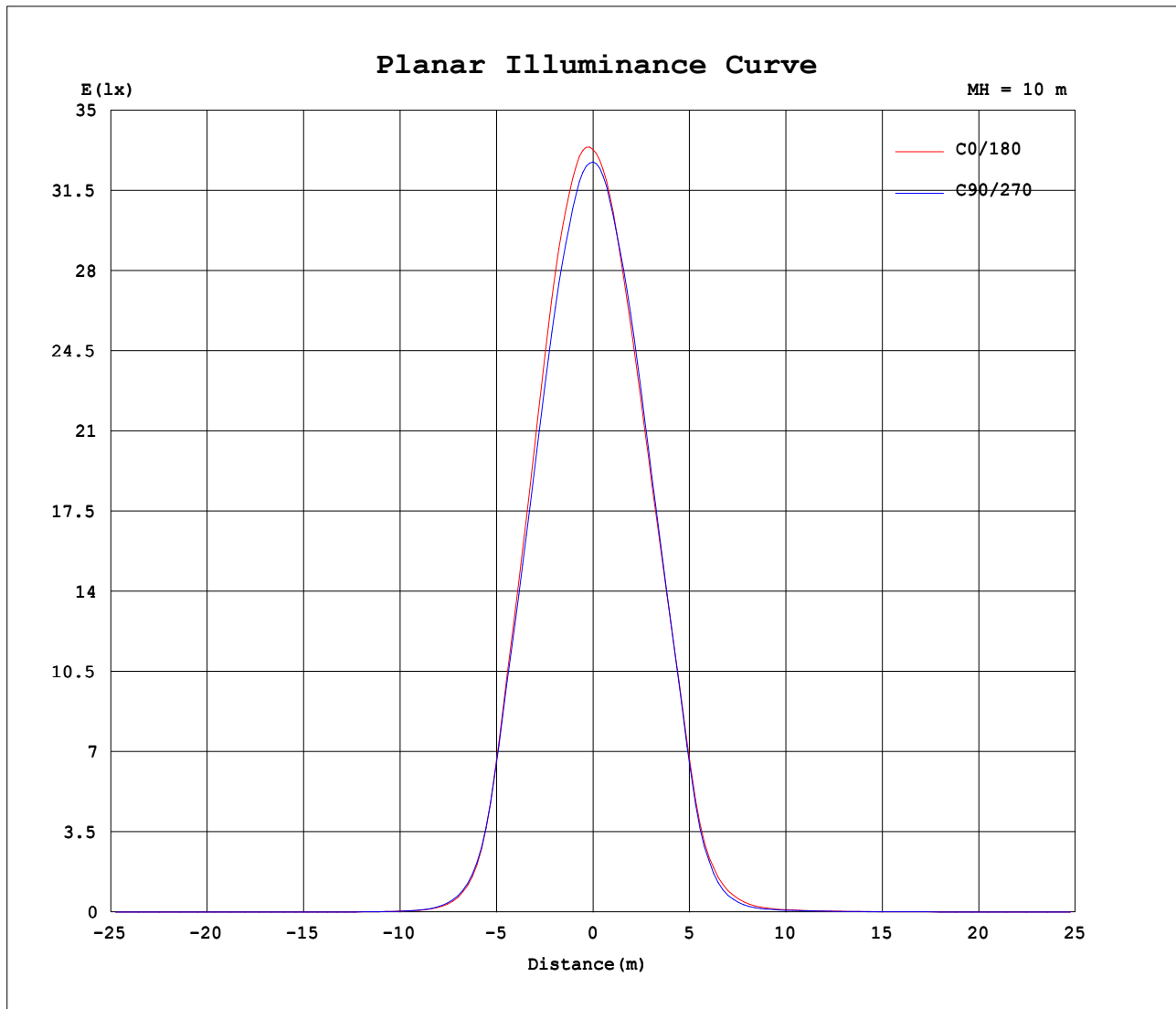
AvgL	cd/m2
L_0~180 (65) av	1323
L_0~180 (75) av	1755
L_0~180 (85) av	4339
L_90~270 (65) av	1318
L_90~270 (75) av	1749
L_90~270 (85) av	4310
L_45 (65) av	1345
L_45 (75) av	1769
L_45 (85) av	4399

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

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]
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