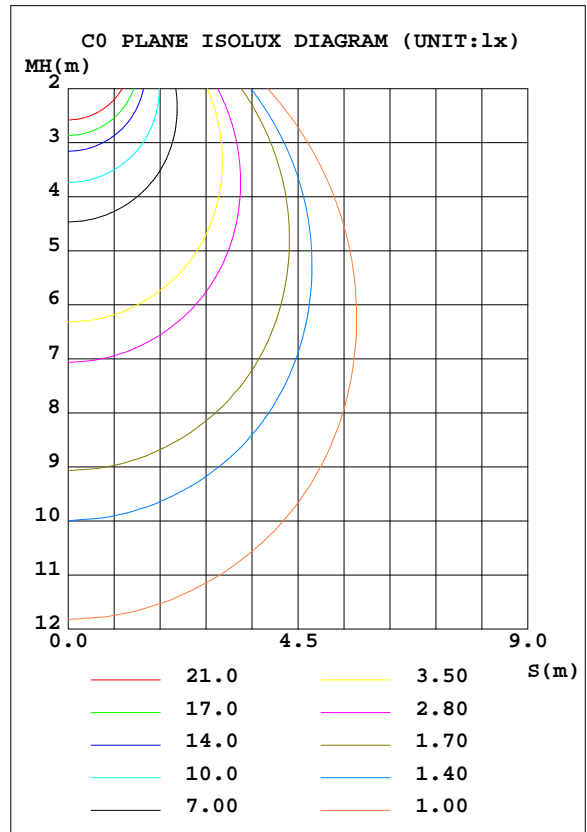
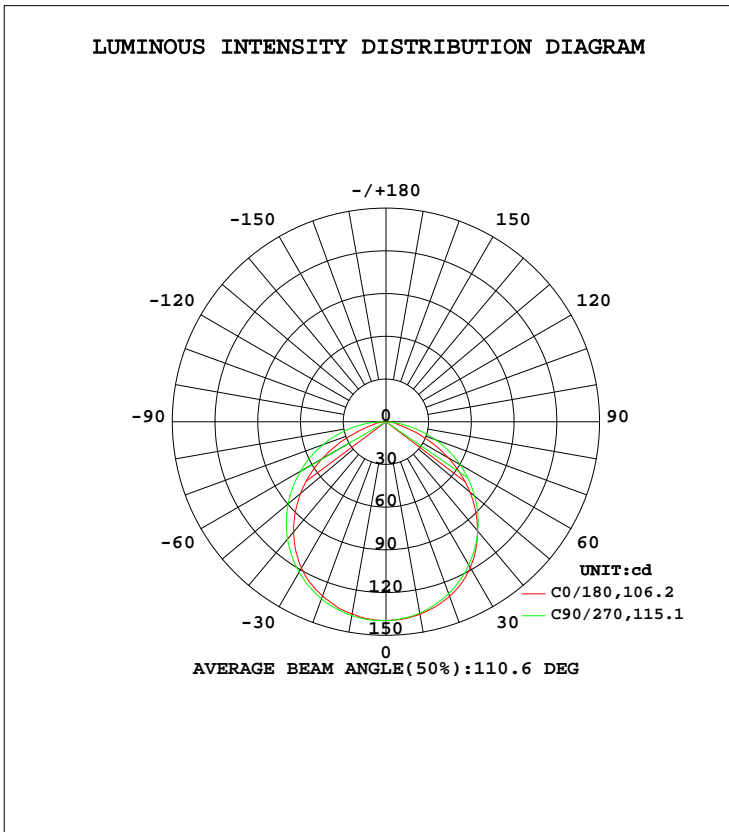


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.60V I:0.0317A P:6.7648W PF:0.9251 Freq:50.00Hz Lamp Flux:385.397x1 lm		
NAME: 136-180_3000K	TYPE:7W	WEIGHT:
SPEC.:3000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.037	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 56.97 lm/W			
MODEL	136-180_3000K	I _{max} (cd)	140.0	S/MH(C0/180)	1.26
NOMINAL POWER(W)	7	LOR(%)	100.0	S/MH(C90/270)	1.30
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	385.40	η UP, DN(C0-180)	0.0,48.2
NOMINAL FLUX(lm)	385.397	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:

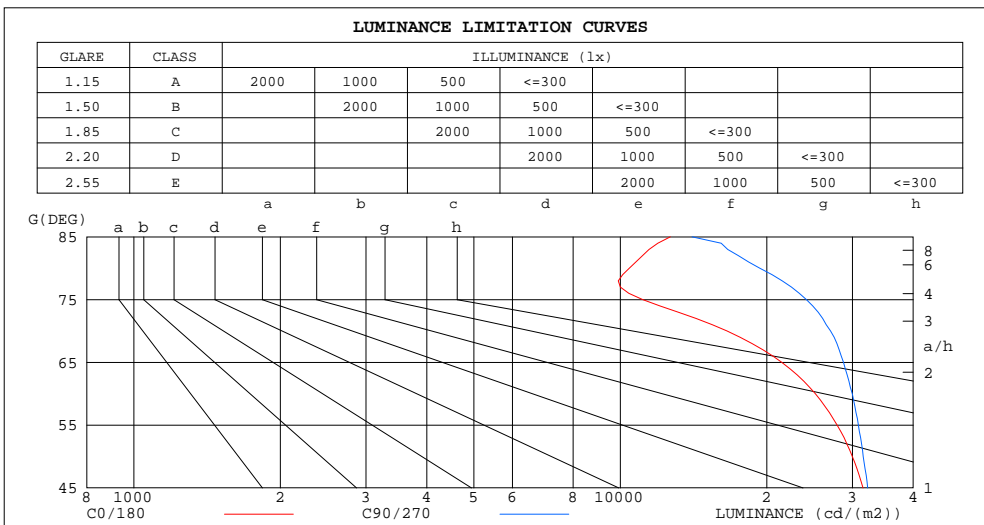
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	lum, lamp
10	137.4	136.6	136.4	136.7	137.1	138.1	138.1	137.9	0- 10	13.22	13.22	3.43,3.43
20	130.5	128.8	128.5	129.2	130.3	131.6	132.4	132.0	10- 20	37.95	51.17	13.3,13.3
30	118.4	116.4	116.1	116.8	118.7	120.6	121.9	120.8	20- 30	57.70	108.9	28.2,28.2
40	100.1	99.06	100.3	99.04	100.8	104.6	107.6	104.6	30- 40	69.36	178.2	46.2,46.2
50	77.08	77.69	81.21	78.49	78.36	84.32	89.74	83.98	40- 50	71.02	249.3	64.7,64.7
60	50.32	53.24	59.98	54.19	51.61	60.53	69.22	59.88	50- 60	62.22	311.5	80.8,80.8
70	22.66	27.70	37.01	28.00	22.59	34.58	46.94	34.05	60- 70	44.06	355.5	92.3,92.3
80	7.248	9.784	13.44	11.88	7.291	13.70	24.21	13.58	70- 80	22.14	377.7	98,98
90	2.040	3.453	2.377	4.046	1.955	4.466	2.327	3.964	80- 90	7.720	385.4	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:230.60V I:0.0317A P:6.7648W PF:0.9251 Freq:50.00Hz Lamp Flux:385.397x1 lm		
NAME: 136-180_3000K	TYPE:7W	WEIGHT:
SPEC.:3000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.037	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	12670	14047
80	10437	19347
75	11108	24125
70	16565	27047
65	21458	28763
60	25167	29982
55	27906	30851
50	29983	31577
45	31534	32249

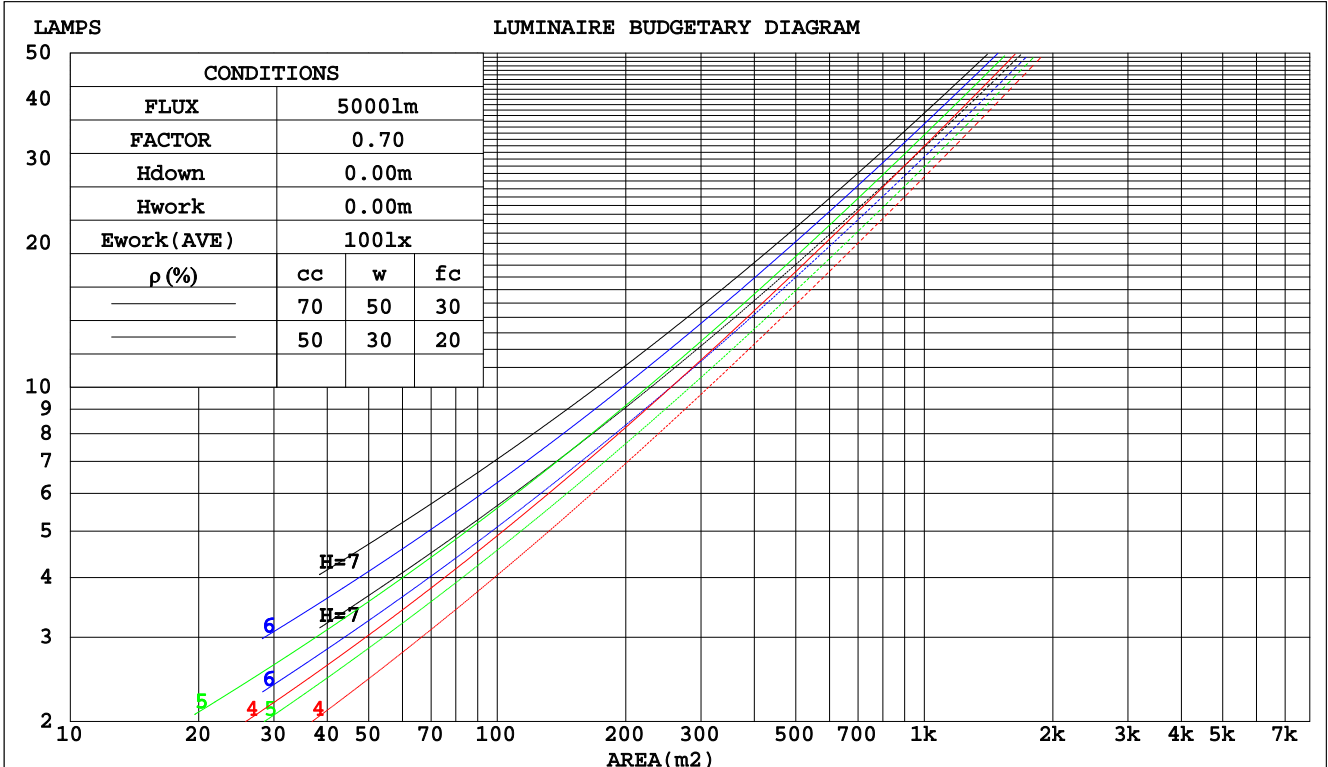
C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2020-01-12

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:230.60V I:0.0317A P:6.7648W PF:0.9251 Freq:50.00Hz Lamp Flux:385.397x1 lm		
NAME: 136-180_3000K	TYPE:7W	WEIGHT:
SPEC.:3000K	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	.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	.67	.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:230.60V I:0.0317A P:6.7648W PF:0.9251 Freq:50.00Hz Lamp Flux:385.397x1 lm		
NAME: 136-180_3000K	TYPE:7W	WEIGHT:
SPEC.:3000K	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	.270	.156	.050	.259	.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	.249	.135	.041	.239	.131	.040	.230	.127	.039	
4.0	.245	.127	.037	.240	.126	.037	.231	.122	.037	.222	.119	.036	.214	.117	.035	
5.0	.227	.116	.033	.223	.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	.165	.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:230.60V I:0.0317A P:6.7648W PF:0.9251 Freq:50.00Hz Lamp Flux:385.397x1 lm										
NAME: 136-180_3000K					TYPE:7W			WEIGHT:		
SPEC.:3000K					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	24.1	25.6	24.4	25.8	26.0	24.6	26.1	24.9	26.3	26.5
3H	25.0	26.4	25.3	26.6	26.9	26.1	27.4	26.4	27.7	27.9
4H	25.2	26.5	25.5	26.8	27.0	26.6	27.9	26.9	28.2	28.4
6H	25.3	26.5	25.6	26.8	27.1	26.9	28.2	27.3	28.4	28.7
8H	25.3	26.5	25.7	26.8	27.1	27.0	28.2	27.4	28.5	28.8
12H	25.4	26.5	25.7	26.8	27.1	27.1	28.2	27.4	28.5	28.8
4H 2H	24.6	26.0	25.0	26.2	26.5	25.0	26.4	25.4	26.6	26.9
3H	25.7	26.8	26.0	27.1	27.4	26.6	27.8	27.0	28.1	28.4
4H	26.0	27.0	26.3	27.3	27.7	27.3	28.3	27.6	28.6	29.0
6H	26.1	27.1	26.5	27.4	27.8	27.7	28.6	28.1	29.0	29.4
8H	26.2	27.1	26.6	27.4	27.8	27.8	28.7	28.3	29.1	29.5
12H	26.3	27.1	26.7	27.5	27.9	27.9	28.7	28.4	29.1	29.5
8H 4H	26.1	27.0	26.5	27.4	27.8	27.3	28.2	27.8	28.6	29.0
6H	26.4	27.1	26.9	27.6	28.0	27.9	28.6	28.3	29.0	29.4
8H	26.6	27.2	27.0	27.7	28.1	28.1	28.7	28.6	29.2	29.6
12H	26.8	27.3	27.2	27.8	28.2	28.3	28.8	28.7	29.3	29.7
12H 4H	26.1	26.9	26.6	27.3	27.7	27.3	28.1	27.7	28.5	28.9
6H	26.5	27.1	26.9	27.5	28.0	27.9	28.5	28.4	29.0	29.4
8H	26.7	27.2	27.2	27.7	28.2	28.1	28.7	28.6	29.1	29.6
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, 385.4 lm Total Lamp Luminous Flux Corrected (8log(F/F0) = -3.3)

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:230.60V I:0.0317A P:6.7648W PF:0.9251 Freq:50.00Hz Lamp Flux:385.397x1 lm		
NAME: 136-180_3000K	TYPE:7W	WEIGHT:
SPEC.:3000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.037	Shielding Angle:

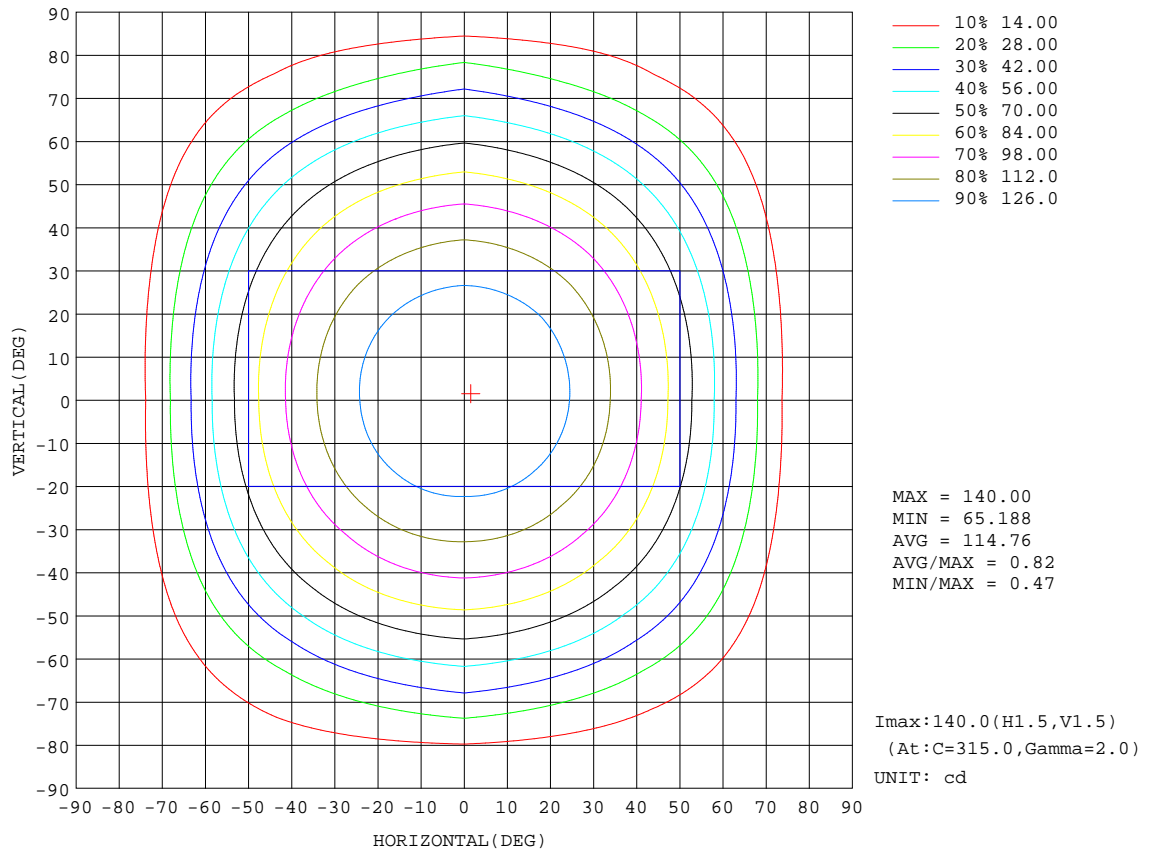
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	58	47	40	58	47	40	56	46	40	33
0.80	68	57	50	67	57	50	66	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:230.60V I:0.0317A P:6.7648W PF:0.9251 Freq:50.00Hz Lamp Flux:385.397x1 lm		
NAME: 136-180_3000K	TYPE:7W	WEIGHT:
SPEC.:3000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.037	Shielding Angle:

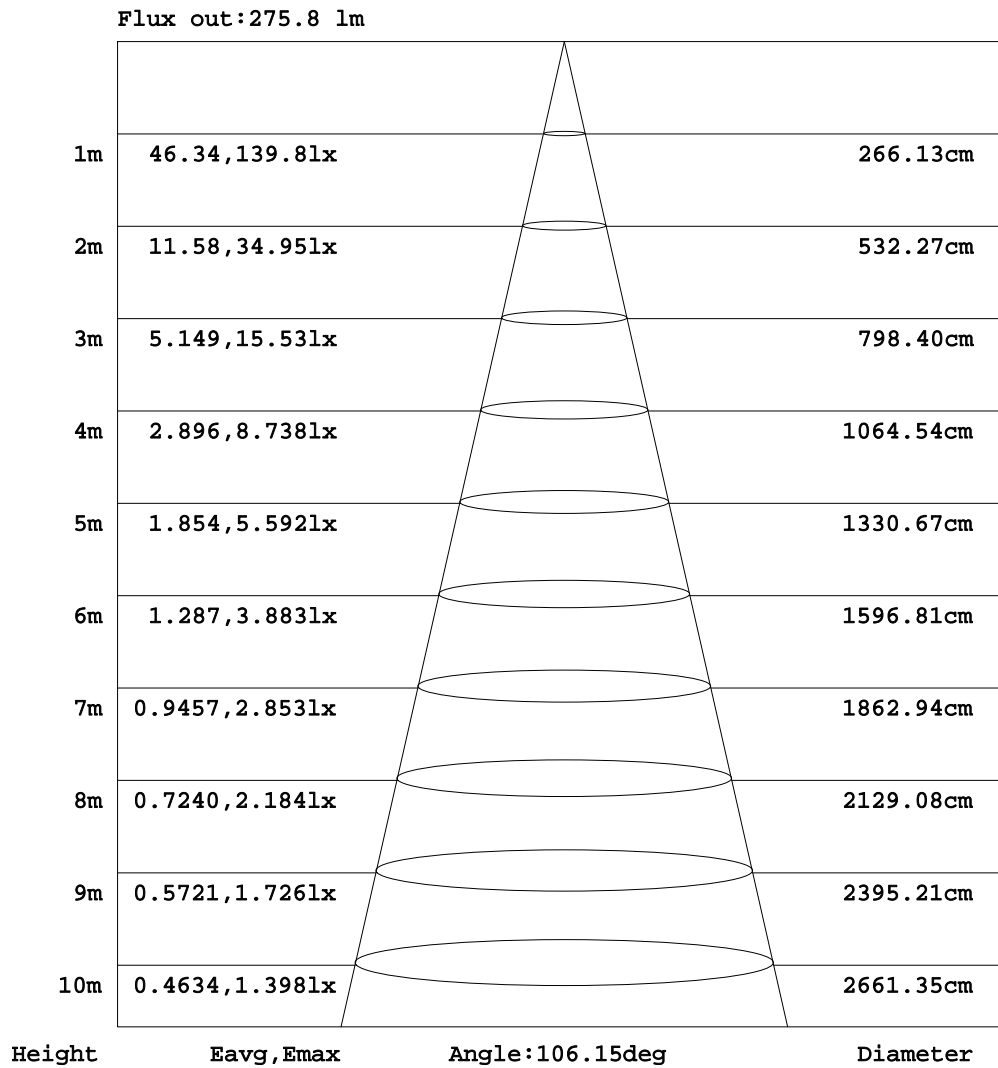


C Range: 0 - 360DEG
 C Interval: 45.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
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γ Range: 0 - 90DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000H_V1 SYSTEM V2.0.404.7
 Humidity:65.0%
 Test Distance:9.900m [K=1.0000]
 Remarks:

AAI Figure

Test:U:230.60V I:0.0317A P:6.7648W PF:0.9251 Freq:50.00Hz Lamp Flux:385.397x1 lm		
NAME: 136-180_3000K	TYPE:7W	WEIGHT:
SPEC.:3000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.037	Shielding Angle:



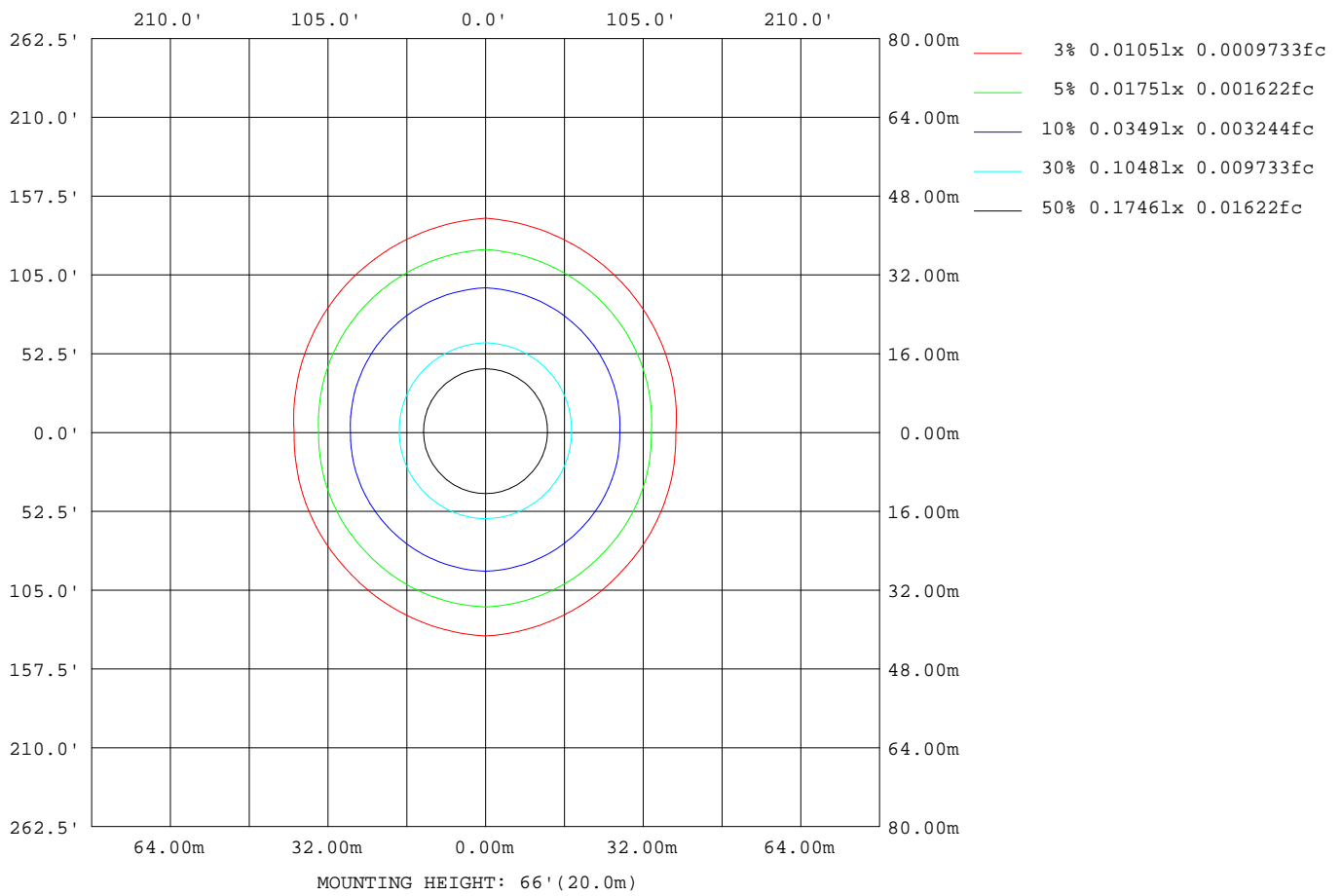
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:230.60V I:0.0317A P:6.7648W PF:0.9251 Freq:50.00Hz Lamp Flux:385.397x1 lm		
NAME: 136-180_3000K	TYPE:7W	WEIGHT:
SPEC.:3000K	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:230.60V I:0.0317A P:6.7648W PF:0.9251 Freq:50.00Hz Lamp Flux:385.397x1 lm		
NAME: 136-180_3000K	TYPE:7W	WEIGHT:
SPEC.:3000K	DIM.:	SERIAL No.:
MFR.: Tronix Lighting	SUR.:0.037	Shielding Angle:

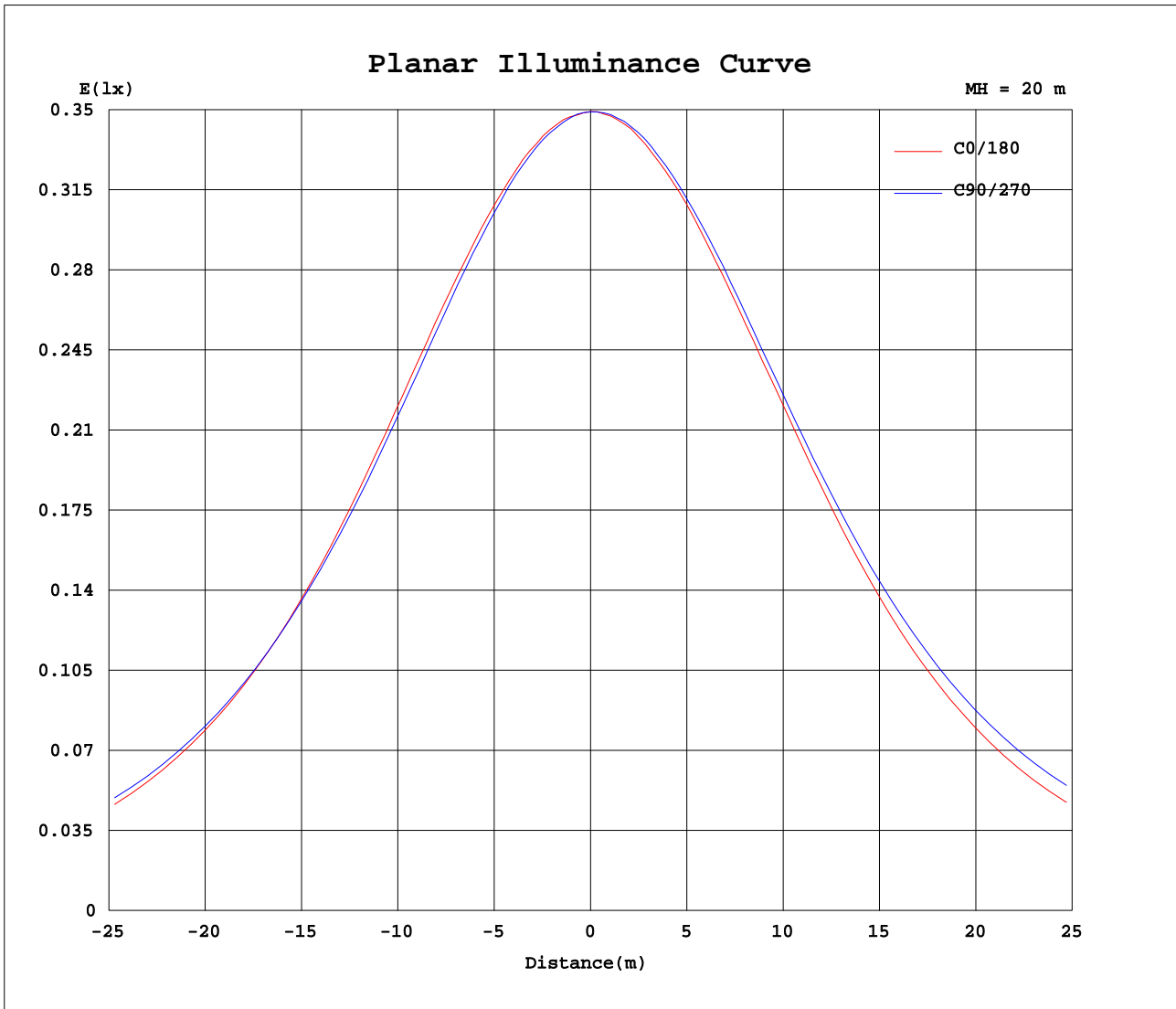
AvgL	cd/m2
L_0~180(65)av	21704
L_0~180(75)av	11388
L_0~180(85)av	12156
L_90~270(65)av	31622
L_90~270(75)av	29207
L_90~270(85)av	25378
L_45(65)av	26068
L_45(75)av	18985
L_45(85)av	20961

Standard: GB/T 29293-2012

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

