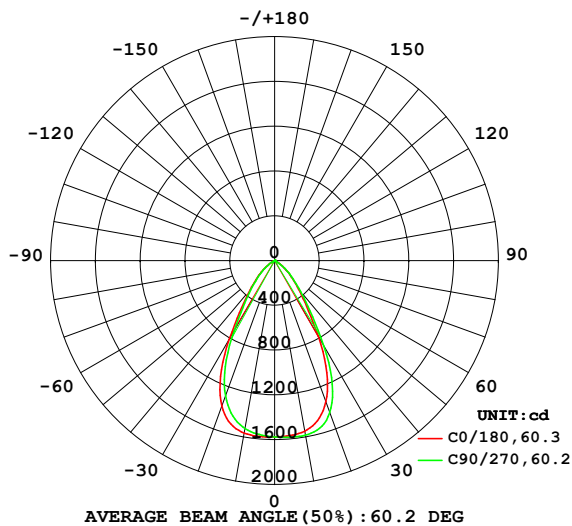


LUMINAIRE PHOTOMETRIC TEST REPORT

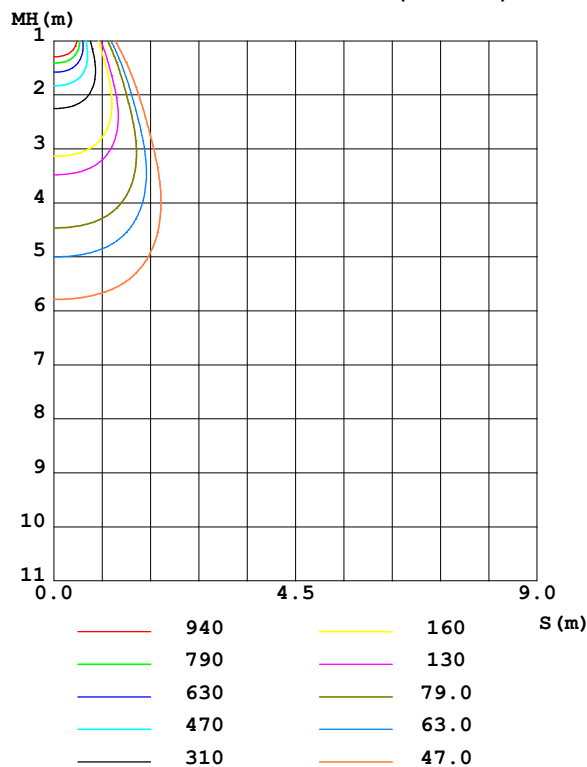
Test:U:230.34V I:0.0587A P:11.647W PF:0.8615 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1665.34x1 lm		
NAME: 136-133_4000K_13W	TYPE: 13W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.: 0.0715	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 142.99 lm/W			
MODEL	136-133_4000K_13W	I _{max} (cd)	1586	S/MH(C0/180)	0.90
NOMINAL POWER(W)	13	LOR(%)	100.0	S/MH(C90/270)	0.92
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	1665.3	η UP,DN(C0-180)	0.0,48.4
NOMINAL FLUX(lm)	1665.34	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.0,51.6
LAMPS INSIDE	1	η up (%)	0.0	CIBSE SHR NOM	0.75
TEST VOLTAGE(V)	230	η down (%)	100.0	CIBSE SHR MAX	0.90

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3 °C
Operators: DAMIN
Test Date: 2023-08-23

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity: 65.0%
Test Distance: 9.640m [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	1565	1540	1524	1528	1547	1568	1584	1582	0- 10	149.6	149.6	8.98,8.98
20	1380	1322	1285	1296	1341	1397	1444	1432	10- 20	417.6	567.2	34.1,34.1
30	814.6	760.0	724.9	742.4	783.0	832.9	885.6	868.8	20- 30	506.8	1074	64.5,64.5
40	340.3	322.6	315.9	323.5	336.4	347.4	361.3	357.8	30- 40	327.5	1402	84.2,84.2
50	144.2	140.9	139.5	144.8	147.3	148.7	151.6	149.4	40- 50	177.8	1579	94.8,94.8
60	27.83	26.98	23.38	26.71	27.95	27.39	25.14	27.74	50- 60	69.84	1649	99,99
70	4.497	4.444	4.323	4.388	4.570	4.562	4.506	4.446	60- 70	10.55	1660	99.7,99.7
80	2.898	2.771	2.683	2.685	2.861	2.873	2.798	2.808	70- 80	3.761	1663	99.9,99.9
90	0.0505	0.0415	0.0385	0.0385	0.0475	0.0445	0.0415	0.0444	80- 90	1.889	1665	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): 1504.6 lm

%lum = 90.3%

%lamp = 90.3%

Conical surface Flux(120deg): 1649.1 lm

%lum = 99.0%

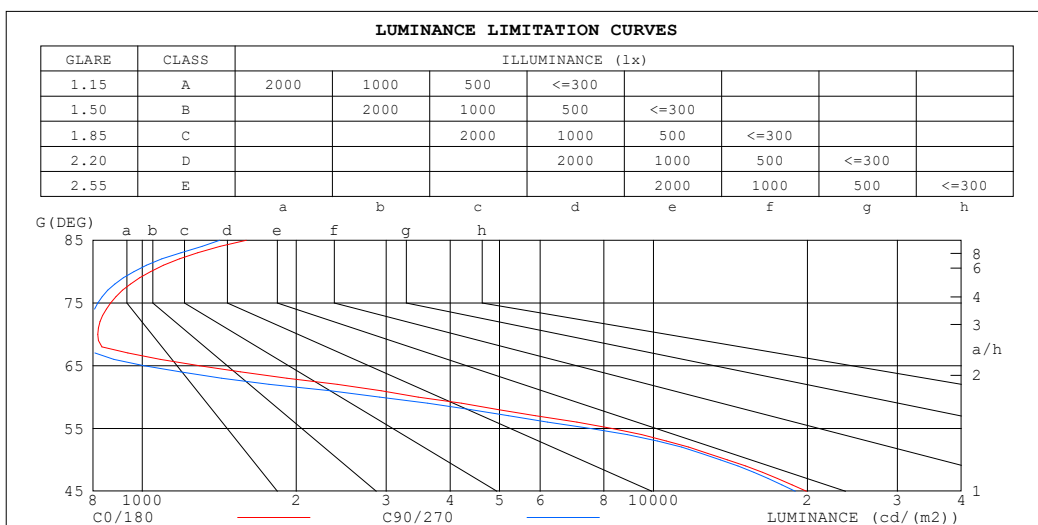
%lamp = 99.0%

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3℃
 Operators:DAMIN
 Test Date:2023-08-23

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
 Humidity:65.0%
 Test Distance:9.640m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:230.34V I:0.0587A P:11.647W PF:0.8615 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1665.34x1 lm		
NAME: 136-133_4000K_13W	TYPE: 13W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.: 0.0715	Shielding Angle:



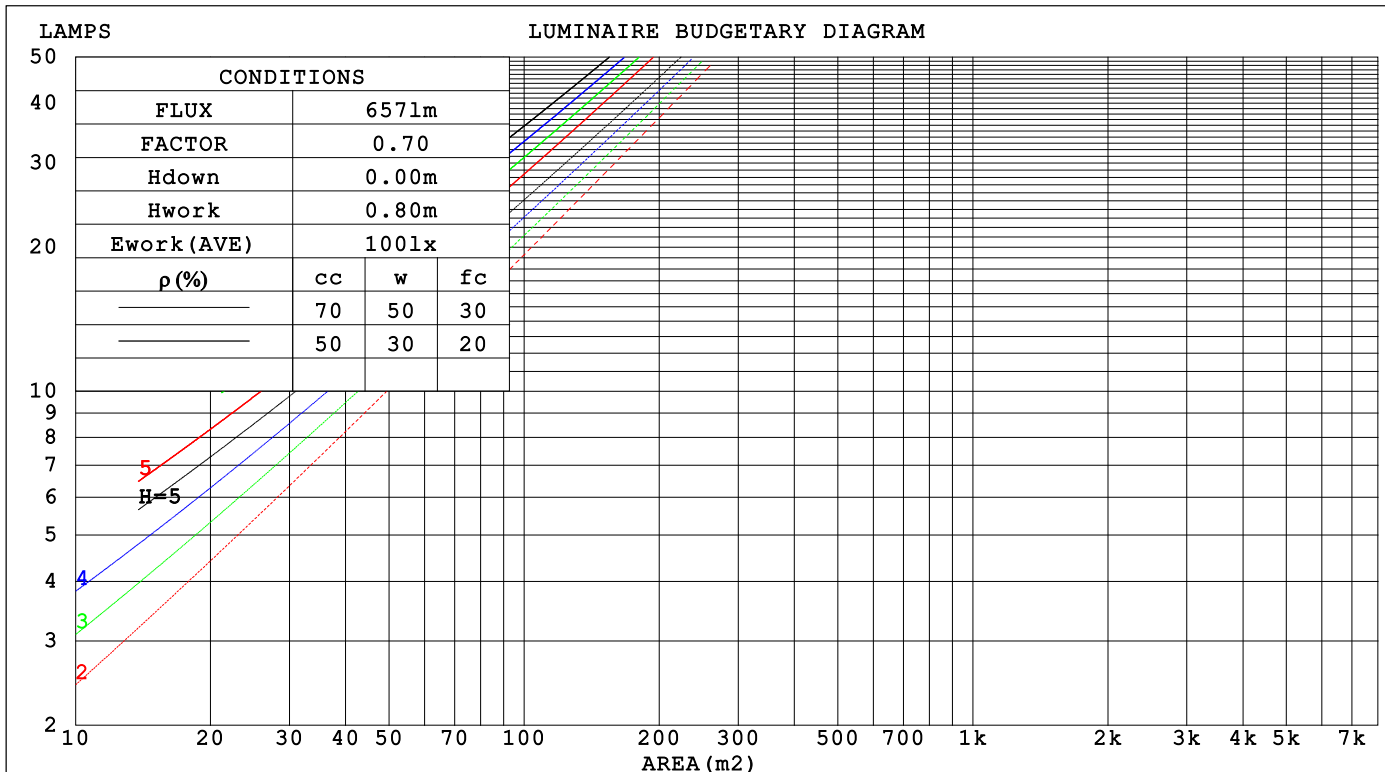
C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators: DAMIN
Test Date: 2023-08-23

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity: 65.0%
Test Distance: 9.640m [K=1.0000]
Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.34V I:0.0587A P:11.647W PF:0.8615 Freq:49.99Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1665.34x1 lm		
NAME: 136-133_4000K_13W	TYPE: 13W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.: 0.0715	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
p _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
p _{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	1.00
1.0	1.10	1.07	1.05	1.08	1.06	1.03	1.04	1.02	1.00	1.00	.99	.97	.97	.96	.94	.93
2.0	1.02	.97	.94	.90	.96	.93	.97	.93	.91	.94	.91	.89	.91	.89	.87	.85
3.0	.94	.89	.85	.93	.88	.84	.90	.86	.83	.88	.84	.81	.85	.82	.80	.78
4.0	.87	.81	.77	.86	.81	.76	.84	.79	.75	.82	.78	.75	.80	.77	.74	.72
5.0	.81	.75	.70	.80	.74	.70	.78	.73	.69	.77	.72	.69	.75	.71	.68	.67
6.0	.76	.69	.65	.75	.69	.65	.73	.68	.64	.72	.67	.64	.71	.66	.63	.62
7.0	.71	.64	.60	.70	.64	.60	.69	.63	.59	.68	.63	.59	.66	.62	.59	.57
8.0	.66	.60	.56	.66	.60	.56	.65	.59	.55	.64	.59	.55	.63	.58	.55	.53
9.0	.62	.56	.52	.62	.56	.52	.61	.55	.52	.60	.55	.51	.59	.55	.51	.50
10.0	.59	.53	.49	.58	.52	.49	.57	.52	.48	.57	.52	.48	.56	.51	.48	.47



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:DAMIN
Test Date:2023-08-23

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:9.640m [K=1.0000]
Remarks:

WEC AND CCEC

Test:U:230.34V I:0.0587A P:11.647W PF:0.8615 Freq:49.99Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1665.34x1 lm		
NAME: 136-133_4000K_13W	TYPE: 13W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.: 0.0715	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	.190	.108	.034	.183	.105	.033	.171	.098	.031	.159	.092	.029	.148	.086	.028		
2.0	.183	.100	.031	.178	.098	.030	.167	.093	.029	.157	.088	.028	.148	.084	.026		
3.0	.175	.093	.028	.170	.091	.027	.161	.087	.027	.153	.084	.026	.145	.080	.025		
4.0	.167	.087	.026	.163	.085	.025	.155	.082	.025	.147	.079	.024	.140	.076	.023		
5.0	.159	.081	.023	.155	.080	.023	.148	.077	.023	.142	.075	.022	.136	.073	.022		
6.0	.152	.076	.022	.148	.075	.022	.142	.073	.021	.136	.071	.021	.131	.069	.020		
7.0	.145	.071	.020	.142	.071	.020	.136	.069	.020	.131	.067	.020	.126	.066	.019		
8.0	.138	.067	.019	.135	.067	.019	.130	.065	.019	.126	.064	.018	.122	.062	.018		
9.0	.132	.064	.018	.130	.063	.018	.125	.062	.018	.121	.061	.017	.117	.059	.017		
10.0	.126	.061	.017	.124	.060	.017	.120	.059	.017	.116	.058	.016	.113	.057	.016		

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	.172	.157	.144	.147	.135	.124	.101	.093	.086	.058	.054	.050	.019	.017	.016		
2.0	.158	.132	.111	.135	.114	.096	.093	.079	.067	.053	.046	.039	.017	.015	.013		
3.0	.146	.114	.088	.125	.098	.076	.086	.068	.053	.050	.040	.031	.016	.013	.010		
4.0	.137	.099	.071	.117	.086	.061	.081	.060	.043	.047	.035	.026	.015	.011	.008		
5.0	.128	.088	.058	.110	.076	.050	.076	.053	.035	.044	.031	.021	.014	.010	.007		
6.0	.121	.079	.048	.104	.068	.042	.072	.048	.030	.042	.028	.018	.013	.009	.006		
7.0	.115	.071	.041	.099	.062	.035	.068	.043	.025	.040	.026	.015	.013	.008	.005		
8.0	.109	.065	.035	.094	.056	.030	.065	.040	.022	.038	.023	.013	.012	.008	.004		
9.0	.104	.060	.030	.090	.052	.026	.062	.037	.019	.036	.022	.011	.012	.007	.004		
10.0	.100	.056	.026	.086	.048	.023	.060	.034	.016	.035	.020	.010	.011	.007	.003		

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:DAMIN
Test Date:2023-08-23

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:9.640m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

Test:U:230.34V I:0.0587A P:11.647W PF:0.8615 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1665.34x1 lm										
NAME: 136-133_4000K_13W						TYPE: 13W			WEIGHT:	
SPEC.: 4000K						DIM.:			SERIAL No.:	
MFR.: Tronix Lighting						SUR.: 0.0715			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	18.4	19.4	18.6	19.6	19.8	18.1	19.1	18.3	19.3	19.5
3H	18.2	19.2	18.5	19.4	19.6	17.9	18.9	18.2	19.1	19.3
4H	18.2	19.1	18.4	19.3	19.5	17.9	18.7	18.1	19.0	19.2
6H	18.1	18.9	18.4	19.2	19.4	17.8	18.6	18.1	18.9	19.1
8H	18.0	18.8	18.4	19.1	19.4	17.7	18.5	18.1	18.8	19.1
12H	18.0	18.8	18.3	19.0	19.3	17.7	18.5	18.0	18.7	19.0
4H 2H	18.2	19.1	18.5	19.3	19.6	17.9	18.8	18.2	19.0	19.3
3H	18.0	18.8	18.4	19.1	19.4	17.8	18.5	18.1	18.8	19.1
4H	18.0	18.7	18.3	19.0	19.3	17.7	18.4	18.0	18.7	19.0
6H	17.9	18.5	18.3	18.8	19.2	17.6	18.2	18.0	18.5	18.9
8H	17.9	18.4	18.3	18.8	19.1	17.6	18.1	18.0	18.5	18.8
12H	17.8	18.3	18.2	18.7	19.1	17.5	18.0	17.9	18.4	18.8
8H 4H	17.8	18.4	18.2	18.7	19.1	17.5	18.1	17.9	18.5	18.8
6H	17.8	18.2	18.2	18.6	19.0	17.5	17.9	17.9	18.3	18.7
8H	17.7	18.1	18.2	18.6	19.0	17.4	17.8	17.9	18.3	18.7
12H	17.7	18.1	18.2	18.5	19.0	17.4	17.8	17.9	18.2	18.7
12H 4H	17.8	18.3	18.2	18.7	19.1	17.5	18.0	17.9	18.4	18.8
6H	17.7	18.1	18.2	18.5	19.0	17.4	17.8	17.9	18.2	18.7
8H	17.7	18.0	18.2	18.5	19.0	17.4	17.7	17.9	18.2	18.7
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 2.2 / - 5.3					+ 2.1 / - 5.7				
1.5H	+ 2.6 / - 3.4					+ 2.2 / - 3.5				
2.0H	+ 4.4 / - 8.8					+ 4.3 / - 9.0				

CIE Pub.117, 1665 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 1.8$)
Area: 0.01606 m²

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:DAMIN
Test Date:2023-08-23

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:9.640m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:230.34V I:0.0587A P:11.647W PF:0.8615 Freq:49.99Hz		
UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1665.34x1 lm		
NAME: 136-133_4000K_13W	TYPE: 13W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.: 0.0715	Shielding Angle:

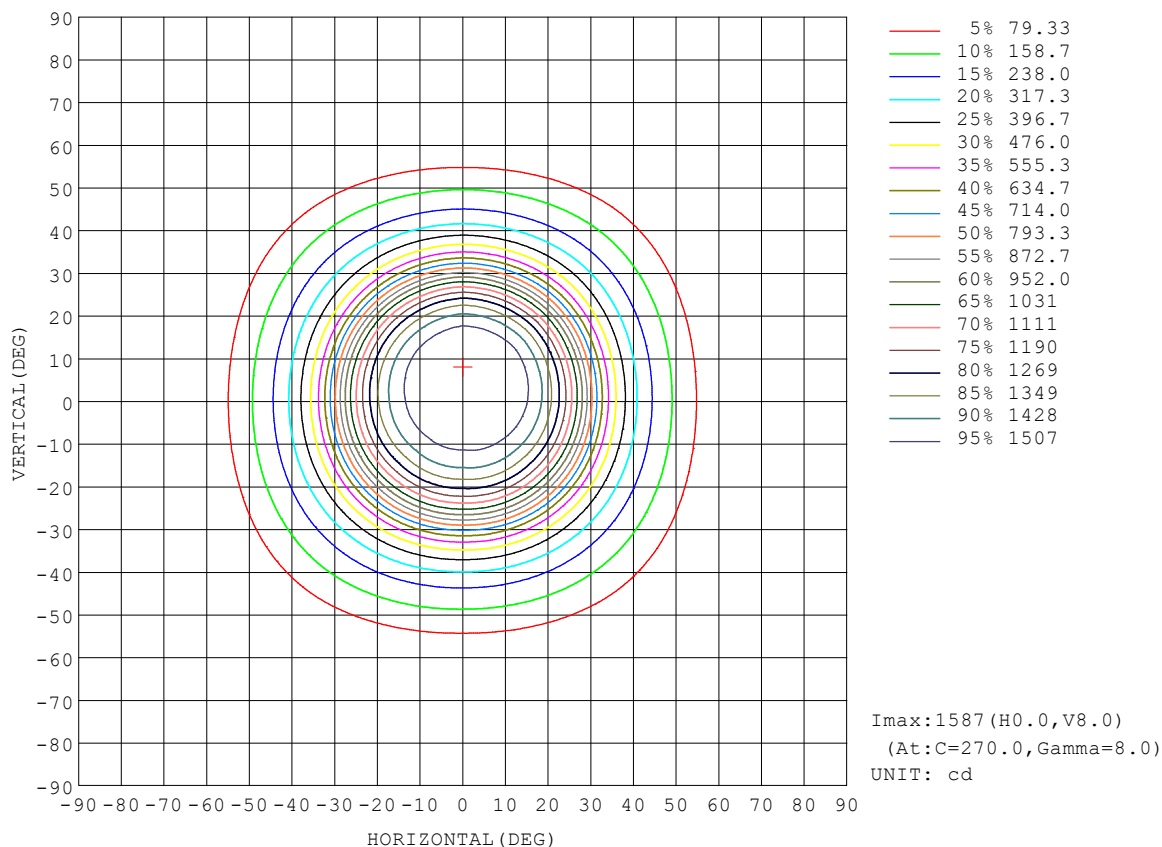
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	81	74	69	81	74	69	80	73	69	65
0.80	90	83	78	89	83	78	88	82	78	74
1.00	96	89	85	95	89	85	93	89	84	80
1.25	100	94	90	99	94	90	97	93	89	85
1.50	103	98	94	102	97	94	100	96	93	88
2.00	107	102	99	105	101	98	103	99	96	91
2.50	109	105	101	107	103	100	104	101	98	92
3.00	111	107	104	109	105	103	105	103	100	94
4.00	113	110	107	111	108	106	107	105	103	96
5.00	114	111	109	112	110	108	108	106	105	97
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3 °C
 Operators: DAMIN
 Test Date: 2023-08-23

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000H_V1 SYSTEM V2.00.456
 Humidity: 65.0%
 Test Distance: 9.640m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:230.34V I:0.0587A P:11.647W PF:0.8615 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1665.34x1 lm		
NAME: 136-133_4000K_13W	TYPE: 13W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.: 0.0715	Shielding Angle:

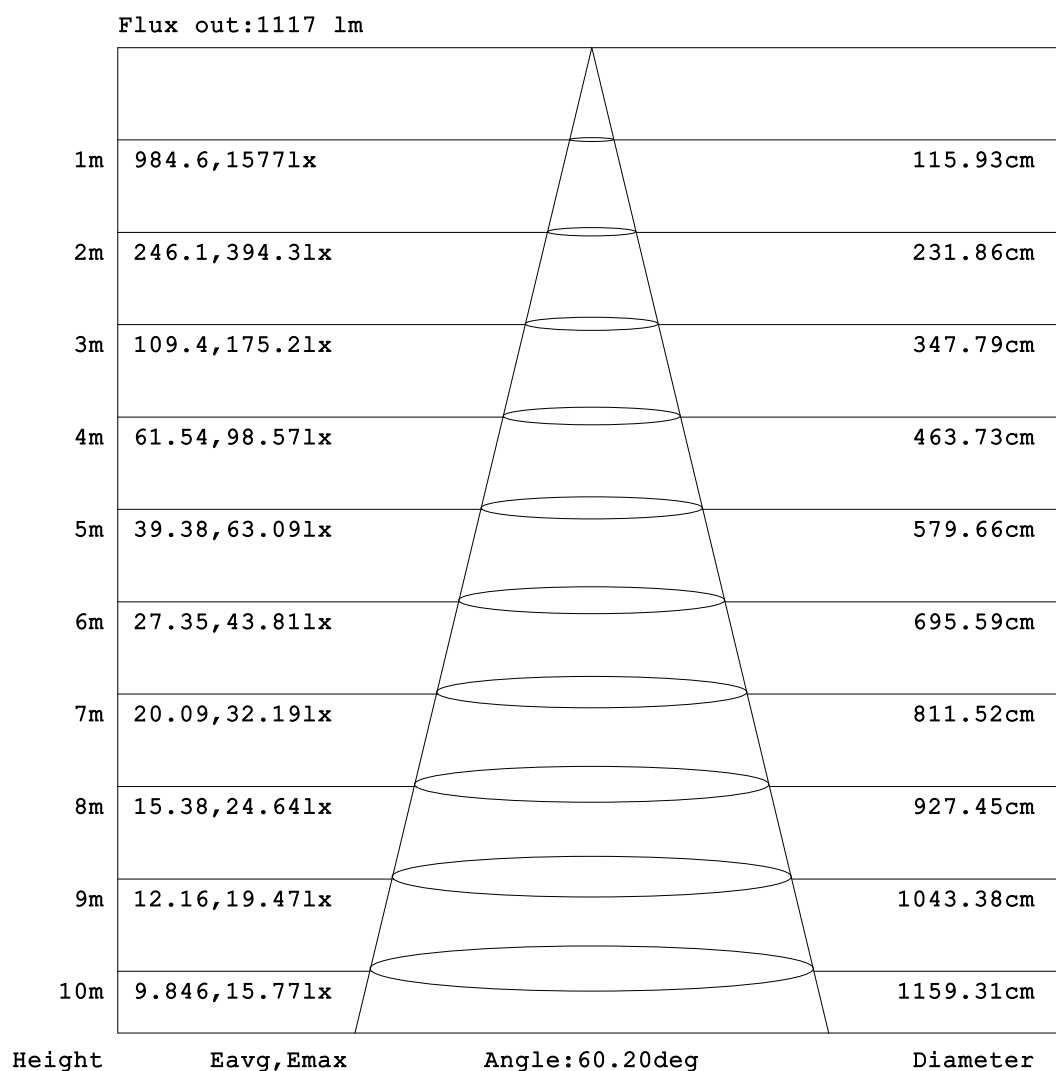


C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:DAMIN
Test Date:2023-08-23

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:9.640m [K=1.0000]
Remarks:

AAI Figure

Test:U:230.34V I:0.0587A P:11.647W PF:0.8615 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1665.34x1 lm		
NAME: 136-133_4000K_13W	TYPE: 13W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.: 0.0715	Shielding Angle:



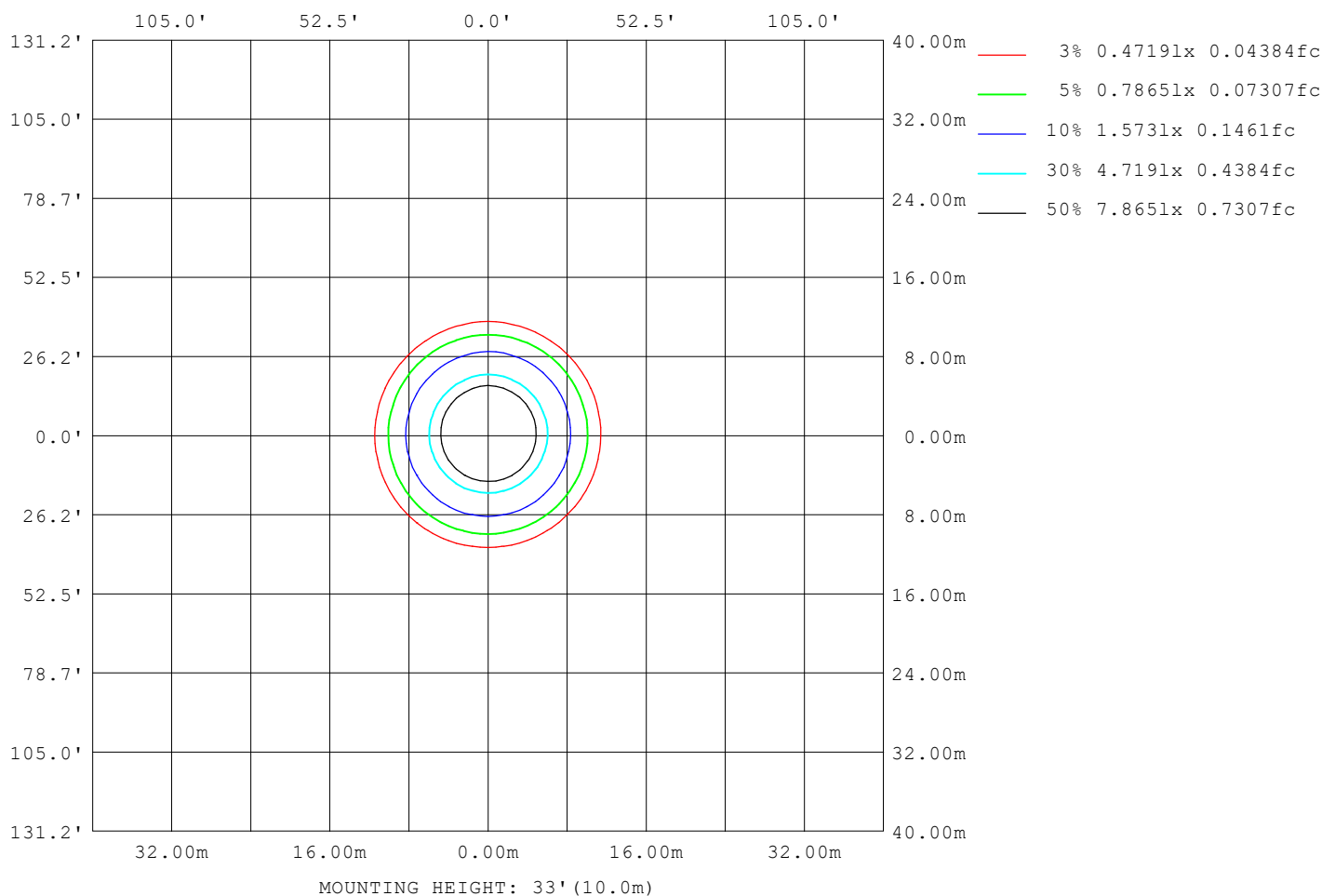
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature: 25.3°C
Operators: DAMIN
Test Date: 2023-08-23

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System: EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity: 65.0%
Test Distance: 9.640m [K=1.0000]
Remarks:

ISOLUX DIAGRAM

Test:U:230.34V I:0.0587A P:11.647W PF:0.8615 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1665.34x1 lm		
NAME: 136-133_4000K_13W	TYPE: 13W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.: 0.0715	Shielding Angle:



C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:DAMIN
Test Date:2023-08-23

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:9.640m [K=1.0000]
Remarks:

LED Avg.L Report

Test:U:230.34V I:0.0587A P:11.647W PF:0.8615 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1665.34x1 lm		
NAME: 136-133_4000K_13W	TYPE: 13W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.: 0.0715	Shielding Angle:

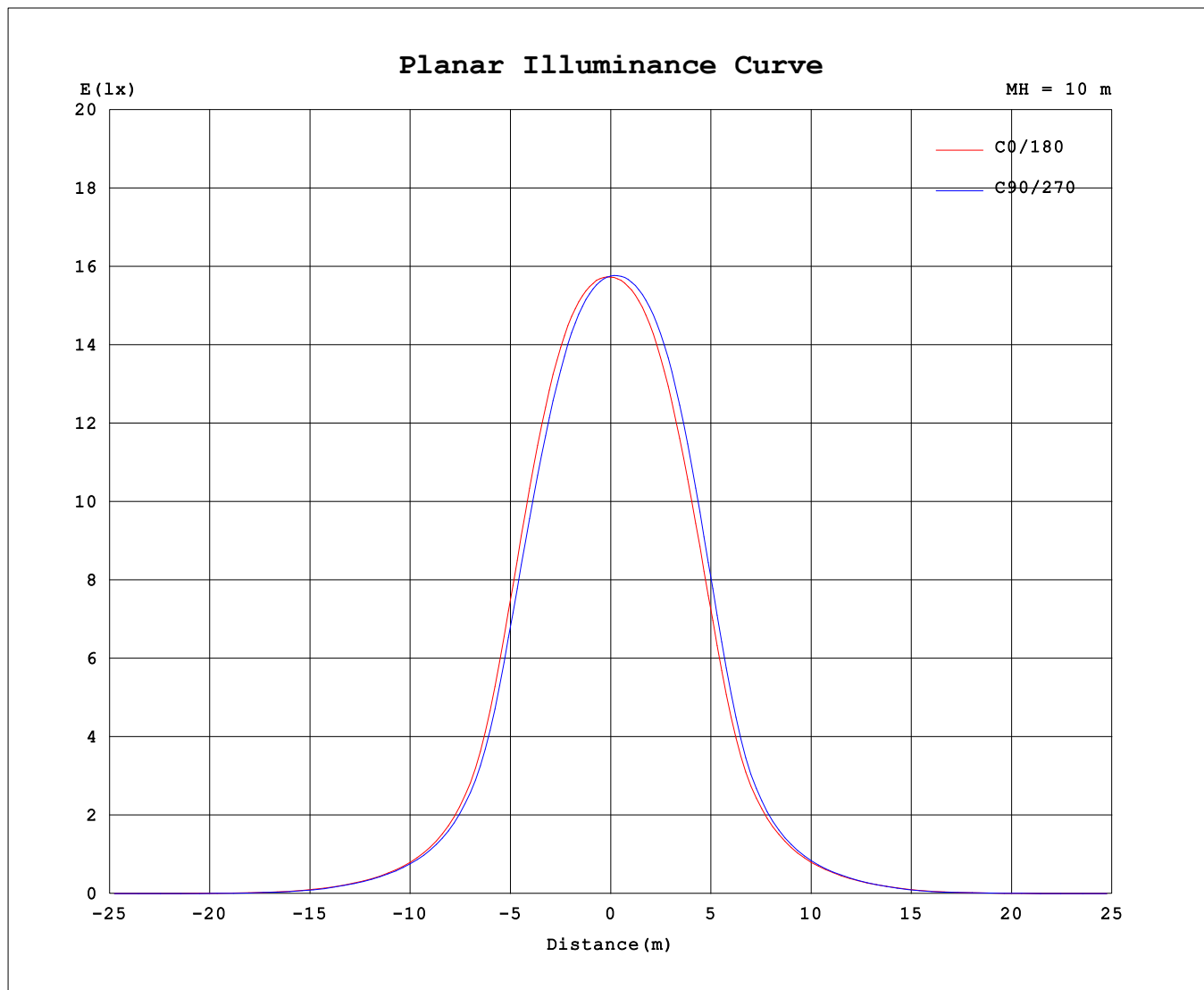
AvgL	cd/m2
L_0~180 (65) av	1296
L_0~180 (75) av	869
L_0~180 (85) av	1584
L_90~270 (65) av	1063
L_90~270 (75) av	835
L_90~270 (85) av	1480
L_45 (65) av	1263
L_45 (75) av	846
L_45 (85) av	1508

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
C Interval: 45.0DEG
Test Speed: HIGH
Temperature:25.3℃
Operators:DAMIN
Test Date:2023-08-23

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:9.640m [K=1.0000]
Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3 °C
 Operators: DAMIN
 Test Date: 2023-08-23

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000H_V1 SYSTEM V2.00.456
 Humidity: 65.0%
 Test Distance: 9.640m [K=1.0000]
 Remarks:

Test:U:230.34V I:0.0587A P:11.647W PF:0.8615 Freq:49.99Hz UTHDi:0.00% ITHDi:0.00% KDisp:0 Lamp Flux:1665.34x1 lm		
NAME: 136-133_4000K_13W	TYPE: 13W	WEIGHT:
SPEC.: 4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.: 0.0715	Shielding Angle:

UNIT: cd

[illegible]

```

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000H_V1 SYSTEM V2.00.456
Humidity:65.0%
Test Distance:9.640m [K=1.0000]
Remarks:

```