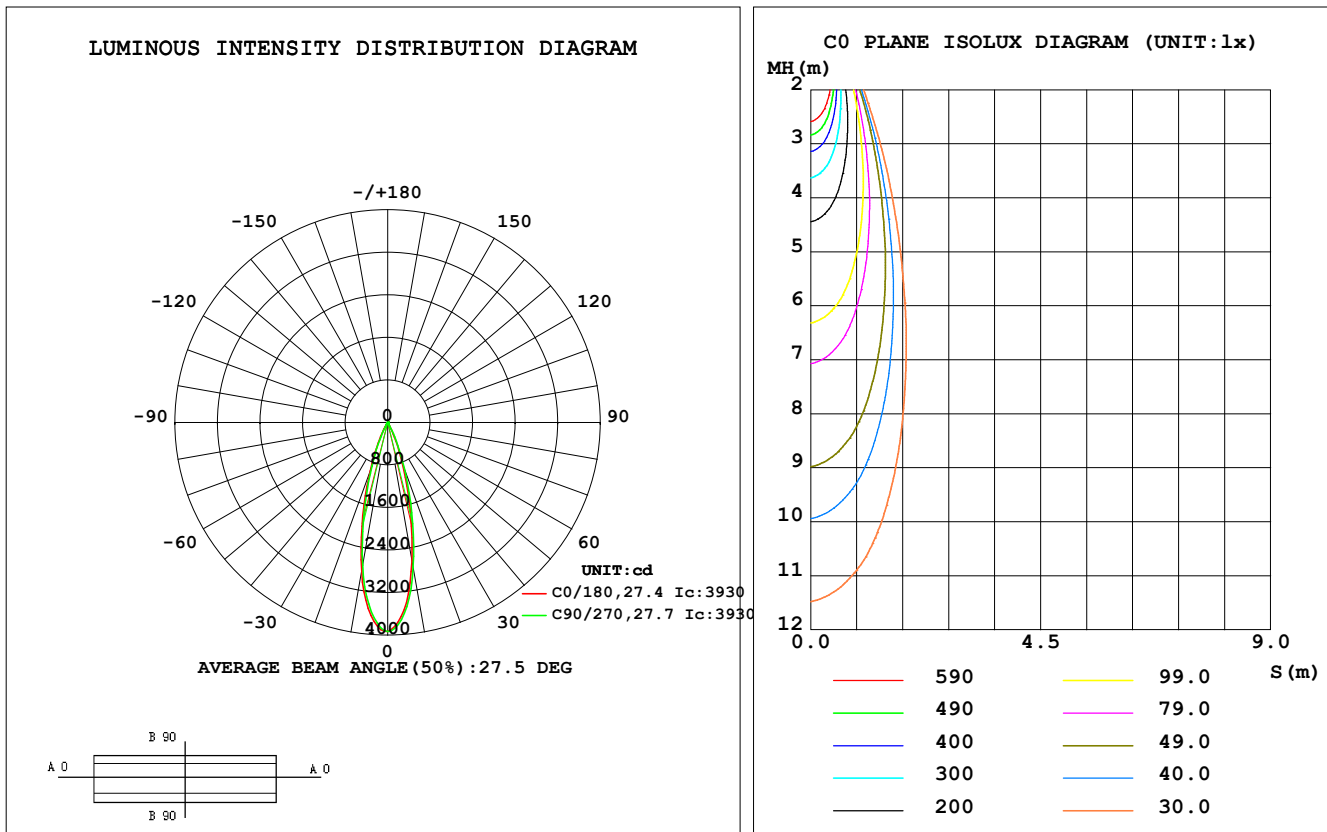


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:48.00V I:0.2549A P:12.24W PF:1.000 Freq:50.00Hz Lamp Flux:1012.53x1 lm					
NAME: M20-T42002B-9G40-L24			TYPE:		WEIGHT:
SPEC.:			DIM.:		SERIAL No.:
MFR.:			SUR.:219*22		Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 82.76 lm/W
MODEL	4000K CRI90	I _{max} (cd)	3930	S/MH(C0/180)	0.48	
NOMINAL POWER(W)	12	LOR(%)	100.0	S/MH(C90/270)	0.46	
RATED VOLTAGE(V)	226	TOTAL FLUX(lm)	1012.5	η UP,DN(C0-180)	0.0,49.0	
NOMINAL FLUX(lm)	1012.53	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,51.0	
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50	
TEST VOLTAGE(V)	225.1	η down(%)	100.0	CIBSE SHR MAX	0.50	



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	2638	2673	2769	2796	2837	2785	2727	2728	0- 10	315.7	315.7	31.2,31.2
20	804.7	832.5	917.4	954.1	962.5	922.1	876.5	892.0	10- 20	469.3	784.9	77.5,77.5
30	81.45	82.76	106.9	129.3	145.8	128.9	115.3	116.1	20- 30	182.7	967.6	95.6,95.6
40	7.310	7.183	9.460	12.28	25.83	23.54	21.88	21.48	30- 40	27.58	995.2	98.3,98.3
50	0.3405	0.3260	0.3220	0.3445	9.405	9.266	9.118	9.104	40- 50	6.152	1001	98.9,98.9
60	0.5709	0.5623	0.5791	0.5550	6.457	6.372	6.262	6.232	50- 60	3.604	1005	99.3,99.3
70	0.9064	0.9092	0.9170	0.9043	4.478	4.423	4.348	4.333	60- 70	2.996	1008	99.5,99.5
80	1.102	1.095	1.088	1.078	3.137	3.094	3.068	3.037	70- 80	2.501	1010	99.8,99.8
90	1.252	1.209	1.171	1.170	2.269	2.234	2.199	2.180	80- 90	2.061	1013	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): 999.14 lm

%lum = 98.7%

%lamp = 98.7%

Conical surface Flux(120deg): 1005 lm

%lum = 99.3%

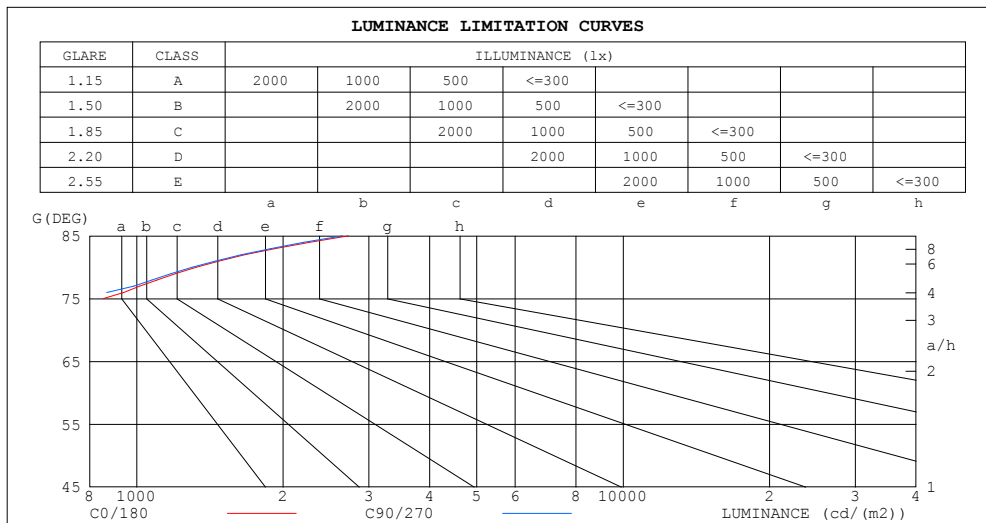
%lamp = 99.3%

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

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:0.2549A P:12.24W PF:1.000 Freq:50.00Hz Lamp Flux:1012.53x1 lm		
NAME: M20-T42002B-9G40-L24	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:219*22	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	2723	2648
80	1325	1300
75	853	799
70	553	556
65	375	370
60	238	240
55	145	135
50	111	104
45	342	396

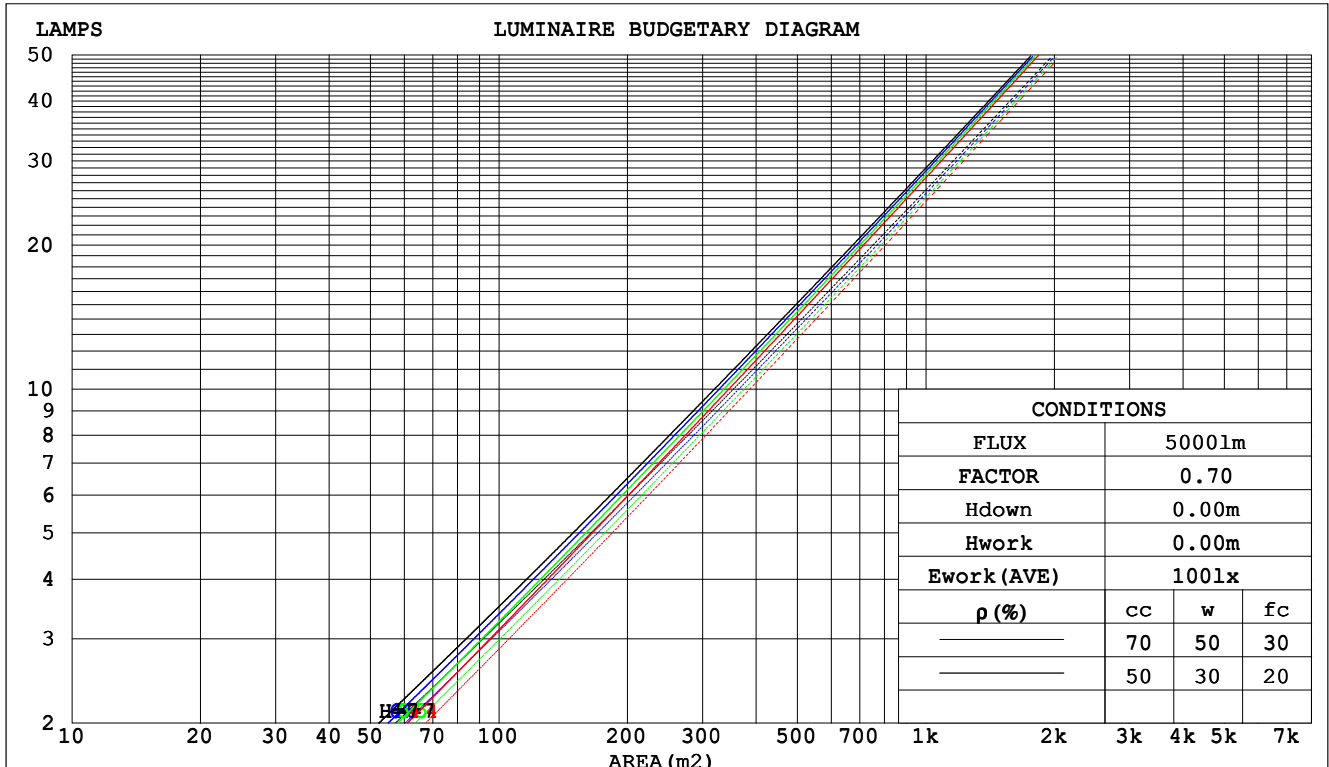
C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:ZR
Test Date:2021-08-18

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:0.2549A P:12.24W PF:1.000 Freq:50.00Hz Lamp Flux:1012.53x1 lm		
NAME: M20-T42002B-9G40-L24	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:219*22	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	1.13	1.11	1.09	1.10	1.09	1.07	1.06	1.05	1.04	1.03	1.02	1.01	.99	.99	.98	.96
2.0	1.07	1.04	1.01	1.05	1.03	1.00	1.02	1.00	.98	.99	.98	.96	.97	.95	.94	.93
3.0	1.02	.99	.96	1.01	.98	.95	.99	.96	.93	.96	.94	.92	.94	.92	.91	.89
4.0	.98	.94	.91	.97	.93	.90	.95	.92	.89	.93	.91	.88	.92	.89	.87	.86
5.0	.94	.90	.87	.94	.90	.87	.92	.89	.86	.90	.88	.85	.89	.87	.85	.83
6.0	.91	.87	.84	.90	.86	.83	.89	.85	.83	.88	.85	.82	.87	.84	.82	.81
7.0	.88	.84	.81	.87	.83	.80	.86	.83	.80	.85	.82	.80	.84	.81	.79	.78
8.0	.85	.81	.78	.85	.81	.78	.84	.80	.77	.83	.80	.77	.82	.79	.77	.76
9.0	.82	.78	.75	.82	.78	.75	.81	.78	.75	.80	.77	.75	.80	.77	.75	.74
10.0	.80	.76	.73	.80	.76	.73	.79	.75	.73	.78	.75	.73	.78	.75	.72	.72



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:0.2549A P:12.24W PF:1.000 Freq:50.00Hz Lamp Flux:1012.53x1 lm		
NAME: M20-T42002B-9G40-L24	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:219*22	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	.143	.081	.026	.136	.078	.025	.124	.071	.023	.113	.065	.021	.102	.059	.019		
2.0	.132	.072	.022	.126	.070	.021	.116	.065	.020	.107	.060	.019	.098	.055	.017		
3.0	.123	.065	.020	.118	.063	.019	.110	.059	.018	.102	.056	.017	.094	.052	.016		
4.0	.115	.060	.018	.111	.058	.017	.104	.055	.016	.097	.052	.016	.091	.049	.015		
5.0	.108	.055	.016	.105	.054	.016	.099	.051	.015	.093	.049	.015	.088	.047	.014		
6.0	.102	.051	.015	.100	.050	.014	.094	.048	.014	.089	.046	.014	.085	.045	.013		
7.0	.097	.048	.014	.095	.047	.013	.090	.046	.013	.086	.044	.013	.082	.042	.012		
8.0	.093	.045	.013	.091	.045	.013	.087	.043	.012	.083	.042	.012	.079	.041	.012		
9.0	.089	.043	.012	.087	.042	.012	.083	.041	.012	.080	.040	.011	.077	.039	.011		
10.0	.085	.041	.011	.083	.040	.011	.080	.039	.011	.077	.038	.011	.074	.037	.011		

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	.148	.144	.135	.127	.099	.093	.088	.057	.054	.051	.018	.017	.017	
2.0	.151	.133	.117	.129	.114	.101	.089	.079	.071	.051	.046	.041	.016	.015	.014	
3.0	.136	.113	.095	.117	.098	.082	.080	.068	.058	.046	.040	.034	.015	.013	.011	
4.0	.124	.098	.078	.106	.085	.068	.073	.059	.048	.042	.035	.028	.014	.011	.009	
5.0	.113	.086	.065	.097	.074	.057	.067	.052	.040	.039	.030	.024	.013	.010	.008	
6.0	.105	.076	.055	.090	.066	.048	.062	.046	.034	.036	.027	.020	.012	.009	.007	
7.0	.097	.068	.047	.084	.059	.041	.058	.041	.029	.034	.024	.017	.011	.008	.006	
8.0	.091	.061	.041	.078	.053	.035	.054	.037	.025	.031	.022	.015	.010	.007	.005	
9.0	.085	.055	.035	.073	.048	.031	.051	.034	.022	.030	.020	.013	.010	.007	.004	
10.0	.080	.051	.031	.069	.044	.027	.048	.031	.019	.028	.018	.011	.009	.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:0.2549A P:12.24W PF:1.000 Freq:50.00Hz Lamp Flux:1012.53x1 lm										
NAME: M20-T42002B-9G40-L24					TYPE:			WEIGHT:		
SPEC.:					DIM.:			SERIAL No.:		
MFR.:					SUR.:219*22			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	0.8	1.4	1.0	1.6	1.7	2.4	3.0	2.6	3.2	3.3
3H	1.0	1.6	1.2	1.8	2.0	2.4	3.1	2.7	3.2	3.4
4H	1.4	2.0	1.6	2.2	2.4	2.7	3.3	2.9	3.5	3.7
6H	2.2	2.8	2.5	3.0	3.3	3.2	3.8	3.5	4.0	4.3
8H	2.9	3.4	3.2	3.7	3.9	3.7	4.2	4.0	4.5	4.7
12H	3.8	4.3	4.1	4.5	4.8	4.4	4.9	4.7	5.2	5.4
4H 2H	0.6	1.2	0.9	1.4	1.6	2.2	2.8	2.4	3.0	3.2
3H	1.0	1.5	1.3	1.8	2.1	2.4	2.9	2.7	3.2	3.4
4H	1.7	2.2	2.0	2.5	2.8	2.8	3.3	3.1	3.6	3.9
6H	3.0	3.4	3.3	3.7	4.1	3.7	4.1	4.1	4.5	4.8
8H	3.9	4.3	4.2	4.6	5.0	4.4	4.8	4.8	5.2	5.5
12H	5.0	5.4	5.4	5.8	6.1	5.4	5.8	5.8	6.1	6.5
8H 4H	2.0	2.4	2.4	2.8	3.1	3.0	3.4	3.4	3.7	4.1
6H	3.7	4.0	4.1	4.4	4.8	4.2	4.6	4.7	5.0	5.4
8H	4.8	5.1	5.3	5.5	6.0	5.2	5.5	5.7	5.9	6.4
12H	6.3	6.5	6.7	7.0	7.4	6.5	6.8	7.0	7.2	7.7
12H 4H	2.1	2.5	2.5	2.9	3.3	3.1	3.4	3.5	3.8	4.2
6H	3.9	4.2	4.4	4.6	5.1	4.4	4.7	4.9	5.2	5.6
8H	5.2	5.4	5.6	5.9	6.3	5.5	5.8	6.0	6.2	6.7
Variations with the observer position at spacings:										
S = 1.0H	+ 0.9 / - 0.5					+ 1.2 / - 0.7				
1.5H	+ 1.9 / - 0.5					+ 2.5 / - 0.8				
2.0H	+ 0.3 / - 0.3					+ 0.3 / - 0.3				

CIE Pub.117, 1013 lm Total Lamp Luminous Flux Correct (8log(F/F0) = 0.0)

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:0.2549A P:12.24W PF:1.000 Freq:50.00Hz Lamp Flux:1012.53x1 lm		
NAME: M20-T42002B-9G40-L24	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:219*22	Shielding Angle:

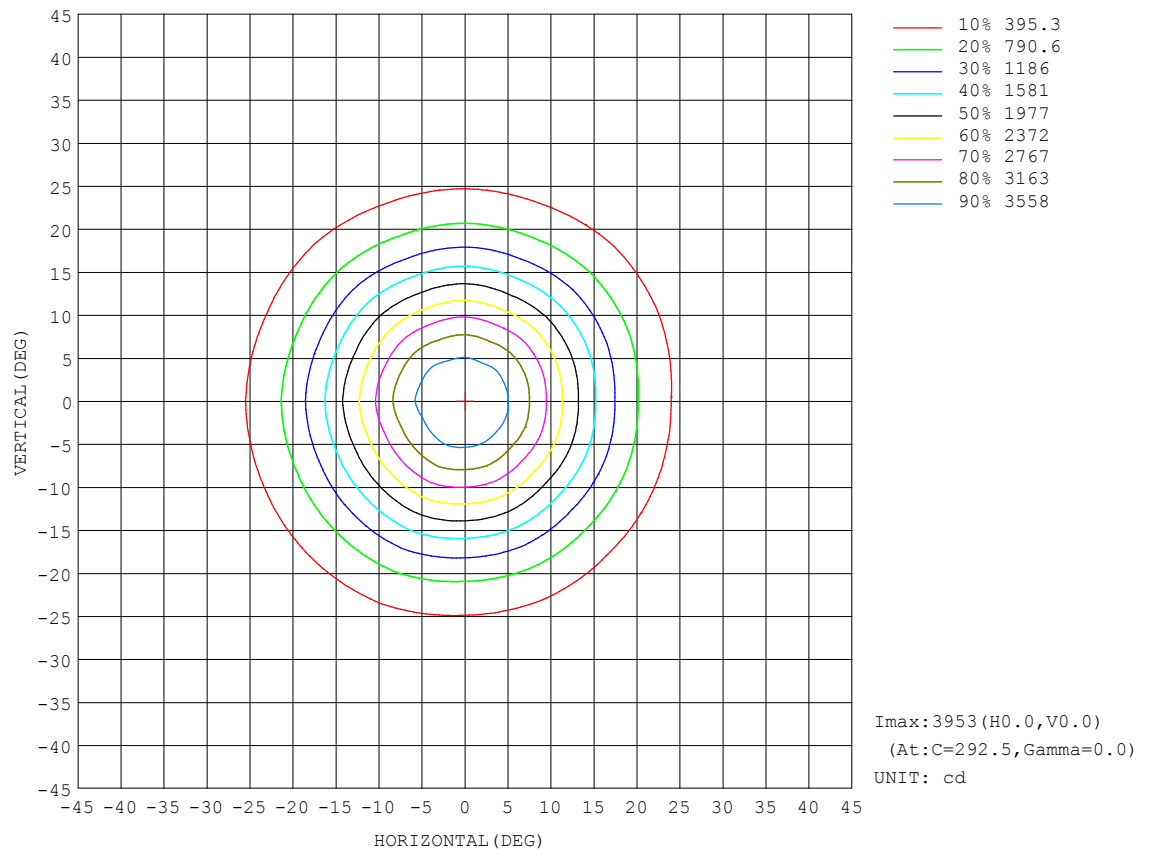
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	91	85	81	90	85	81	89	84	81	78
0.80	97	92	89	97	92	89	96	91	88	85
1.00	101	96	93	100	96	93	99	95	92	88
1.25	105	100	97	104	100	97	102	98	96	92
1.50	107	103	100	106	102	99	104	101	98	94
2.00	109	106	103	108	105	102	105	103	100	95
2.50	111	107	105	109	106	104	106	104	102	96
3.00	112	109	107	111	108	106	107	105	103	97
4.00	114	112	110	112	110	108	109	107	106	99
5.00	116	113	112	113	112	110	110	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

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:0.2549A P:12.24W PF:1.000 Freq:50.00Hz Lamp Flux:1012.53x1 lm		
NAME: M20-T42002B-9G40-L24	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:219*22	Shielding Angle:

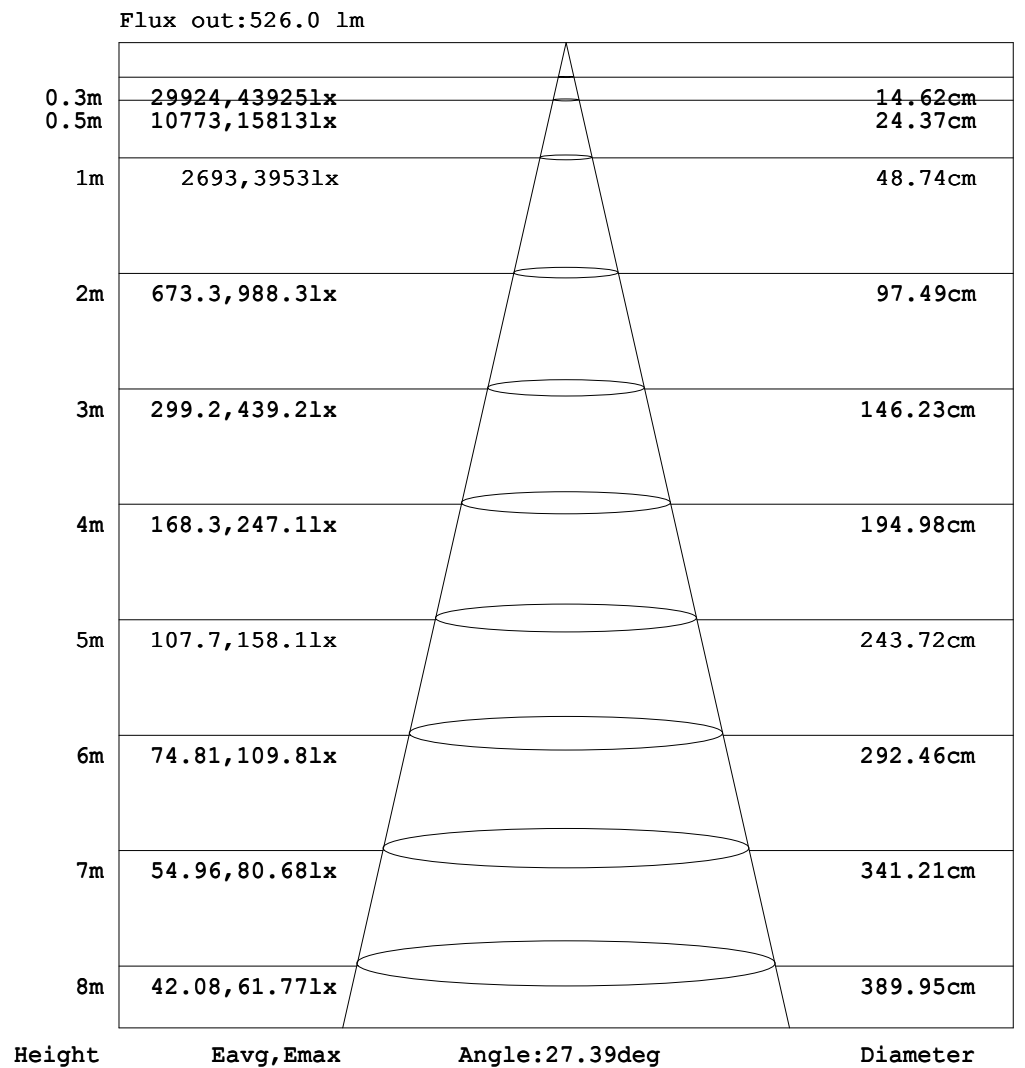


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 25.3DEG
Operators: ZR
Test Date: 2021-08-18

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:0.2549A P:12.24W PF:1.000 Freq:50.00Hz Lamp Flux:1012.53x1 lm		
NAME: M20-T42002B-9G40-L24	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:219*22	Shielding Angle:



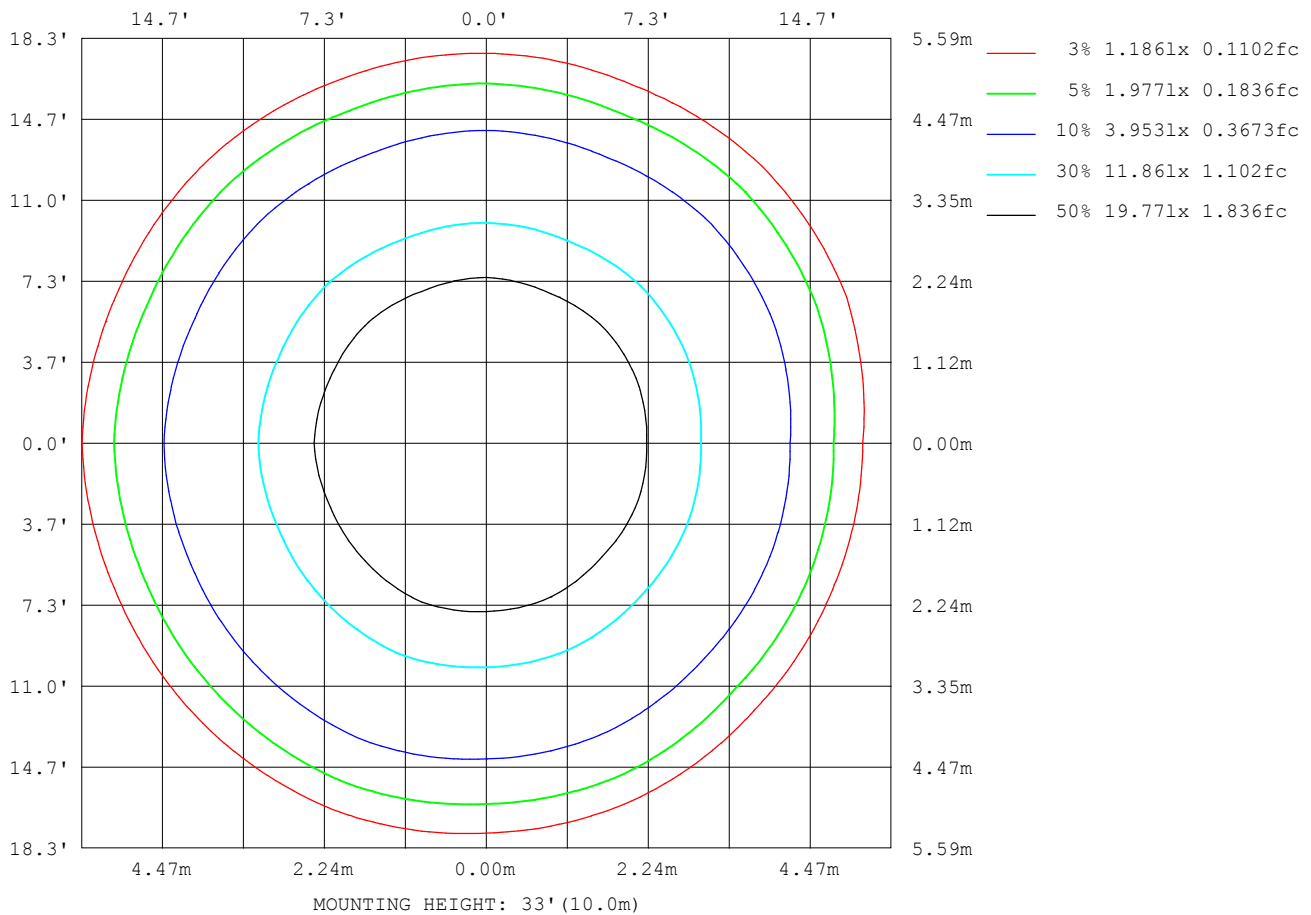
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:0.2549A P:12.24W PF:1.000 Freq:50.00Hz Lamp Flux:1012.53x1 lm		
NAME: M20-T42002B-9G40-L24	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:219*22	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:0.2549A P:12.24W PF:1.000 Freq:50.00Hz Lamp Flux:1012.53x1 lm		
NAME: M20-T42002B-9G40-L24	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.:	SUR.:219*22	Shielding Angle:

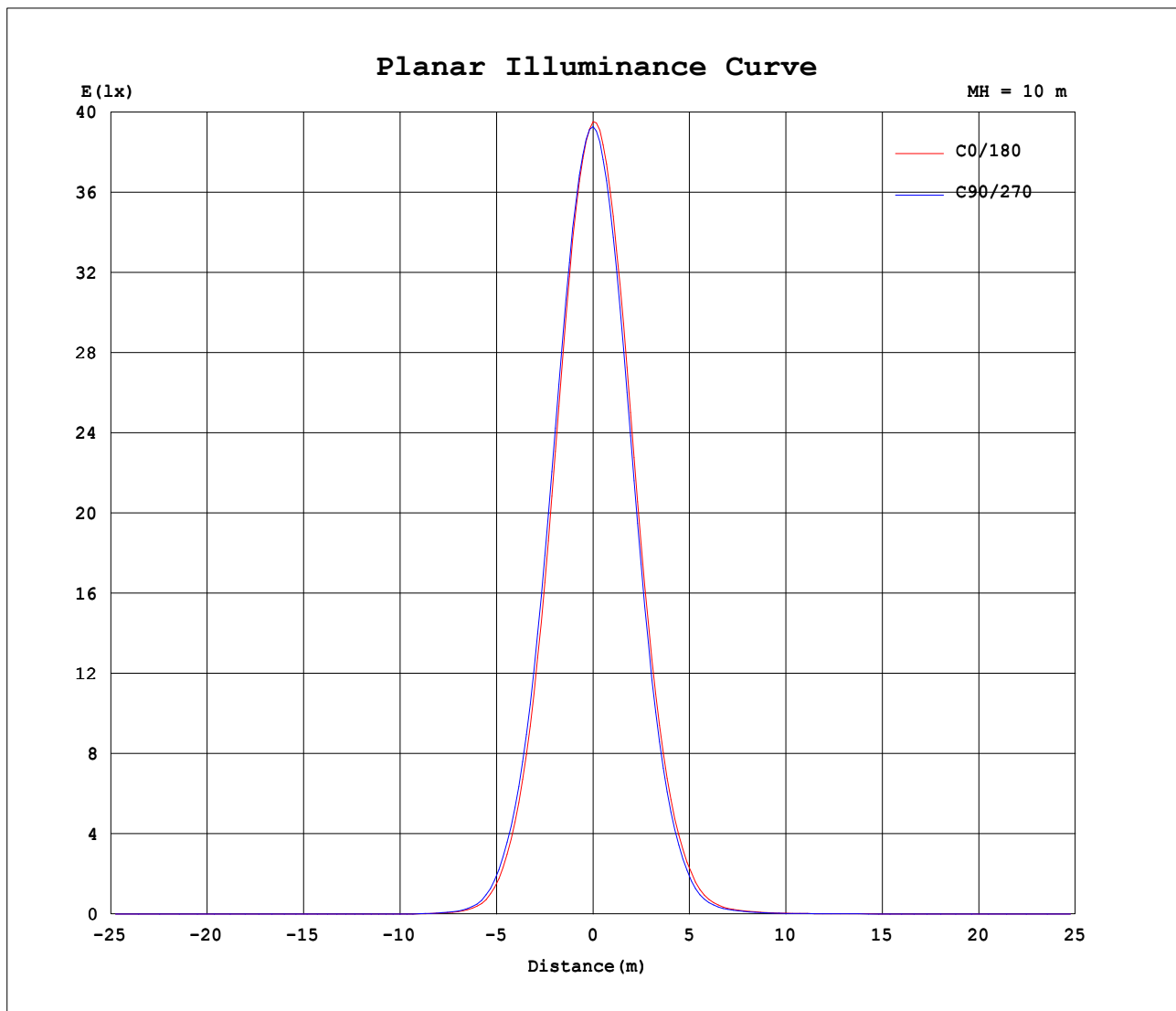
AvgL	cd/m2
L_0~180 (65) av	1506
L_0~180 (75) av	1926
L_0~180 (85) av	4521
L_90~270 (65) av	1464
L_90~270 (75) av	1871
L_90~270 (85) av	4388
L_45 (65) av	1475
L_45 (75) av	1864
L_45 (85) av	4410

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
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Humidity: 65.0%
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