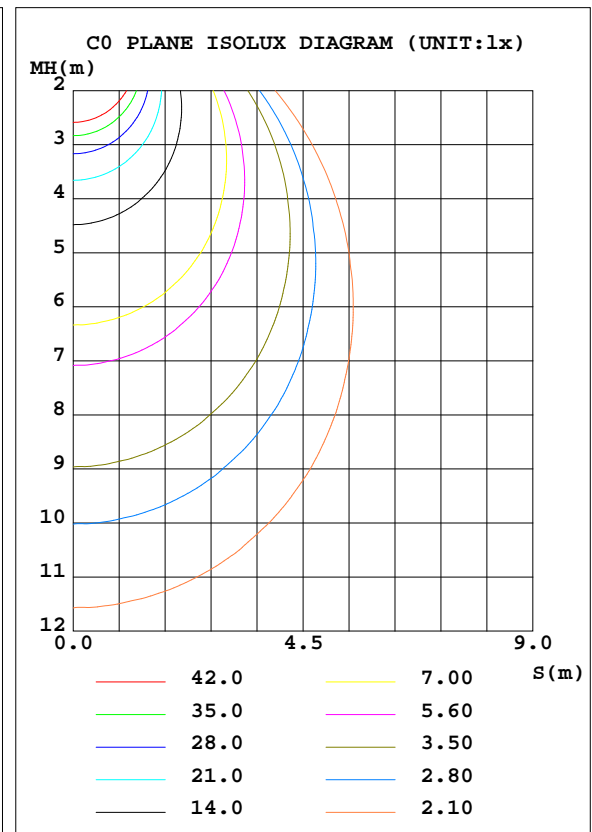
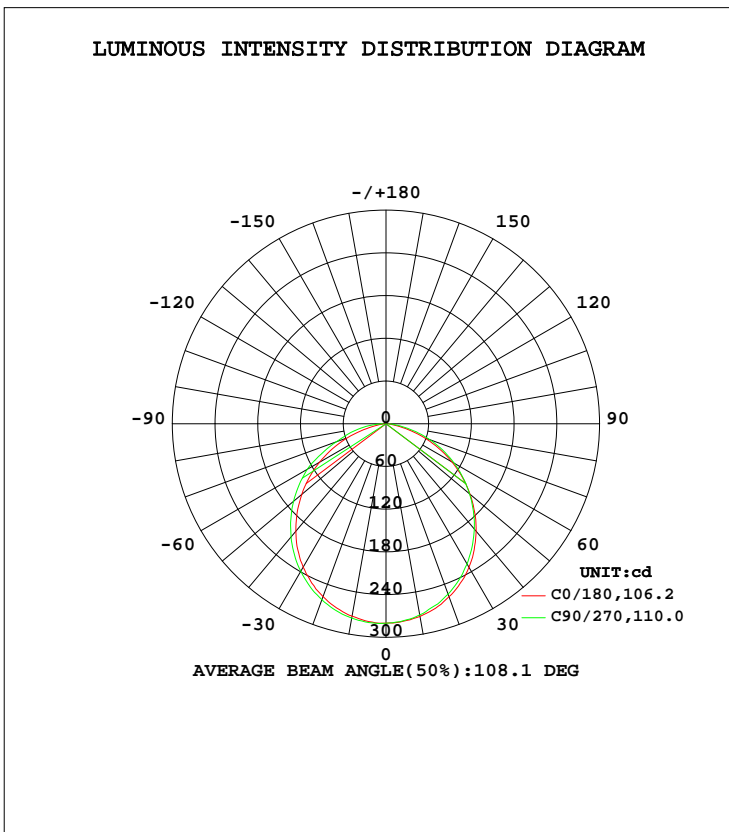


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.77V I:0.0459A P:10.003W PF:0.9440 Freq:50.00Hz Lamp Flux:757.67x1 lm		
NAME: 136-186_4000K	TYPE:10W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.064	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 75.75 lm/W			
MODEL	136-186_4000K	I _{max} (cd)	280.7	S/MH(C0/180)	1.24
NOMINAL POWER(W)	10	LOR(%)	100.0	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	757.67	η UP, DN(C0-180)	0.0,48.5
NOMINAL FLUX(lm)	757.67	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0,51.5
LAMPS INSIDE	1	η up(%)	0.0	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)		η down(%)	100.0	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-01-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.404.7
 Humidity:65.0%
 Test Distance:9.900m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

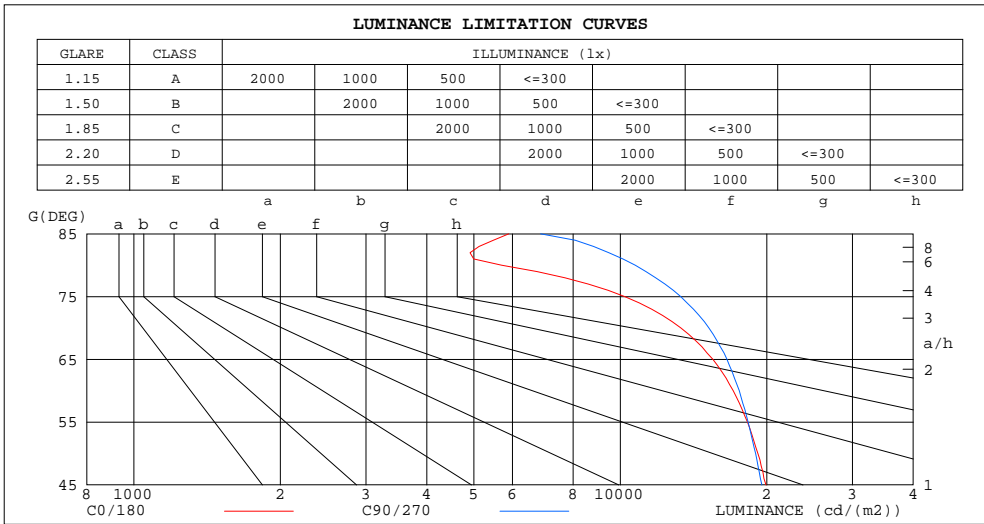
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	Φ lum, lamp
10	274.8	272.9	272.7	273.0	274.5	276.3	277.1	276.0	0- 10	26.47	26.47	3.49,3.49
20	258.7	256.2	254.7	255.2	258.4	261.7	263.1	261.7	10- 20	75.60	102.1	13.5,13.5
30	232.9	229.2	227.7	228.7	232.7	236.9	239.2	237.5	20- 30	113.8	215.9	28.5,28.5
40	197.1	194.4	193.2	193.5	196.9	203.7	207.6	203.6	30- 40	135.6	351.4	46.4,46.4
50	154.2	153.5	153.4	152.8	154.5	164.3	169.4	163.9	40- 50	138.1	489.5	64.6,64.6
60	106.8	108.8	110.4	107.8	107.5	119.7	127.2	119.1	50- 60	121.7	611.2	80.7,80.7
70	57.01	61.69	65.45	60.98	57.48	72.76	74.57	72.27	60- 70	88.39	699.6	92.3,92.3
80	12.38	21.95	23.45	21.90	12.32	28.58	35.82	28.32	70- 80	45.38	745.0	98.3,98.3
90	3.249	4.393	3.681	4.707	3.064	5.676	4.191	5.509	80- 90	12.70	757.7	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		

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-01-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.404.7
 Humidity:65.0%
 Test Distance:9.900m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

Test:U:230.77V I:0.0459A P:10.003W PF:0.9440 Freq:50.00Hz Lamp Flux:757.67x1 lm		
NAME: 136-186_4000K	TYPE:10W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
	SUR.:0.064	Shielding Angle:



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	5899	6857
80	5698	10735
75	10210	13304
70	13318	15208
65	15497	16571
60	17068	17555
55	18252	18302
50	19173	18965
45	19922	19536

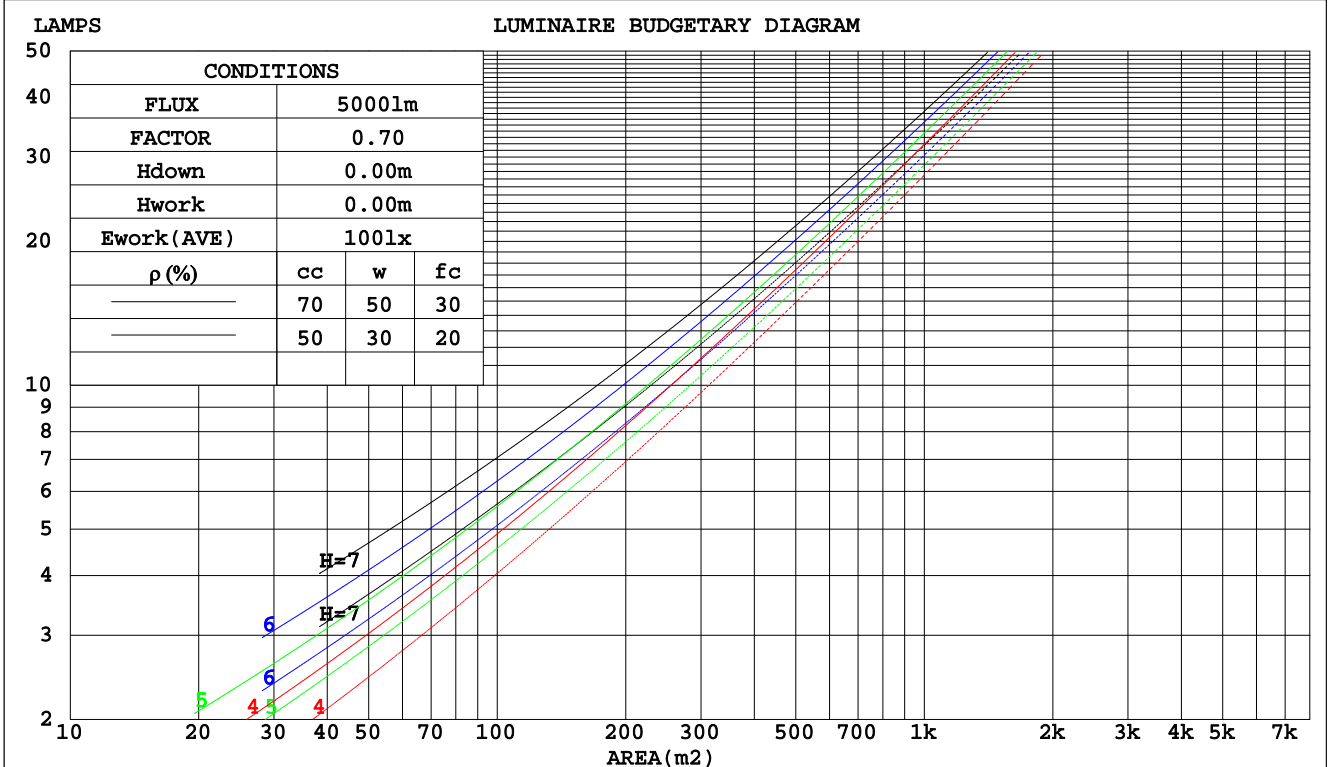
C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-01-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.404.7
 Humidity:65.0%
 Test Distance:9.900m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.77V I:0.0459A P:10.003W PF:0.9440 Freq:50.00Hz Lamp Flux:757.67x1 lm		
NAME: 136-186_4000K	TYPE:10W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
	SUR.:0.064	Shielding Angle:

pcc	80%			70%			50%			30%			10%			0
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
pw																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	1.04	1.00	.96	1.02	.98	.95	.98	.95	.92	.94	.91	.89	.90	.88	.86	.84
2.0	.91	.85	.79	.89	.83	.78	.86	.81	.76	.83	.78	.74	.80	.76	.73	.71
3.0	.80	.72	.66	.79	.71	.65	.76	.69	.64	.73	.68	.63	.70	.66	.62	.60
4.0	.71	.63	.56	.70	.62	.56	.67	.60	.55	.65	.59	.54	.63	.58	.53	.51
5.0	.64	.55	.48	.63	.54	.48	.60	.53	.47	.59	.52	.47	.57	.51	.46	.44
6.0	.57	.49	.42	.56	.48	.42	.55	.47	.42	.53	.46	.41	.51	.45	.41	.39
7.0	.52	.43	.37	.51	.43	.37	.50	.42	.37	.48	.42	.37	.47	.41	.36	.34
8.0	.48	.39	.33	.47	.39	.33	.46	.38	.33	.44	.38	.33	.43	.37	.33	.31
9.0	.44	.35	.30	.43	.35	.30	.42	.35	.30	.41	.34	.30	.40	.34	.29	.28
10.0	.40	.32	.27	.40	.32	.27	.39	.32	.27	.38	.31	.27	.37	.31	.27	.25



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2020-01-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000H_V1 SYSTEM V2.0.404.7
 Humidity: 65.0%
 Test Distance: 9.900m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:230.77V I:0.0459A P:10.003W PF:0.9440 Freq:50.00Hz Lamp Flux:757.67x1 lm		
NAME: 136-186_4000K	TYPE:10W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
	SUR.:0.064	Shielding Angle:

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)									
0.0																
1.0	.300	.171	.054	.293	.167	.053	.280	.161	.051	.268	.154	.050	.257	.149	.048	
2.0	.284	.156	.048	.278	.153	.047	.266	.148	.046	.255	.143	.045	.246	.139	.044	
3.0	.264	.141	.042	.259	.138	.042	.248	.135	.041	.239	.131	.040	.230	.127	.039	
4.0	.244	.127	.037	.240	.125	.037	.231	.122	.037	.222	.119	.036	.214	.116	.035	
5.0	.227	.115	.033	.222	.114	.033	.214	.112	.033	.207	.109	.032	.200	.107	.032	
6.0	.211	.106	.030	.207	.104	.030	.200	.102	.030	.193	.100	.029	.187	.098	.029	
7.0	.196	.097	.028	.193	.096	.027	.186	.094	.027	.180	.093	.027	.175	.091	.027	
8.0	.184	.090	.025	.181	.089	.025	.175	.087	.025	.169	.086	.025	.164	.084	.025	
9.0	.172	.083	.023	.170	.083	.023	.164	.081	.023	.160	.080	.023	.155	.079	.023	
10.0	.162	.078	.022	.160	.077	.022	.155	.076	.021	.151	.075	.021	.146	.074	.021	

ρcc	80%			70%			50%			30%			10%			0
ρw	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρfc	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	.180	.156	.135	.154	.134	.116	.105	.092	.080	.061	.053	.047	.019	.017	.015	
2.0	.171	.132	.099	.147	.114	.086	.100	.079	.060	.058	.046	.035	.019	.015	.011	
3.0	.163	.114	.075	.140	.099	.065	.096	.068	.046	.056	.040	.027	.018	.013	.009	
4.0	.156	.101	.059	.134	.087	.051	.092	.061	.036	.053	.036	.021	.017	.012	.007	
5.0	.148	.090	.048	.127	.078	.042	.088	.055	.029	.051	.032	.017	.016	.010	.006	
6.0	.141	.082	.040	.121	.071	.034	.084	.050	.024	.049	.029	.014	.016	.010	.005	
7.0	.134	.075	.034	.116	.065	.029	.080	.046	.021	.046	.027	.012	.015	.009	.004	
8.0	.128	.069	.029	.110	.060	.025	.076	.042	.018	.044	.025	.011	.014	.008	.004	
9.0	.122	.064	.025	.105	.056	.022	.073	.039	.016	.042	.023	.009	.014	.008	.003	
10.0	.116	.060	.023	.100	.052	.020	.070	.037	.014	.041	.022	.008	.013	.007	.003	

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-01-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.404.7
 Humidity:65.0%
 Test Distance:9.900m [K=1.0000]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:230.77V I:0.0459A P:10.003W PF:0.9440 Freq:50.00Hz Lamp Flux:757.67x1 lm										
NAME: 136-186_4000K					TYPE:10W			WEIGHT:		
SPEC.:4000K					DIM.:			SERIAL No.:		
MFR.: Tronix Lighting					SUR.:0.064			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	22.8	24.3	23.0	24.5	24.7	22.8	24.3	23.1	24.5	24.7
3H	24.0	25.3	24.3	25.6	25.8	24.2	25.6	24.5	25.8	26.0
4H	24.3	25.6	24.6	25.9	26.1	24.7	26.0	25.0	26.2	26.5
6H	24.4	25.6	24.7	25.9	26.2	25.0	26.2	25.3	26.5	26.8
8H	24.4	25.6	24.7	25.9	26.2	25.0	26.2	25.4	26.5	26.8
12H	24.4	25.5	24.7	25.8	26.1	25.1	26.2	25.4	26.5	26.8
4H 2H	23.3	24.6	23.6	24.9	25.1	23.4	24.7	23.7	24.9	25.2
3H	24.7	25.8	25.0	26.1	26.4	24.9	26.0	25.2	26.3	26.6
4H	25.1	26.2	25.5	26.5	26.8	25.5	26.5	25.8	26.8	27.2
6H	25.3	26.2	25.7	26.6	26.9	25.9	26.8	26.3	27.2	27.5
8H	25.3	26.2	25.7	26.6	26.9	26.0	26.9	26.4	27.2	27.6
12H	25.3	26.1	25.8	26.5	26.9	26.0	26.8	26.5	27.2	27.6
8H 4H	25.3	26.2	25.7	26.5	26.9	25.6	26.5	26.1	26.9	27.3
6H	25.6	26.3	26.0	26.7	27.1	26.2	26.9	26.6	27.3	27.7
8H	25.7	26.3	26.1	26.7	27.2	26.3	27.0	26.8	27.4	27.8
12H	25.7	26.3	26.2	26.7	27.2	26.4	27.0	26.9	27.4	27.9
12H 4H	25.3	26.1	25.7	26.5	26.9	25.6	26.4	26.0	26.8	27.2
6H	25.6	26.3	26.1	26.7	27.1	26.2	26.8	26.6	27.2	27.7
8H	25.7	26.3	26.2	26.7	27.2	26.4	26.9	26.9	27.4	27.9
Variations with the observer position at spacings:										
S = 1.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.2				
1.5H	+ 0.2 / - 0.4					+ 0.2 / - 0.3				
2.0H	+ 0.3 / - 0.4					+ 0.3 / - 0.3				

CIE Pub.117, 757.7 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -1.0)

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-01-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.404.7
 Humidity:65.0%
 Test Distance:9.900m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:230.77V I:0.0459A P:10.003W PF:0.9440 Freq:50.00Hz Lamp Flux:757.67x1 lm		
NAME: 136-186_4000K	TYPE:10W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.064	Shielding Angle:

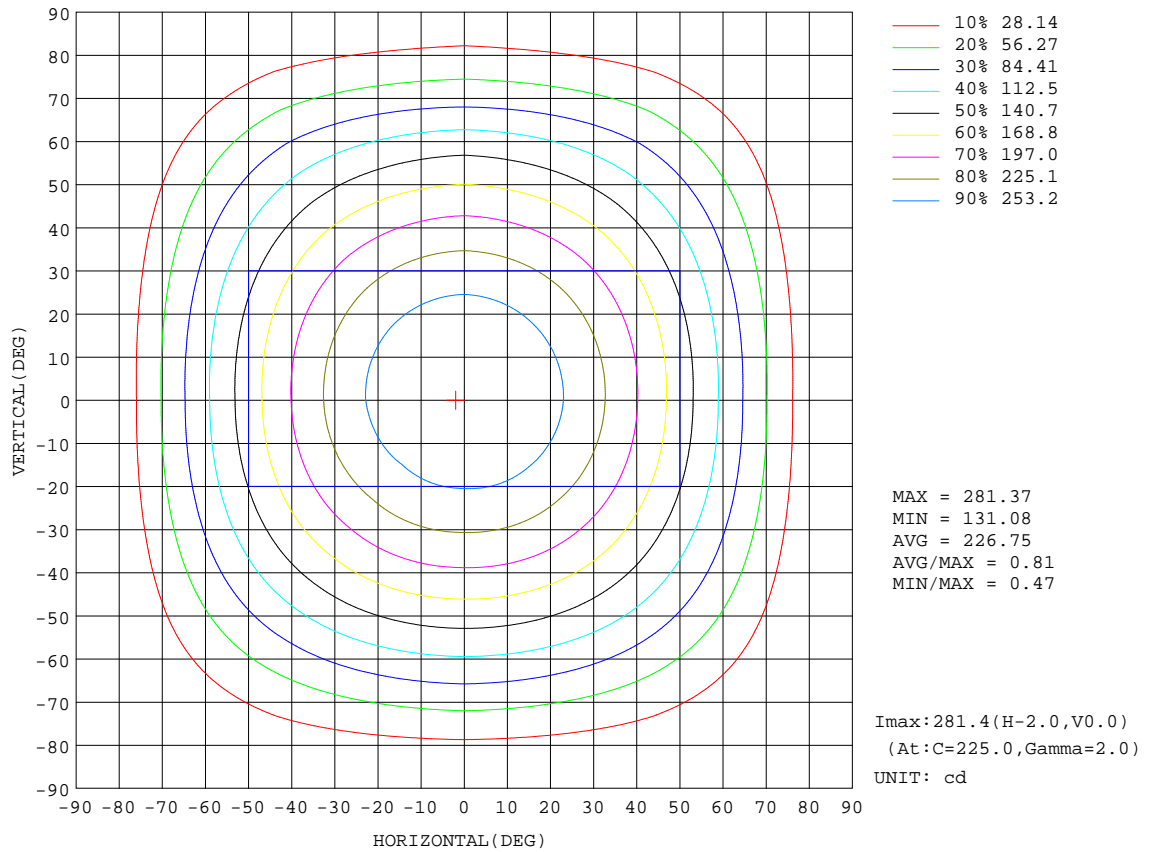
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	58	47	40	58	47	40	57	46	40	33
0.80	69	57	50	68	57	50	66	56	49	43
1.00	77	66	59	76	66	59	74	67	58	51
1.25	84	74	67	83	73	66	80	72	66	58
1.50	89	79	73	87	78	72	84	77	71	64
2.00	96	87	81	94	86	80	90	84	79	71
2.50	100	92	86	98	91	85	94	88	83	75
3.00	103	96	91	101	95	90	97	92	88	79
4.00	107	101	97	104	99	95	100	96	93	84
5.00	109	104	100	107	102	99	102	99	96	87
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:25.3DEG
 Operators:DAMIN
 Test Date:2020-01-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.404.7
 Humidity:65.0%
 Test Distance:9.900m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:230.77V I:0.0459A P:10.003W PF:0.9440 Freq:50.00Hz Lamp Flux:757.67x1 lm		
NAME: 136-186_4000K	TYPE:10W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.064	Shielding Angle:



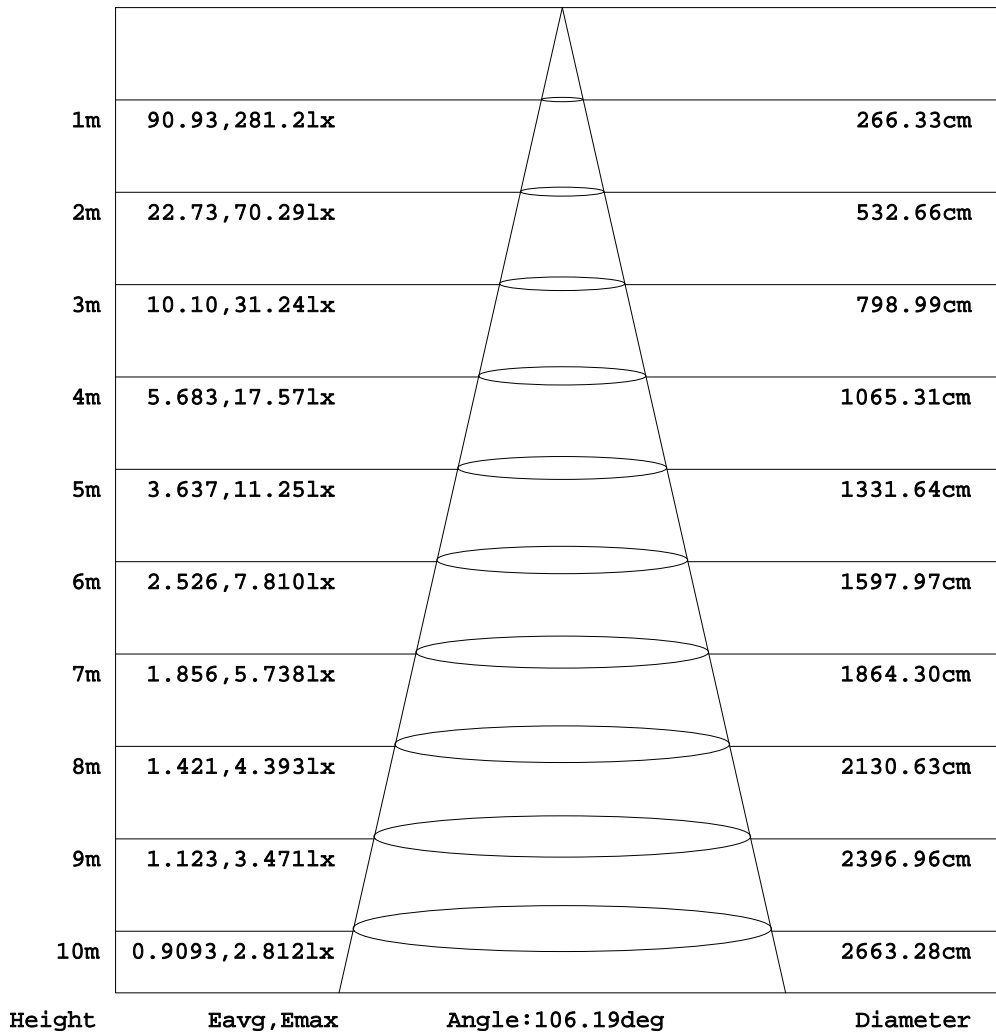
C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2020-01-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000H_V1 SYSTEM V2.0.404.7
 Humidity: 65.0%
 Test Distance: 9.900m [K=1.0000]
 Remarks:

AAI Figure

Test:U:230.77V I:0.0459A P:10.003W PF:0.9440 Freq:50.00Hz Lamp Flux:757.67x1 lm		
NAME: 136-186_4000K	TYPE:10W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.064	Shielding Angle:

Flux out:541.2 lm



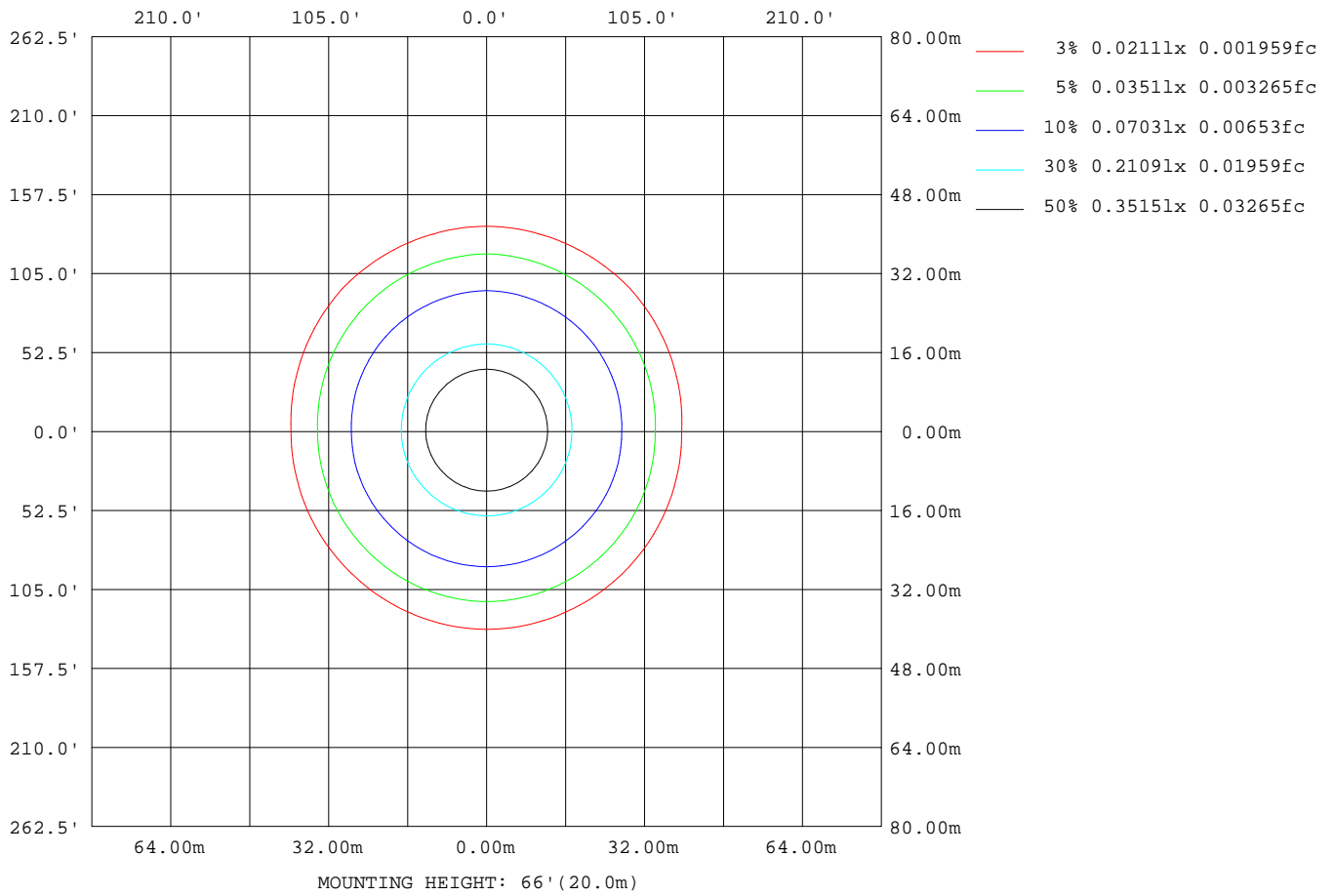
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2020-01-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000H_V1 SYSTEM V2.0.404.7
 Humidity: 65.0%
 Test Distance: 9.900m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

Test:U:230.77V I:0.0459A P:10.003W PF:0.9440 Freq:50.00Hz Lamp Flux:757.67x1 lm		
NAME: 136-186_4000K	TYPE:10W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.064	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-01-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.404.7
 Humidity:65.0%
 Test Distance:9.900m [K=1.0000]
 Remarks:

LED Avg.L Report

Test:U:230.77V I:0.0459A P:10.003W PF:0.9440 Freq:50.00Hz Lamp Flux:757.67x1 lm		
NAME: 136-186_4000K	TYPE:10W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.064	Shielding Angle:

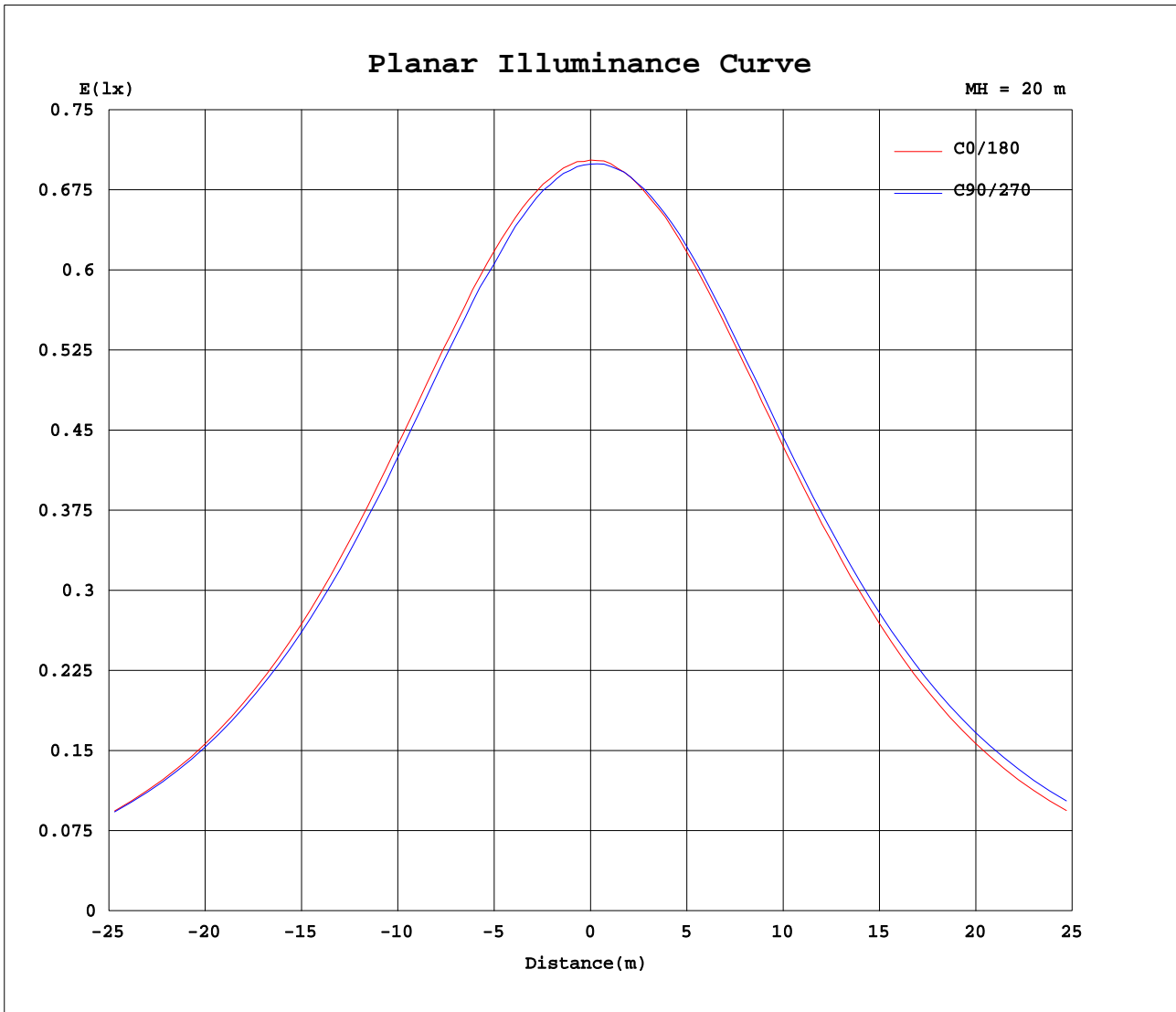
AvgL	cd/m2
L_0~180(65)av	15513
L_0~180(75)av	10123
L_0~180(85)av	5614
L_90~270(65)av	17735
L_90~270(75)av	15024
L_90~270(85)av	11815
L_45(65)av	17045
L_45(75)av	13600
L_45(85)av	11304

Standard: GB/T 29293-2012

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-01-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.404.7
 Humidity:65.0%
 Test Distance:9.900m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2020-01-12

γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000H_V1 SYSTEM V2.0.404.7
 Humidity: 65.0%
 Test Distance: 9.900m [K=1.0000]
 Remarks:

