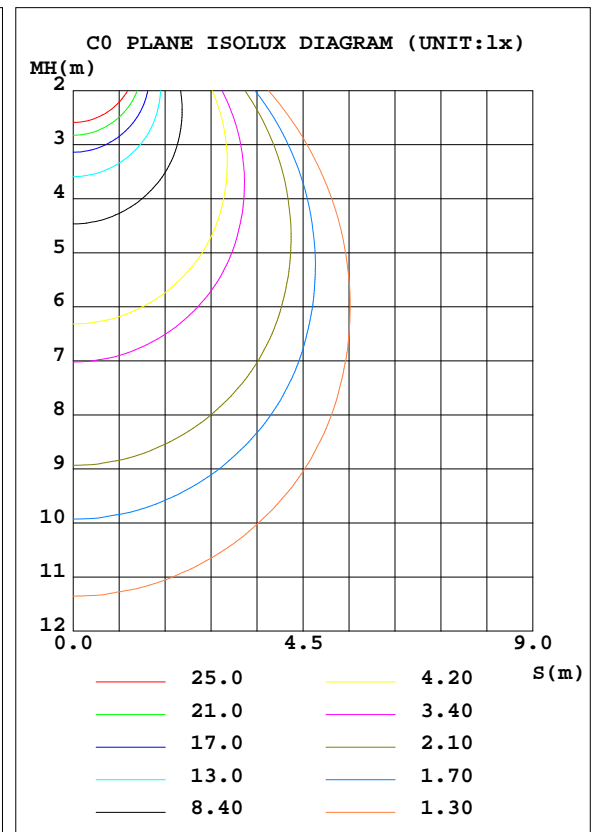
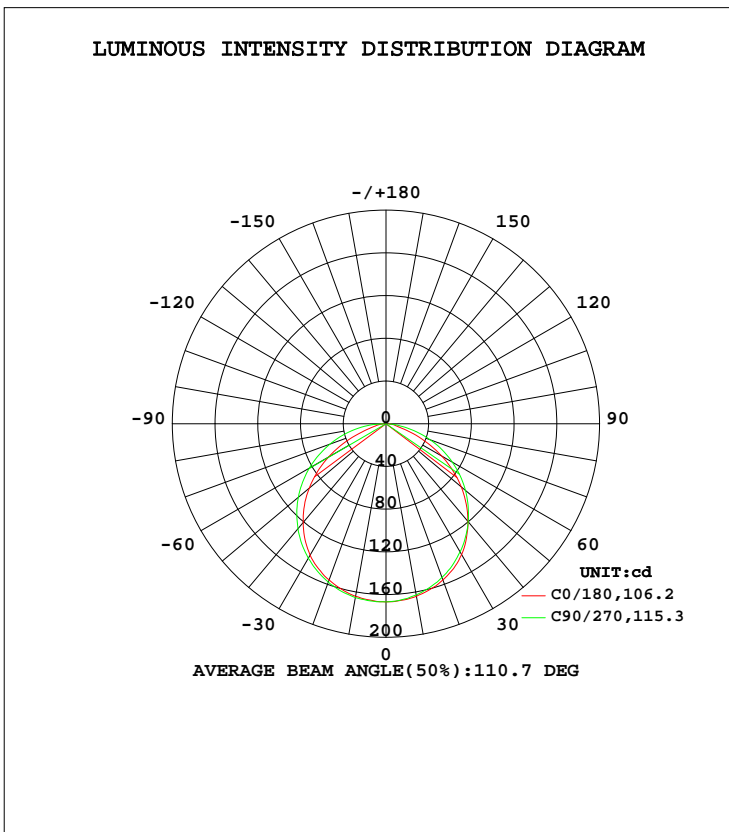


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.80V I:0.0306A P:6.4831W PF:0.9188 Freq:50.00Hz Lamp Flux:460.086x1 lm		
NAME: 136-180_4000K	TYPE:7W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.037	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 70.97 lm/W			
MODEL	136-180_4000K	I _{max} (cd)	167.1	S/MH(C0/180)	1.26
NOMINAL POWER(W)	7	LOR(%)	100.0	S/MH(C90/270)	1.29
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	460.09	η UP, DN(C0-180)	0.0,48.2
NOMINAL FLUX(lm)	460.086	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.0,51.8
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:

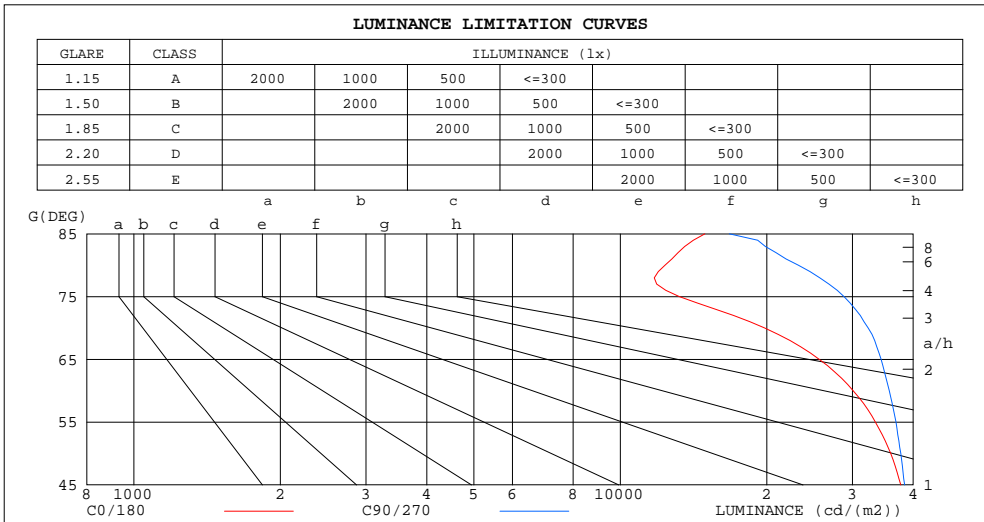
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	$\%lum, lamp$
10	164.0	163.4	162.8	163.0	164.1	164.9	165.2	164.7	0- 10	15.78	15.78	3.43,3.43
20	155.7	154.3	153.2	153.8	155.7	157.5	157.9	156.9	10- 20	45.30	61.08	13.3,13.3
30	141.5	139.2	138.7	139.4	142.1	144.3	145.5	144.0	20- 30	68.88	130.0	28.2,28.2
40	119.4	118.4	119.8	119.0	120.6	125.0	128.2	124.6	30- 40	82.86	212.8	46.3,46.3
50	92.05	92.83	97.17	93.83	93.86	100.7	107.1	100.0	40- 50	84.82	297.6	64.7,64.7
60	59.91	63.61	71.61	64.68	61.81	72.36	82.78	71.45	50- 60	74.33	372.0	80.8,80.8
70	26.96	33.21	44.31	33.46	27.18	41.40	55.85	40.62	60- 70	52.64	424.6	92.3,92.3
80	8.545	11.63	16.16	14.16	8.620	16.24	28.75	16.05	70- 80	26.36	451.0	98,98
90	2.351	4.048	2.775	4.747	2.266	5.233	2.653	5.033	80- 90	9.123	460.1	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:230.80V I:0.0306A P:6.4831W PF:0.9188 Freq:50.00Hz Lamp Flux:460.086x1 lm		
NAME: 136-180_4000K	TYPE:7W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.037	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	14920	16751
80	12359	23216
75	13214	28820
70	19794	32317
65	25633	34366
60	30095	35724
55	33449	36859
50	35965	37710
45	37705	38400

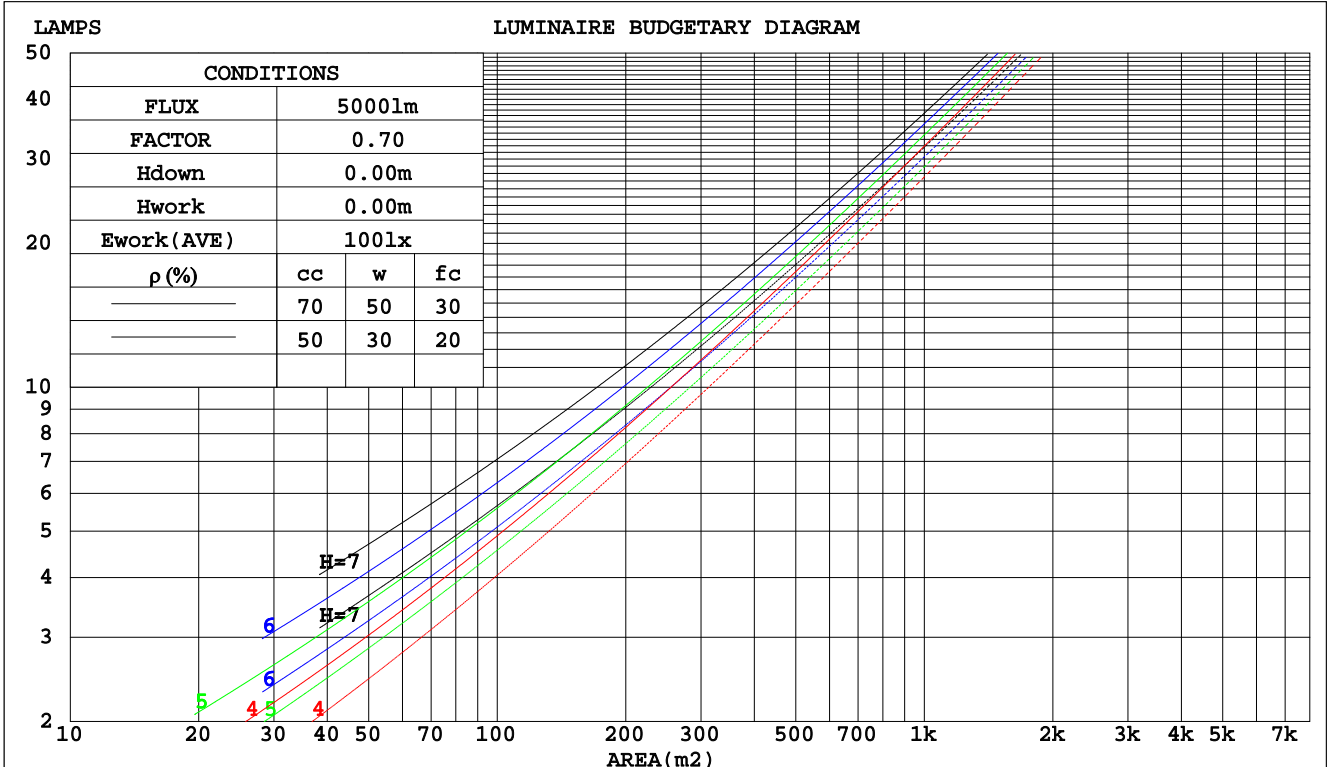
C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2020-01-12

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:230.80V I:0.0306A P:6.4831W PF:0.9188 Freq:50.00Hz Lamp Flux:460.086x1 lm		
NAME: 136-180_4000K	TYPE:7W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.037	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																
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	.84	.79	.89	.83	.78	.86	.81	.76	.82	.78	.74	.79	.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	.55	.67	.60	.55	.65	.59	.54	.63	.58	.53	.51
5.0	.64	.55	.48	.63	.54	.48	.60	.53	.47	.58	.52	.47	.57	.51	.46	.44
6.0	.57	.48	.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	.47	.39	.33	.47	.39	.33	.45	.38	.33	.44	.38	.33	.43	.37	.32	.31
9.0	.44	.35	.30	.43	.35	.30	.42	.35	.30	.41	.34	.29	.40	.34	.29	.27
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:230.80V I:0.0306A P:6.4831W PF:0.9188 Freq:50.00Hz Lamp Flux:460.086x1 lm		
NAME: 136-180_4000K	TYPE:7W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.037	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	.302	.172	.054	.295	.168	.053	.282	.162	.052	.269	.155	.050	.258	.150	.048	
2.0	.285	.156	.048	.278	.153	.047	.267	.148	.046	.256	.144	.045	.246	.139	.044	
3.0	.264	.141	.042	.259	.139	.042	.248	.135	.041	.239	.131	.040	.230	.127	.039	
4.0	.245	.127	.037	.240	.125	.037	.231	.122	.037	.222	.119	.036	.214	.116	.035	
5.0	.227	.116	.033	.222	.114	.033	.214	.112	.033	.207	.109	.032	.200	.107	.032	
6.0	.211	.106	.030	.207	.105	.030	.200	.102	.030	.193	.100	.029	.187	.098	.029	
7.0	.197	.097	.028	.193	.096	.027	.187	.094	.027	.181	.093	.027	.175	.091	.027	
8.0	.184	.090	.025	.181	.089	.025	.175	.087	.025	.170	.086	.025	.164	.084	.025	
9.0	.172	.083	.023	.170	.083	.023	.165	.081	.023	.160	.080	.023	.155	.079	.023	
10.0	.162	.078	.022	.160	.077	.022	.155	.076	.021	.151	.075	.021	.147	.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	.085	.101	.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	.041	.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	.135	.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	.117	.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:230.80V I:0.0306A P:6.4831W PF:0.9188 Freq:50.00Hz Lamp Flux:460.086x1 lm										
NAME: 136-180_4000K					TYPE:7W			WEIGHT:		
SPEC.:4000K					DIM.:			SERIAL No.:		
MFR.: Tronix Lighting					SUR.:0.037			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	24.7	26.2	25.0	26.4	26.7	25.2	26.7	25.5	26.9	27.1
3H	25.6	27.0	25.9	27.3	27.5	26.7	28.1	27.0	28.3	28.5
4H	25.8	27.1	26.1	27.4	27.6	27.2	28.5	27.5	28.8	29.0
6H	25.9	27.1	26.2	27.4	27.7	27.6	28.8	27.9	29.1	29.3
8H	25.9	27.1	26.3	27.4	27.7	27.6	28.8	28.0	29.1	29.4
12H	26.0	27.1	26.3	27.4	27.7	27.7	28.8	28.0	29.1	29.4
4H 2H	25.3	26.6	25.6	26.8	27.1	25.7	27.0	26.0	27.2	27.5
3H	26.3	27.5	26.7	27.8	28.1	27.2	28.4	27.6	28.7	29.0
4H	26.6	27.6	27.0	27.9	28.3	27.9	28.9	28.3	29.2	29.6
6H	26.8	27.7	27.1	28.0	28.4	28.3	29.3	28.7	29.6	30.0
8H	26.8	27.7	27.2	28.1	28.5	28.5	29.3	28.9	29.7	30.1
12H	26.9	27.7	27.3	28.1	28.5	28.5	29.3	29.0	29.7	30.1
8H 4H	26.8	27.6	27.2	28.0	28.4	28.0	28.8	28.4	29.2	29.6
6H	27.1	27.8	27.5	28.2	28.6	28.5	29.2	29.0	29.6	30.1
8H	27.2	27.8	27.7	28.3	28.7	28.7	29.4	29.2	29.8	30.2
12H	27.4	27.9	27.9	28.4	28.8	28.9	29.4	29.4	29.9	30.3
12H 4H	26.8	27.6	27.2	27.9	28.3	27.9	28.7	28.4	29.1	29.5
6H	27.1	27.7	27.6	28.2	28.6	28.5	29.2	29.0	29.6	30.0
8H	27.3	27.8	27.8	28.3	28.8	28.8	29.3	29.2	29.8	30.2
Variations with the observer position at spacings:										
S = 1.0H	+ 0.3 / - 0.3					+ 0.2 / - 0.2				
1.5H	+ 0.2 / - 0.4					+ 0.1 / - 0.3				
2.0H	+ 0.4 / - 0.4					+ 0.3 / - 0.4				

CIE Pub.117, 460.1 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -2.7)

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:230.80V I:0.0306A P:6.4831W PF:0.9188 Freq:50.00Hz Lamp Flux:460.086x1 lm		
NAME: 136-180_4000K	TYPE:7W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.037	Shielding Angle:

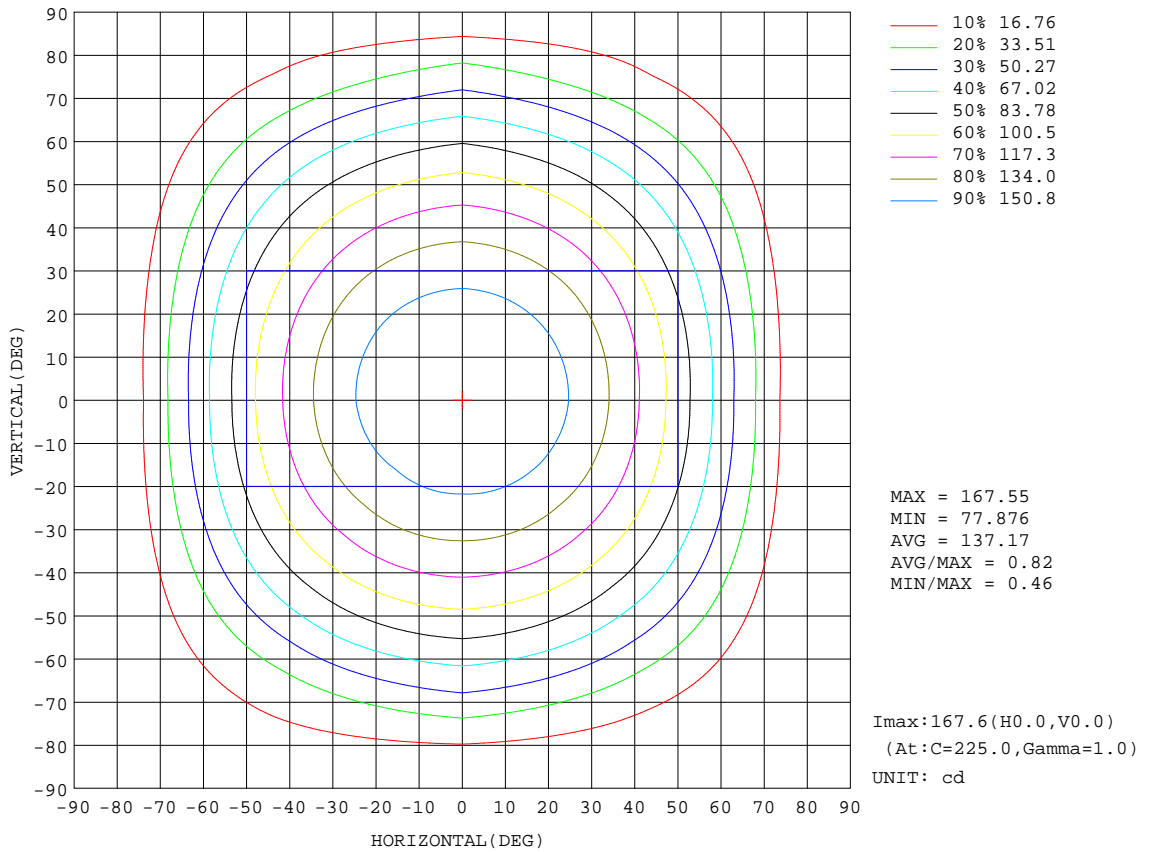
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	58	47	40	58	47	40	56	46	40	33
0.80	68	57	50	67	57	50	66	56	49	42
1.00	77	66	59	76	65	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	99	92	86	97	91	85	94	88	83	75
3.00	103	96	91	101	95	90	97	92	87	79
4.00	107	101	97	104	99	95	100	96	92	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:230.80V I:0.0306A P:6.4831W PF:0.9188 Freq:50.00Hz Lamp Flux:460.086x1 lm		
NAME: 136-180_4000K	TYPE:7W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.037	Shielding Angle:

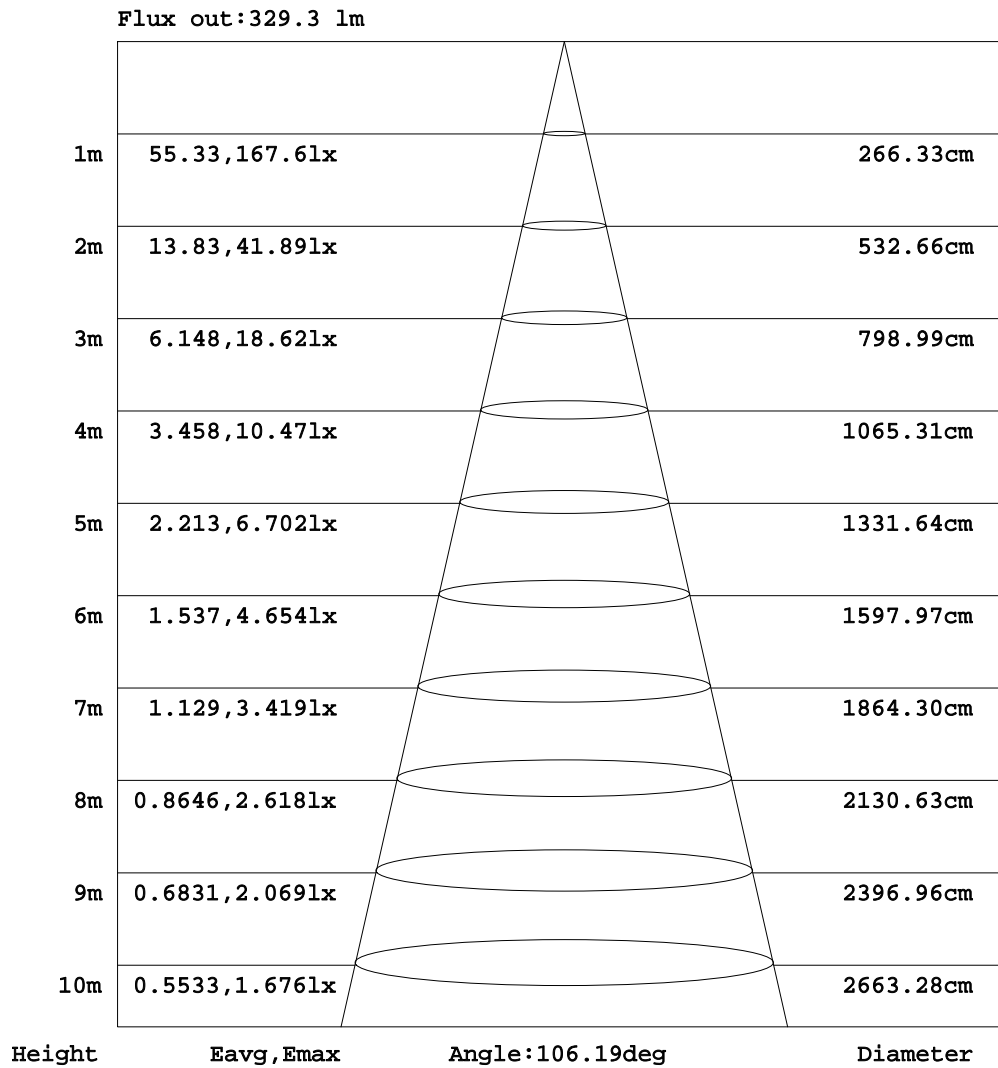


C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2020-01-12

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:230.80V I:0.0306A P:6.4831W PF:0.9188 Freq:50.00Hz Lamp Flux:460.086x1 lm		
NAME: 136-180_4000K	TYPE:7W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.037	Shielding Angle:



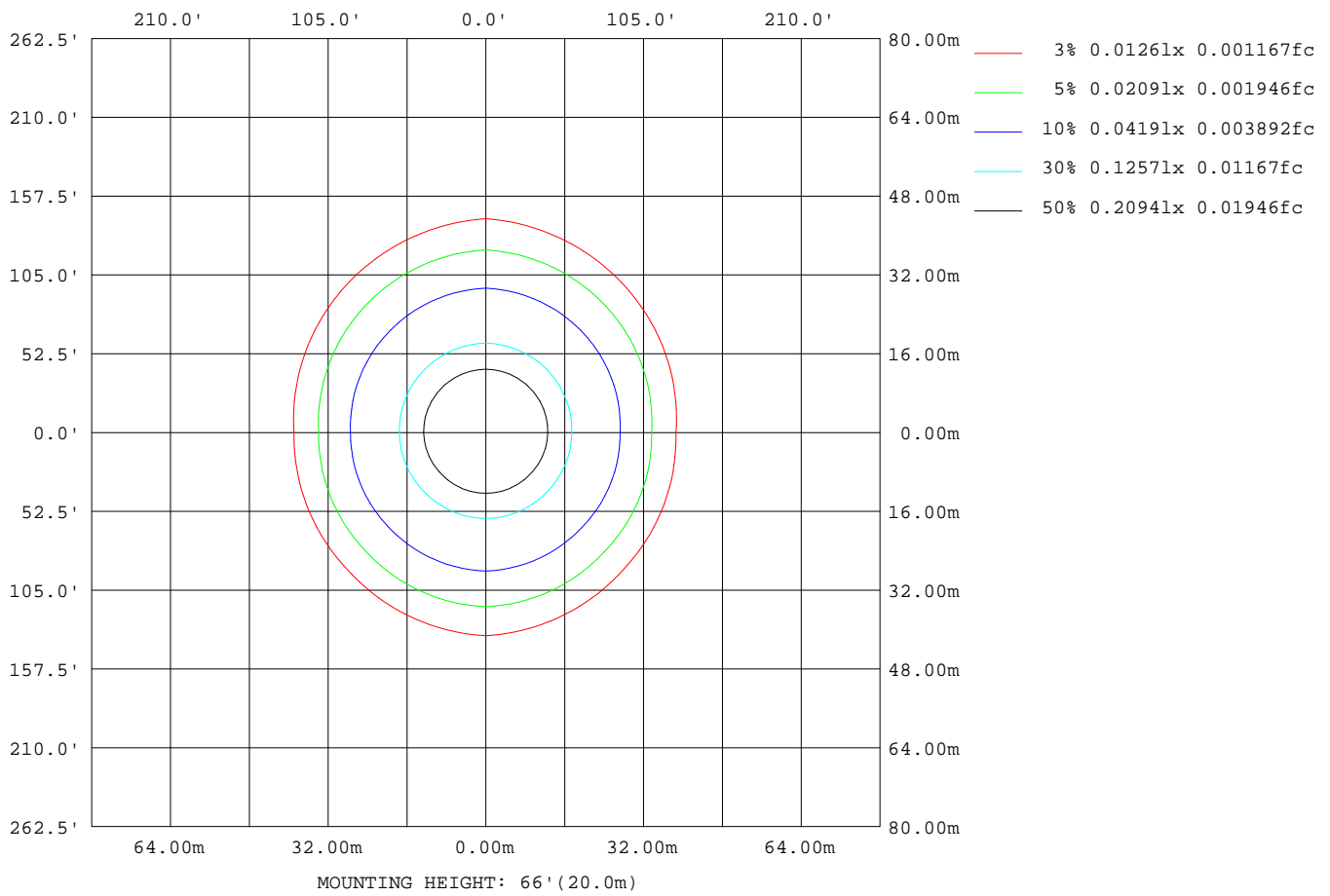
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 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:230.80V I:0.0306A P:6.4831W PF:0.9188 Freq:50.00Hz Lamp Flux:460.086x1 lm		
NAME: 136-180_4000K	TYPE:7W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.037	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:230.80V I:0.0306A P:6.4831W PF:0.9188 Freq:50.00Hz Lamp Flux:460.086x1 lm		
NAME: 136-180_4000K	TYPE:7W	WEIGHT:
SPEC.:4000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.037	Shielding Angle:

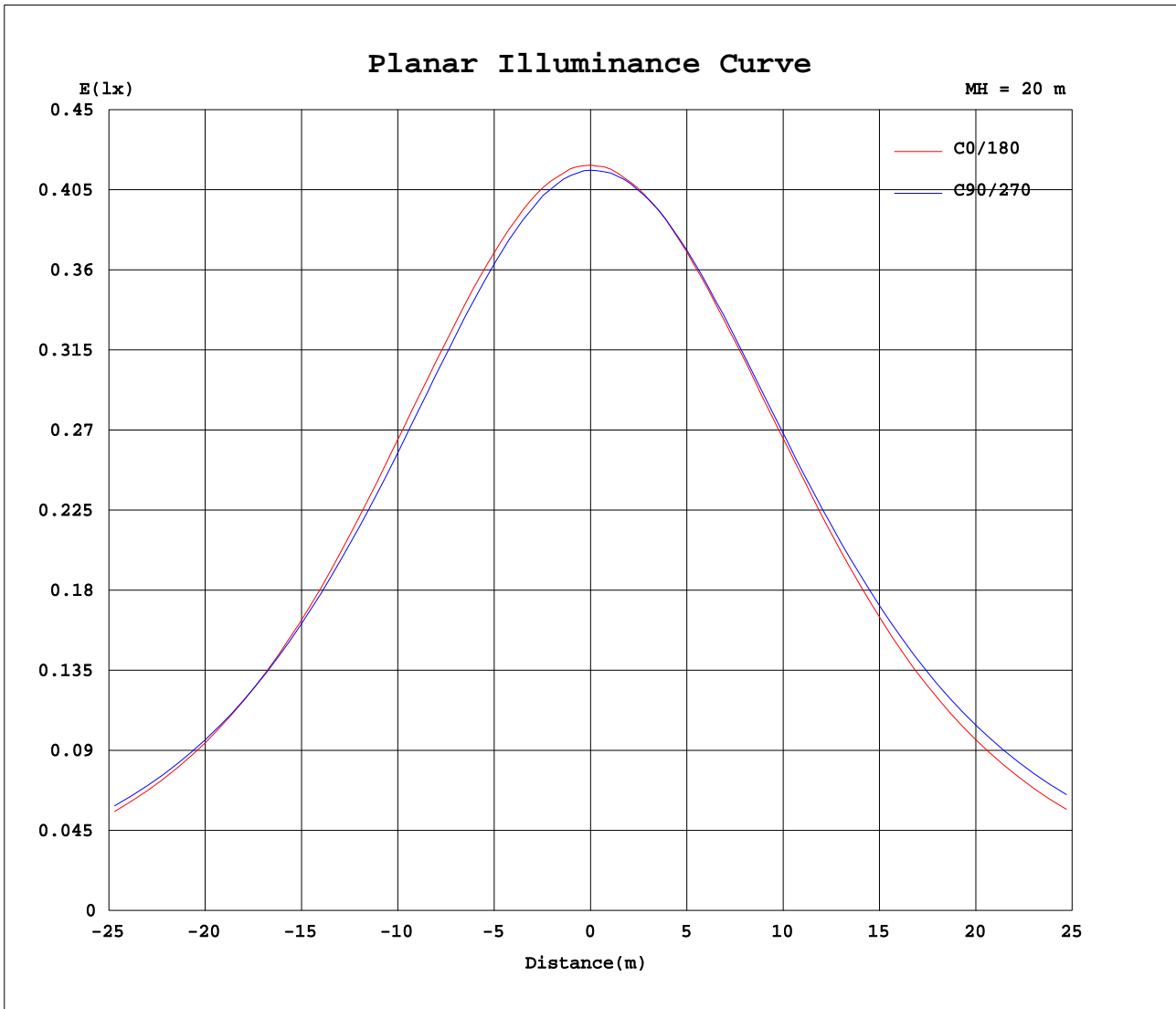
AvgL	cd/m2
L_0~180(65)av	25955
L_0~180(75)av	13533
L_0~180(85)av	14322
L_90~270(65)av	37777
L_90~270(75)av	34814
L_90~270(85)av	30040
L_45(65)av	31159
L_45(75)av	22634
L_45(85)av	24767

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:

