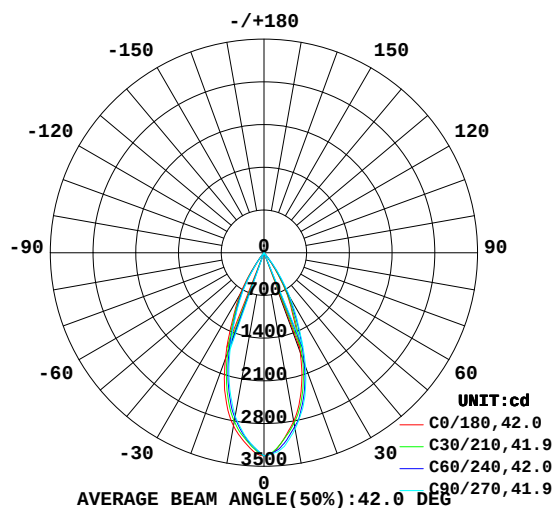


LUMINAIRE PHOTOMETRIC TEST REPORT

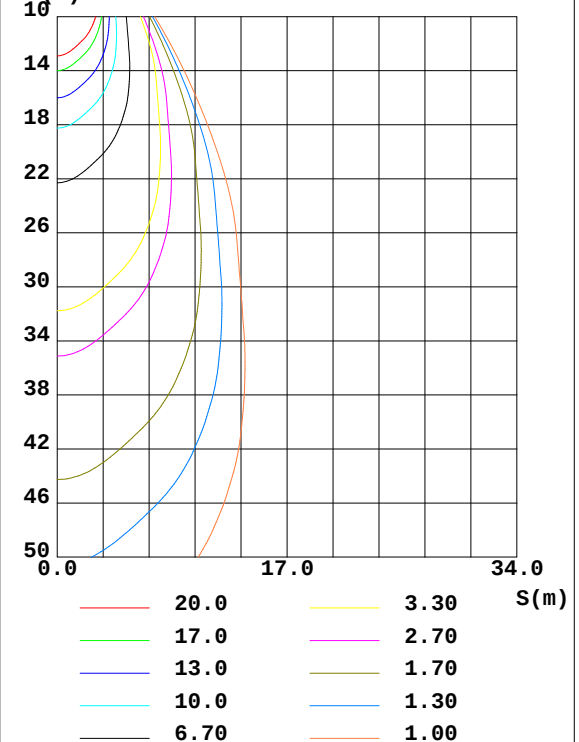
Test:U:230.49V I:0.0949A P:19.999W PF:0.9145 Freq:50.00Hz Lamp Flux:1705.79x1 lm		
NAME: 169-291	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:75	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA				Eff: 85.29 lm/W
MODEL	169-291	Imax(cd)	3331	S/MH(C0/180)	0.69	
NOMINAL POWER(W)	20	LOR(%)	100.0	S/MH(C90/270)	0.63	
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	1705.8	η UP, DN(C0-180)	0.0, 53.4	
NOMINAL FLUX(lm)	1705.79	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0, 46.6	
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	0.50	
TEST VOLTAGE(V)	230	η down(%)	100.0	CIBSE SHR MAX	0.70	

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



V(B) Range:-85 - 85DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.404.7
Humidity:65.0%
Test Distance:8.240m [K=1.0000]
Remarks: 169-291

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	2805	2862	2936	2932	2882	2770	2722	2708	0- 10	289.4	289.4	17,17
20	1740	1884	1992	1956	1854	1699	1591	1601	10- 20	650.1	939.5	55.1,55.1
30	689.7	772.9	873.0	853.0	782.6	669.7	612.9	615.1	20- 30	548.4	1488	87.2,87.2
40	28.42	48.98	62.13	70.40	45.51	32.27	23.61	23.56	30- 40	195.4	1683	98.7,98.7
50	6.421	6.637	7.448	7.362	7.365	7.217	6.777	6.376	40- 50	12.50	1696	99.4,99.4
60	3.057	3.476	4.329	3.962	3.494	3.495	3.197	3.091	50- 60	4.451	1700	99.7,99.7
70	1.480	2.311	3.138	2.803	1.644	1.518	1.316	1.418	60- 70	2.608	1703	99.8,99.8
80	1.010	2.037	2.535	2.342	0.9156	0.9489	0.9109	0.9760	70- 80	1.709	1705	99.9,99.9
90	0.0644	0	0	0	0.1748	0	0	0	80- 90	1.096	1706	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): 1692.2 lm

%lum = 99.2%

%lamp = 99.2%

Conical surface Flux(120deg): 1700.4 lm

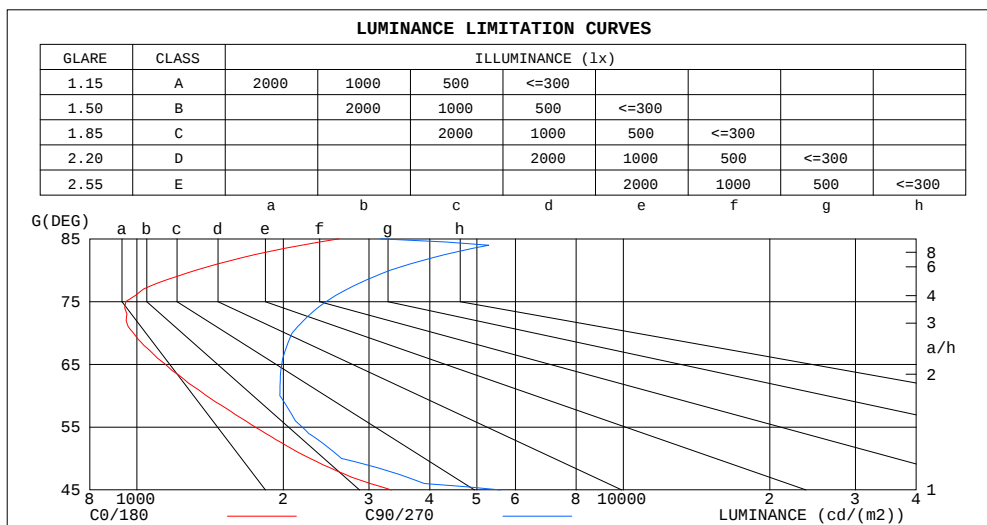
%lum = 99.7%

%lamp = 99.7%

V(B) Range:-85 - 85DEG
 V(B) Interval: 2.0DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.404.7
 Humidity:65.0%
 Test Distance:8.240m [K=1.0000]
 Remarks: 169-291

LUMINANCE LIMITATION CURVES

Test:U:230.49V I:0.0949A P:19.999W PF:0.9145 Freq:50.00Hz Lamp Flux:1705.79x1 lm		
NAME: 169-291	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:75	Shielding Angle:



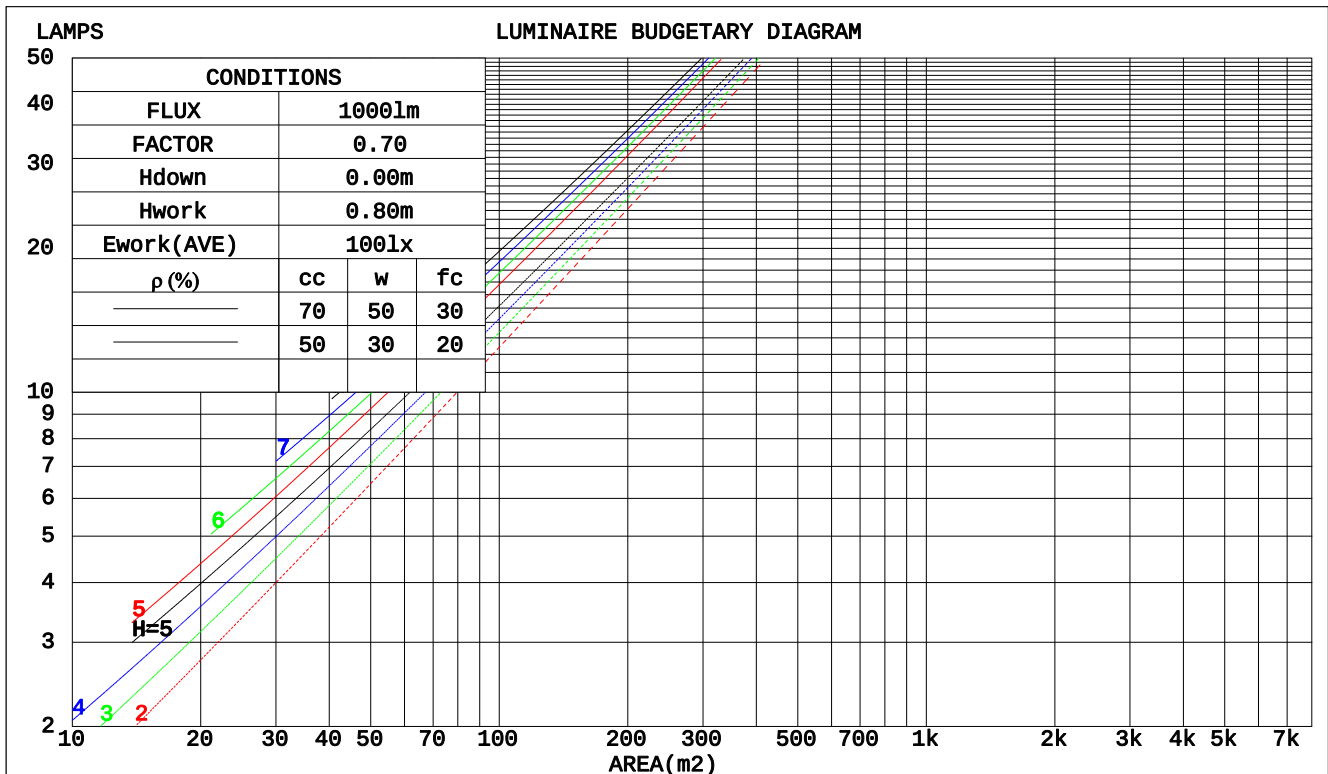
LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	2603	3171
80	1322	3318
75	949	2450
70	984	2085
65	1145	1985
60	1390	1968
55	1751	2188
50	2270	2634
45	3335	5589

V(B) Range:-85 - 85DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.404.7
Humidity:65.0%
Test Distance:8.240m [K=1.0000]
Remarks: 169-291

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.49V I:0.0949A P:19.999W PF:0.9145 Freq:50.00Hz Lamp Flux:1705.79x1 lm		
NAME: 169-291	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:75	Shielding Angle:

ρ _{CC}	80%			70%			50%			30%			10%			0
ρ _W	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ _{fc}	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	1.06	1.06	1.04	1.03	1.02	1.01	.00	.98	.98	.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	.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	.89	.84	.81	.88	.84	.80	.87	.83	.79	.85	.82	.79	.84	.81	.78	.77
6.0	.85	.80	.76	.84	.79	.76	.83	.78	.75	.81	.78	.75	.80	.77	.74	.73
7.0	.81	.76	.72	.80	.75	.72	.79	.75	.72	.78	.74	.71	.77	.73	.71	.70
8.0	.77	.72	.68	.77	.72	.68	.76	.71	.68	.75	.71	.68	.74	.70	.68	.66
9.0	.74	.69	.65	.73	.68	.65	.72	.68	.65	.72	.68	.65	.71	.67	.65	.63
10.0	.71	.66	.62	.70	.65	.62	.69	.65	.62	.69	.65	.62	.68	.64	.62	.61



V(B) Range:-85 - 85DEG

V(B) Interval: 2.0DEG

Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.404.7

Humidity:65.0%

Test Distance:8.240m [K=1.0000]

Remarks: 169-291

WEC AND CCEC

Test:U:230.49V I:0.0949A P:19.999W PF:0.9145 Freq:50.00Hz Lamp Flux:1705.79x1 lm														
NAME: 169-291					TYPE:					WEIGHT:				
SPEC.:					DIM.:					SERIAL No.:				
MFR.: Tronix Lighting					SUR.:75					Shielding Angle:				

ρ_{cc}	80%			70%			50%			30%			10%			0	
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
ρ_{fc}	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.159	.091	.029	.153	.087	.028	.140	.080	.026	.129	.074	.024	.118	.068	.022		
2.0	.150	.082	.025	.145	.080	.025	.134	.075	.023	.125	.070	.022	.116	.065	.021		
3.0	.142	.076	.023	.137	.073	.022	.128	.070	.021	.120	.066	.020	.113	.062	.019		
4.0	.135	.070	.021	.131	.068	.020	.123	.065	.019	.116	.062	.019	.110	.060	.018		
5.0	.128	.065	.019	.125	.064	.019	.118	.061	.018	.112	.059	.018	.106	.057	.017		
6.0	.122	.061	.018	.119	.060	.017	.113	.058	.017	.108	.056	.017	.103	.054	.016		
7.0	.117	.058	.016	.114	.057	.016	.109	.055	.016	.104	.054	.016	.100	.052	.015		
8.0	.112	.055	.015	.110	.054	.015	.105	.053	.015	.101	.051	.015	.097	.050	.015		
9.0	.107	.052	.015	.105	.051	.014	.101	.050	.014	.098	.049	.014	.094	.048	.014		
10.0	.103	.050	.014	.101	.049	.014	.098	.048	.013	.094	.047	.013	.091	.046	.013		

ρ_{cc}	80%			70%			50%			30%			10%			0
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fc}	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	.129	.098	.075	.110	.085	.065	.076	.059	.046	.044	.035	.027	.014	.011	.009	
5.0	.119	.087	.062	.102	.075	.054	.071	.052	.038	.041	.031	.023	.013	.010	.007	
6.0	.111	.077	.052	.096	.067	.046	.066	.047	.032	.038	.027	.019	.012	.009	.006	
7.0	.104	.069	.044	.090	.060	.039	.062	.042	.027	.036	.025	.016	.012	.008	.005	
8.0	.099	.063	.038	.085	.054	.033	.059	.038	.024	.034	.023	.014	.011	.007	.005	
9.0	.093	.057	.033	.080	.050	.029	.056	.035	.020	.032	.021	.012	.011	.007	.004	
10.0	.089	.053	.029	.077	.046	.025	.053	.032	.018	.031	.019	.011	.010	.006	.004	

V(B) Range:-85 - 85DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.404.7
Humidity:65.0%
Test Distance:8.240m [K=1.0000]
Remarks: 169-291

UGR(Unified Glare Rating) Table

Test:U:230.49V I:0.0949A P:19.999W PF:0.9145 Freq:50.00Hz Lamp Flux:1705.79x1 lm											
NAME: 169-291					TYPE:			WEIGHT:			
SPEC.:					DIM.:			SERIAL No.:			
MFR.: Tronix Lighting					SUR.:75			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		16.4	17.2	16.6	17.3	17.5	18.4	19.2	18.6	19.3	19.5
	3H	16.2	17.0	16.4	17.1	17.3	18.2	19.0	18.5	19.2	19.4
	4H	16.1	16.8	16.4	17.0	17.3	18.2	18.9	18.4	19.1	19.3
	6H	16.0	16.7	16.3	16.9	17.2	18.1	18.8	18.4	19.0	19.2
	8H	16.0	16.6	16.3	16.9	17.2	18.1	18.7	18.4	19.0	19.2
	12H	16.0	16.6	16.3	16.9	17.1	18.1	18.7	18.4	18.9	19.2
4H	2H	16.1	16.8	16.4	17.0	17.3	18.1	18.8	18.4	19.0	19.3
	3H	16.0	16.6	16.3	16.8	17.1	18.0	18.6	18.3	18.9	19.1
	4H	15.9	16.4	16.2	16.7	17.0	17.9	18.5	18.2	18.8	19.1
	6H	15.8	16.3	16.2	16.6	17.0	17.9	18.4	18.2	18.7	19.0
	8H	15.8	16.2	16.1	16.6	16.9	17.9	18.3	18.2	18.7	19.0
	12H	15.7	16.2	16.1	16.5	16.9	17.9	18.3	18.3	18.6	19.0
8H	4H	15.7	16.2	16.1	16.5	16.9	17.8	18.2	18.2	18.6	18.9
	6H	15.7	16.1	16.1	16.5	16.9	17.7	18.1	18.2	18.5	18.9
	8H	15.7	16.0	16.1	16.4	16.9	17.7	18.1	18.2	18.5	18.9
	12H	15.7	16.0	16.2	16.4	16.9	17.8	18.1	18.2	18.5	19.0
12H	4H	15.7	16.1	16.1	16.5	16.9	17.7	18.1	18.1	18.5	18.9
	6H	15.6	16.0	16.1	16.4	16.8	17.7	18.0	18.1	18.4	18.9
	8H	15.7	15.9	16.1	16.4	16.8	17.7	18.0	18.2	18.4	18.9
Variations with the observer position at spacings:											
S = 1.0H	+ 4.1 / - 4.3					+ 4.7 / - 6.8					
1.5H	+ 6.6 / - 4.0					+ 7.4 / - 6.7					
2.0H	+ 0.8 / - 0.4					+ 1.4 / - 0.4					

CIE Pub.117, 1706 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 1.9$)

V(B) Range:-85 - 85DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.404.7
Humidity:65.0%
Test Distance:8.240m [K=1.0000]
Remarks: 169-291

UTILIZATION FACTORS TABLE

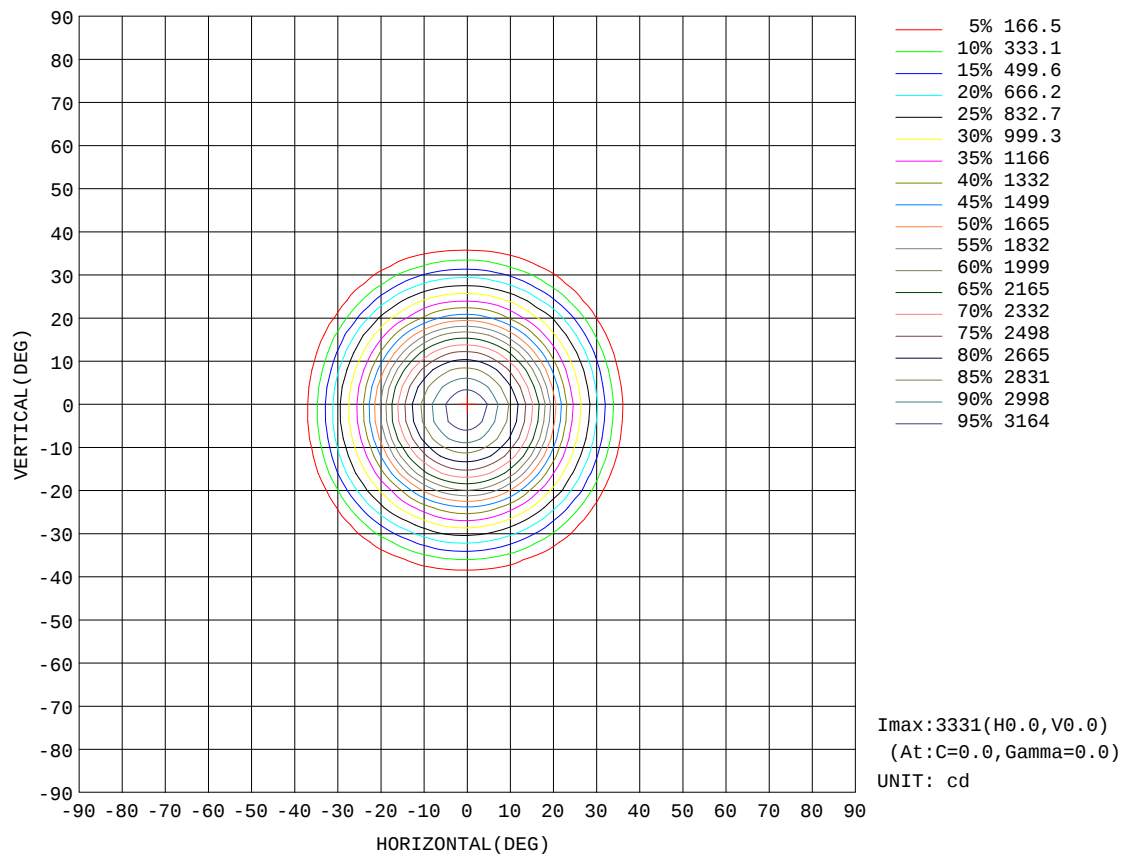
Test:U:230.49V I:0.0949A P:19.999W PF:0.9145 Freq:50.00Hz Lamp Flux:1705.79x1 lm		
NAME: 169-291	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:75	Shielding Angle:

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	82	90	85	82	90	85	81	78
0.80	98	92	89	97	92	89	96	92	89	85
1.00	102	96	93	101	96	93	99	96	92	89
1.25	105	100	97	104	100	97	102	99	96	92
1.50	107	103	100	106	103	100	104	101	99	94
2.00	110	106	103	108	105	102	106	103	101	96
2.50	111	108	105	110	106	104	107	104	102	97
3.00	113	109	107	111	108	106	108	105	104	97
4.00	114	112	110	112	110	109	109	107	106	99
5.00	116	114	112	114	112	110	110	108	107	100
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

V(B) Range:-85 - 85DEG
 V(B) Interval: 2.0DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.404.7
 Humidity:65.0%
 Test Distance:8.240m [K=1.0000]
 Remarks: 169-291

ISOCANDELA DIAGRAM

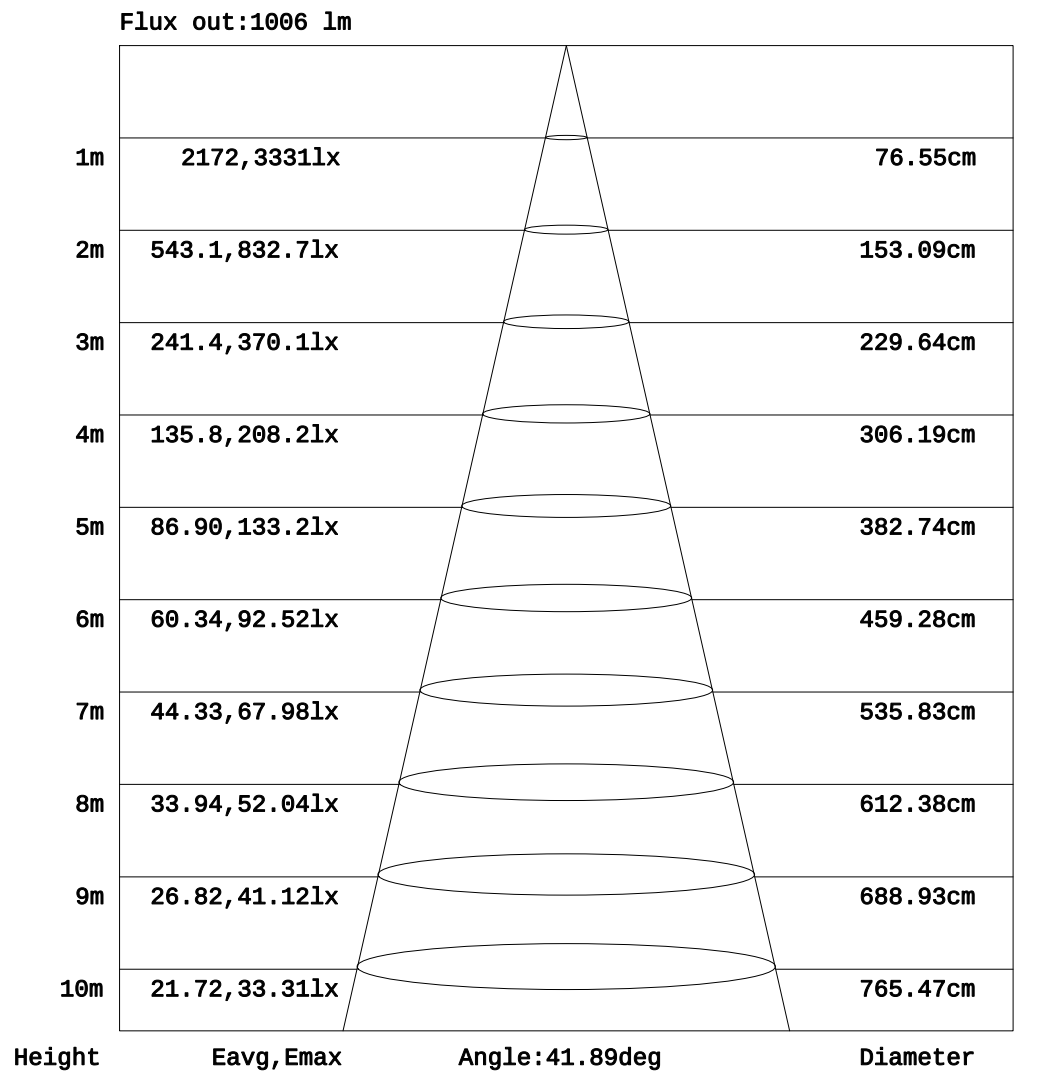
Test:U:230.49V I:0.0949A P:19.999W PF:0.9145 Freq:50.00Hz Lamp Flux:1705.79x1 lm		
NAME: 169-291	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:75	Shielding Angle:



V(B) Range: -85 - 85DEG
V(B) Interval: 2.0DEG
Test System: EVERFINE G0-2000B_V1 SYSTEM V2.0.404.7
Humidity: 65.0%
Test Distance: 8.240m [K=1.0000]
Remarks: 169-291

AAI Figure

Test:U:230.49V I:0.0949A P:19.999W PF:0.9145 Freq:50.00Hz Lamp Flux:1705.79x1 lm		
NAME: 169-291	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:75	Shielding Angle:

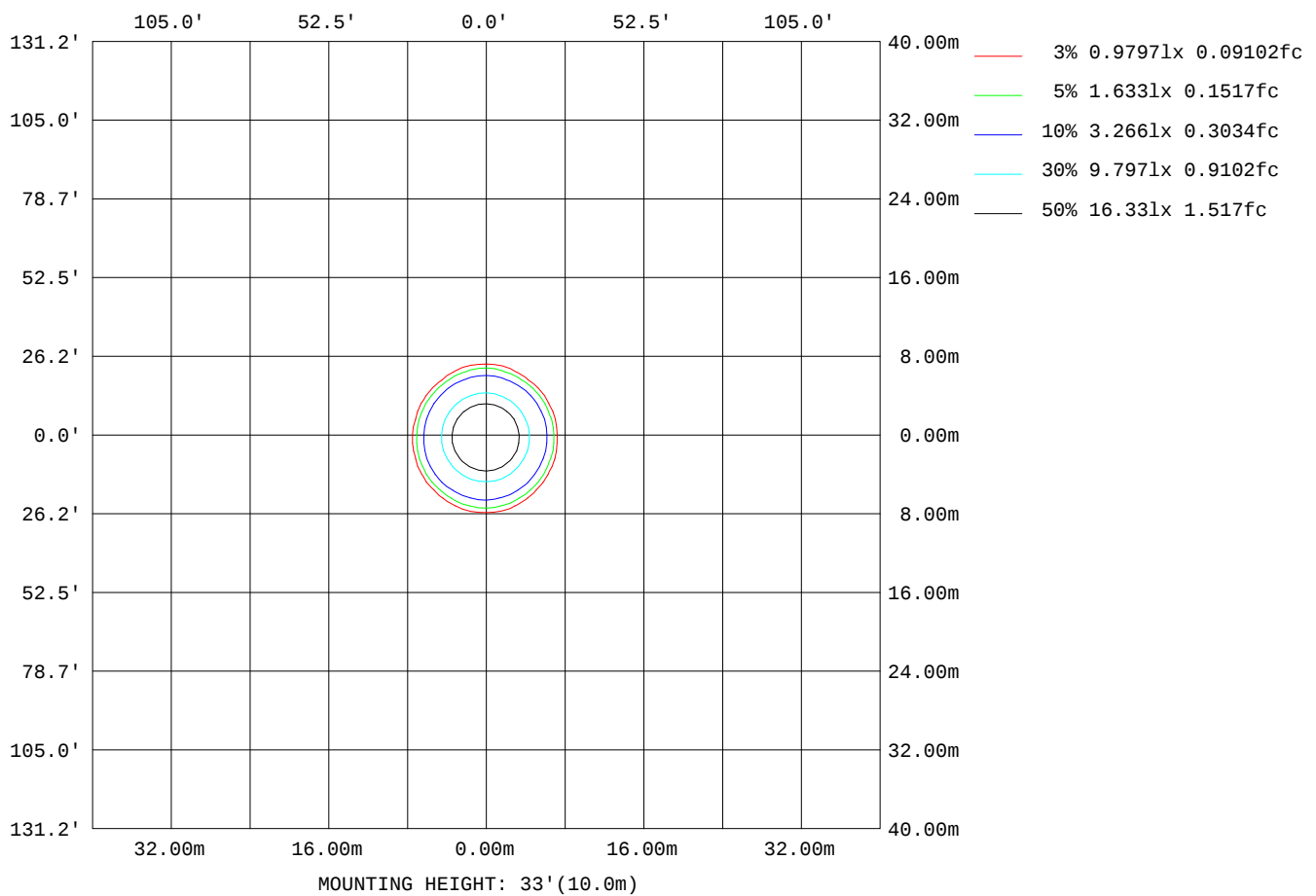


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

V(B) Range:-85 - 85DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.404.7
Humidity:65.0%
Test Distance:8.240m [K=1.0000]
Remarks: 169-291

ISOLUX DIAGRAM

Test:U:230.49V I:0.0949A P:19.999W PF:0.9145 Freq:50.00Hz Lamp Flux:1705.79x1 lm		
NAME: 169-291	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:75	Shielding Angle:



V(B) Range:-85 - 85DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.404.7
Humidity:65.0%
Test Distance:8.240m [K=1.0000]
Remarks: 169-291

LED Avg.L Report

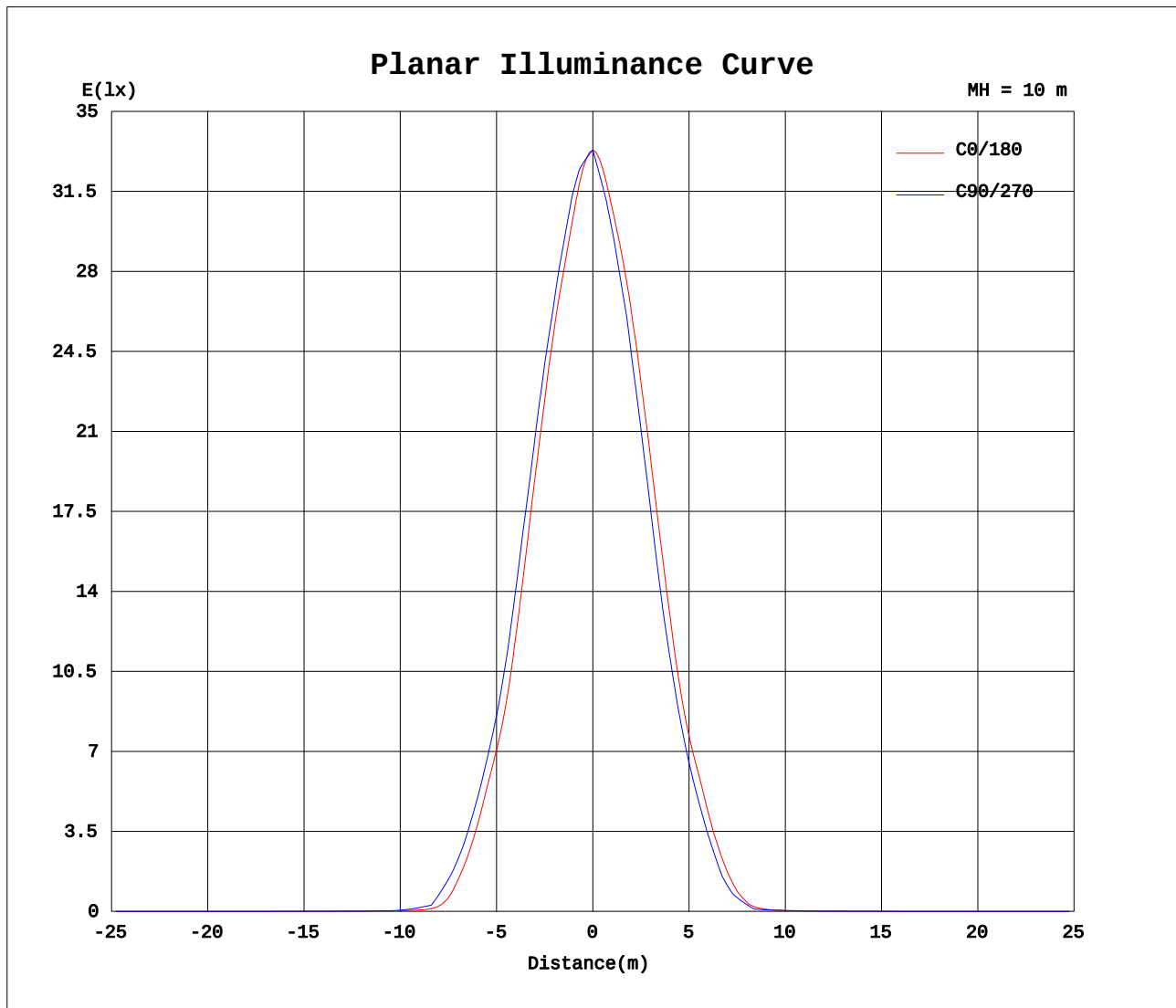
Test:U:230.49V I:0.0949A P:19.999W PF:0.9145 Freq:50.00Hz Lamp Flux:1705.79x1 lm		
NAME: 169-291	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:75	Shielding Angle:

AvgL	cd/m2
L_0~180(65)av	1231
L_0~180(75)av	954
L_0~180(85)av	2474
L_90~270(65)av	1566
L_90~270(75)av	1648
L_90~270(85)av	2213
L_45(65)av	1407
L_45(75)av	1447
L_45(85)av	4090

Standard: GB/T 29293-2012

V(B) Range:-85 - 85DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.404.7
Humidity:65.0%
Test Distance:8.240m [K=1.0000]
Remarks: 169-291

Planar Illuminance Curve



V(B) Range:-85 - 85DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.404.7
Humidity:65.0%
Test Distance:8.240m [K=1.0000]
Remarks: 169-291

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:230.49V I:0.0949A P:19.999W PF:0.9145 Freq:50.00Hz Lamp Flux:1705.79x1 lm		
NAME: 169-291	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:75	Shielding Angle:

Table - -1

UNIT: cd

[illegible]

V(B) Range:-85 - 85DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.404.7
Humidity:65.0%
Test Distance:8.240m [K=1.0000]
Remarks: 169-291

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:230.49V I:0.0949A P:19.999W PF:0.9145 Freq:50.00Hz Lamp Flux:1705.79x1 lm		
NAME: 169-291	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:75	Shielding Angle:

Table - -2

UNIT: cd

[illegible]

V(B) Range:-85 - 85DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.404.7
Humidity:65.0%
Test Distance:8.240m [K=1.0000]
Remarks: 169-291

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:230.49V I:0.0949A P:19.999W PF:0.9145 Freq:50.00Hz Lamp Flux:1705.79x1 lm		
NAME: 169-291	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:75	Shielding Angle:

Table - - 3

UNIT: cd

[illegible]

V(B) Range:-85 - 85DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.404.7
Humidity:65.0%
Test Distance:8.240m [K=1.0000]
Remarks: 169-291

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:230.49V I:0.0949A P:19.999W PF:0.9145 Freq:50.00Hz Lamp Flux:1705.79x1 lm		
NAME: 169-291	TYPE:	WEIGHT:
SPEC.:	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:75	Shielding Angle:

Table - -4

UNIT: cd

[illegible]

V(B) Range:-85 - 85DEG
V(B) Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.0.404.7
Humidity:65.0%
Test Distance:8.240m [K=1.0000]
Remarks: 169-291