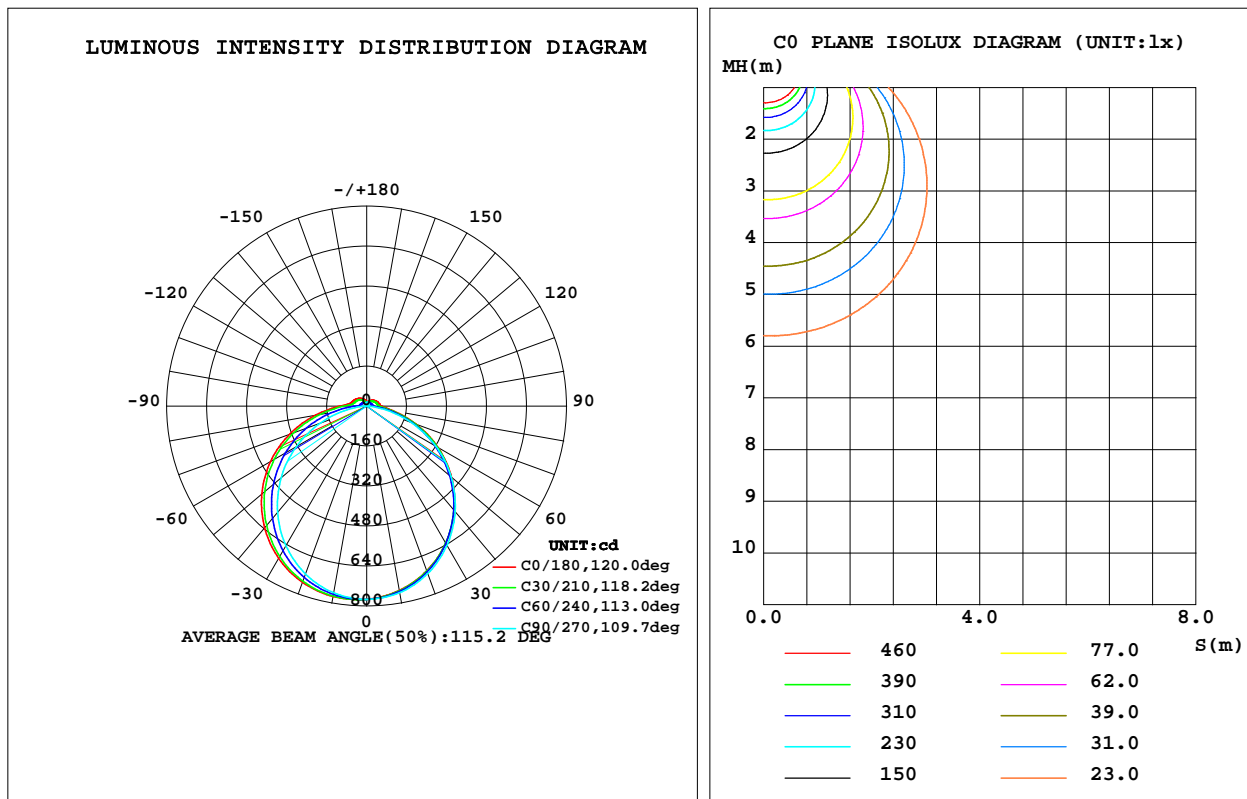


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:230.4V I:0.1030A P:23.00W PF:0.9630 Lamp Flux:2515.17x1 lm		
NAME: 136-305_25W_4000K	TYPE:25W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.: Tronix lighting	SUR.:0.0708	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 109.36 lm/W			
MODEL	136-305_25W_4000K	I _{max} (cd)	775.9	S/MH(C0/180)	1.35
NOMINAL POWER(W)	25	LOR(%)	100.0	S/MH(C90/270)	1.24
RATED VOLTAGE(V)	230	TOTAL FLUX(lm)	2515.2	η UP, DN(C0-180)	3.8, 47.6
NOMINAL FLUX(lm)	2515.17	CIE CLASS	DIRECT	η UP, DN(C180-360)	3.4, 45.2
LAMPS INSIDE	1	η up(%)	7.2	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	230.4	η down(%)	92.8	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-06-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.600m [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	773.7	768.5	758.9	752.7	748.9	752.2	758.2	768.2	0- 10	73.19	73.19	2.91,2.91
20	750.9	738.2	715.4	705.8	701.8	704.3	713.6	736.5	10- 20	209.9	283.1	11.3,11.3
30	704.1	682.6	646.0	635.6	633.1	633.3	643.0	679.6	20- 30	319.0	602.1	23.9,23.9
40	635.4	604.8	555.3	545.6	546.5	542.5	551.2	601.2	30- 40	386.3	988.4	39.3,39.3
50	548.2	510.0	447.3	440.6	444.3	436.9	441.7	505.8	40- 50	404.6	1393	55.4,55.4
60	444.4	401.4	325.1	324.3	328.8	320.2	318.4	396.9	50- 60	372.6	1766	70.2,70.2
70	327.8	282.5	195.4	203.5	208.8	199.1	185.7	278.1	60- 70	295.2	2061	81.9,81.9
80	206.1	161.1	70.42	93.47	106.8	89.95	60.60	156.2	70- 80	186.9	2248	89.4,89.4
90	107.9	68.27	2.083	39.58	59.86	38.60	1.076	64.78	80- 90	85.98	2334	92.8,92.8
100	67.73	42.39	2.018	33.13	51.99	32.90	2.260	39.40	90-100	43.73	2377	94.5,94.5
110	60.23	38.37	4.394	29.91	47.35	30.02	4.536	37.37	100-110	35.45	2413	95.9,95.9
120	54.32	34.62	6.363	26.86	42.10	27.20	6.615	34.51	110-120	30.82	2444	97.2,97.2
130	47.71	30.18	7.932	23.98	36.37	24.36	8.234	30.33	120-130	25.21	2469	98.2,98.2
140	40.87	24.78	9.268	21.08	30.49	21.29	9.594	24.11	130-140	19.06	2488	98.9,98.9
150	33.98	19.55	10.28	18.19	24.59	18.15	10.63	20.20	140-150	13.25	2501	99.4,99.4
160	27.16	15.61	11.72	15.69	18.67	15.61	11.91	16.12	150-160	8.248	2509	99.8,99.8
170	20.49	13.72	13.59	14.24	14.21	14.09	13.80	14.08	160-170	4.363	2514	99.9,99.9
180	13.02	13.54	14.94	13.89	12.97	13.56	14.91	13.89	170-180	1.351	2515	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

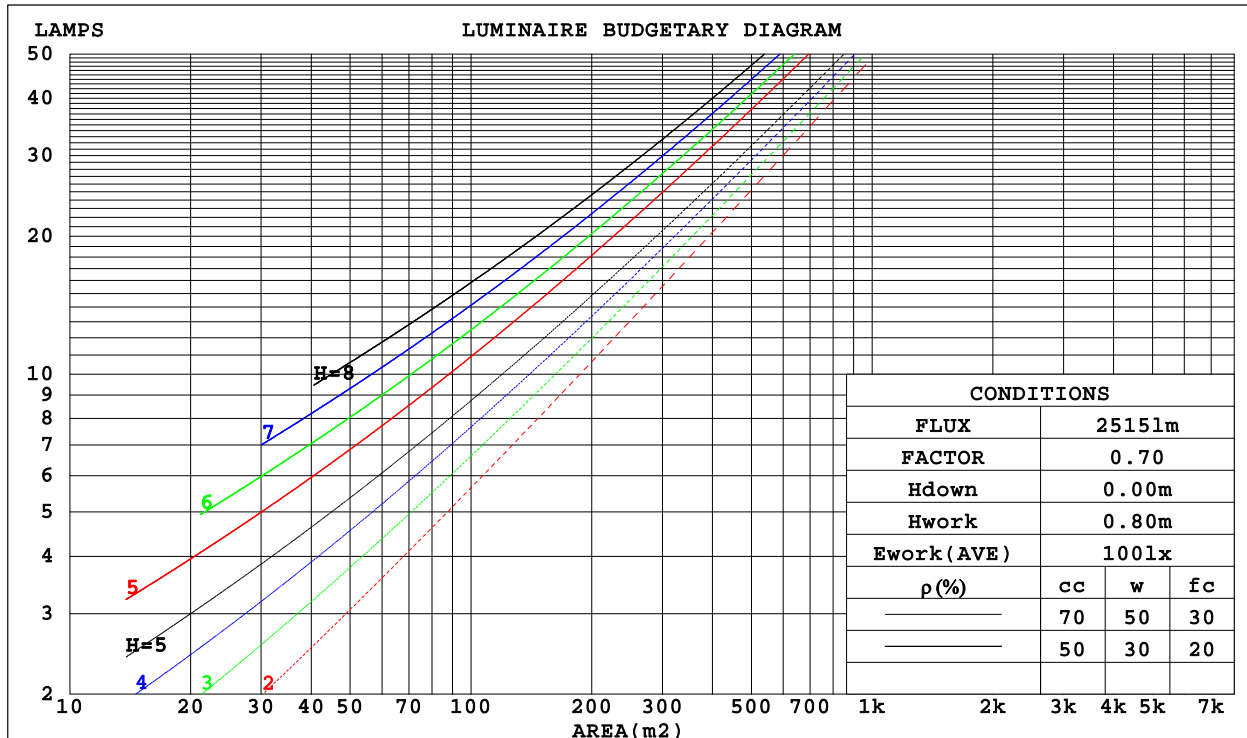
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-06-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.600m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:230.4V I:0.1030A P:23.00W PF:0.9630 Lamp Flux:2515.17x1 lm		
NAME: 136-305_25W_4000K	TYPE:25W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.: Tronix lighting	SUR.:0.0708	PROTECTION 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	1.17	1.17	1.17	1.14	1.14	1.14	1.07	1.07	1.07	1.01	1.01	1.01	.95	.95	.95	.93
1.0	1.01	.97	.92	.98	.94	.90	.93	.89	.86	.87	.85	.82	.83	.80	.78	.76
2.0	.88	.81	.75	.85	.79	.73	.80	.75	.70	.76	.72	.68	.72	.68	.65	.62
3.0	.77	.68	.62	.75	.67	.61	.71	.64	.59	.67	.61	.57	.63	.59	.55	.52
4.0	.68	.59	.52	.66	.58	.51	.63	.55	.50	.59	.53	.48	.56	.51	.47	.44
5.0	.60	.51	.45	.59	.50	.44	.56	.48	.43	.53	.47	.42	.51	.45	.41	.38
6.0	.54	.45	.39	.53	.44	.38	.50	.43	.37	.48	.41	.36	.46	.40	.36	.33
7.0	.49	.40	.34	.48	.40	.34	.46	.38	.33	.44	.37	.32	.42	.36	.32	.29
8.0	.45	.36	.30	.44	.36	.30	.42	.35	.29	.40	.34	.29	.38	.33	.28	.26
9.0	.41	.33	.27	.40	.32	.27	.38	.31	.26	.37	.30	.26	.35	.30	.25	.23
10.0	.38	.30	.25	.37	.29	.24	.36	.29	.24	.34	.28	.23	.33	.27	.23	.21



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-06-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.600m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:230.4V I:0.1030A P:23.00W PF:0.9630 Lamp Flux:2515.17x1 lm		
NAME: 136-305_25W_4000K	TYPE:25W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.: Tronix lighting	SUR.:0.0708	PROTECTION 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	.329	.187	.059	.320	.182	.058	.302	.173	.055	.286	.165	.053	.272	.157	.051	
2.0	.302	.165	.051	.293	.162	.050	.278	.154	.048	.263	.148	.046	.250	.141	.045	
3.0	.276	.147	.044	.268	.144	.043	.254	.138	.042	.241	.132	.041	.229	.127	.039	
4.0	.253	.131	.039	.246	.129	.038	.234	.124	.037	.222	.119	.036	.211	.115	.035	
5.0	.233	.118	.034	.227	.116	.034	.215	.112	.033	.205	.108	.032	.195	.104	.031	
6.0	.215	.108	.031	.210	.106	.030	.199	.102	.030	.190	.099	.029	.181	.095	.028	
7.0	.200	.099	.028	.195	.097	.028	.186	.094	.027	.177	.091	.026	.169	.088	.026	
8.0	.186	.091	.026	.182	.089	.025	.173	.087	.025	.165	.084	.024	.158	.081	.024	
9.0	.174	.084	.024	.170	.083	.023	.162	.080	.023	.155	.078	.022	.149	.075	.022	
10.0	.163	.078	.022	.160	.077	.022	.153	.075	.021	.146	.073	.021	.140	.070	.020	

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	.245	.245	.245	.210	.210	.210	.143	.143	.143	.082	.082	.082	.026	.026	.026	
1.0	.237	.211	.188	.203	.181	.162	.139	.125	.112	.080	.072	.065	.026	.023	.021	
2.0	.229	.188	.153	.196	.162	.132	.135	.112	.092	.078	.065	.054	.025	.021	.018	
3.0	.222	.170	.130	.190	.147	.112	.130	.102	.079	.075	.060	.046	.024	.019	.015	
4.0	.214	.157	.114	.184	.136	.099	.126	.095	.070	.073	.056	.041	.024	.018	.014	
5.0	.207	.147	.103	.177	.127	.090	.122	.089	.064	.071	.052	.038	.023	.017	.012	
6.0	.199	.139	.096	.171	.120	.083	.118	.084	.059	.069	.050	.035	.022	.016	.012	
7.0	.193	.132	.090	.166	.115	.078	.114	.080	.056	.066	.047	.033	.021	.016	.011	
8.0	.186	.127	.086	.160	.110	.075	.111	.077	.053	.064	.045	.032	.021	.015	.010	
9.0	.180	.122	.082	.155	.106	.072	.107	.074	.051	.063	.044	.030	.020	.014	.010	
10.0	.174	.117	.080	.150	.102	.069	.104	.072	.049	.061	.042	.029	.020	.014	.010	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-06-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.600m [K=1.0000]
 Remarks:

Uncorrected UGR Table

Test:U:230.4V I:0.1030A P:23.00W PF:0.9630 Lamp Flux:2515.17x1 lm												
NAME: 136-305_25W_4000K					TYPE:25W			WEIGHT:				
DIM.:					SPEC.:4000K			SERIAL No.:1				
MFR.: Tronix lighting					SUR.:0.0708			PROTECTION 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	2H	21.7	23.1	22.1	23.5	23.8	20.5	22.0	20.9	22.3	22.6	
	3H	23.7	25.0	24.1	25.4	25.8	22.0	23.3	22.4	23.7	24.1	
	4H	24.7	26.0	25.1	26.3	26.8	22.5	23.8	22.9	24.2	24.6	
	6H	25.7	26.8	26.1	27.2	27.7	22.9	24.1	23.3	24.5	24.9	
	8H	26.1	27.3	26.6	27.7	28.1	22.9	24.1	23.4	24.5	24.9	
	12H	26.6	27.7	27.1	28.1	28.6	22.9	24.1	23.4	24.5	24.9	
	4H	2H	22.3	23.5	22.7	23.9	24.3	21.4	22.7	21.8	23.0	23.4
		3H	24.5	25.6	25.0	26.0	26.5	23.1	24.2	23.5	24.6	25.1
		4H	25.7	26.7	26.1	27.1	27.6	23.8	24.8	24.3	25.2	25.7
		6H	26.8	27.7	27.3	28.2	28.7	24.3	25.2	24.8	25.7	26.2
		8H	27.4	28.2	27.9	28.7	29.2	24.4	25.3	24.9	25.8	26.3
		12H	28.0	28.7	28.5	29.2	29.8	24.5	25.3	25.0	25.8	26.3
	8H	4H	26.0	26.8	26.5	27.3	27.8	24.4	25.2	24.9	25.7	26.2
		6H	27.3	28.0	27.9	28.6	29.1	25.1	25.8	25.7	26.3	26.9
		8H	28.1	28.7	28.6	29.2	29.8	25.4	26.0	26.0	26.6	27.2
		12H	28.9	29.4	29.4	30.0	30.6	25.6	26.1	26.2	26.7	27.3
	12H	4H	26.0	26.7	26.5	27.2	27.8	24.5	25.3	25.0	25.8	26.3
		6H	27.4	28.0	28.0	28.6	29.2	25.4	26.0	25.9	26.5	27.1
		8H	28.2	28.7	28.8	29.3	29.9	25.7	26.3	26.3	26.8	27.5
Variations with the observer position at spacings:												
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.2						
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.4						
2.0H	+ 0.2 / - 0.3					+ 0.2 / - 0.5						

CIE Pub.117 Corrected 2515 lm Total Lamp Luminous Flux.(8log(F/F0) = 3.2)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-06-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.600m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:230.4V I:0.1030A P:23.00W PF:0.9630 Lamp Flux:2515.17x1 lm		
NAME: 136-305_25W_4000K	TYPE:25W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.: Tronix lighting	SUR.:0.0708	PROTECTION ANGLE:

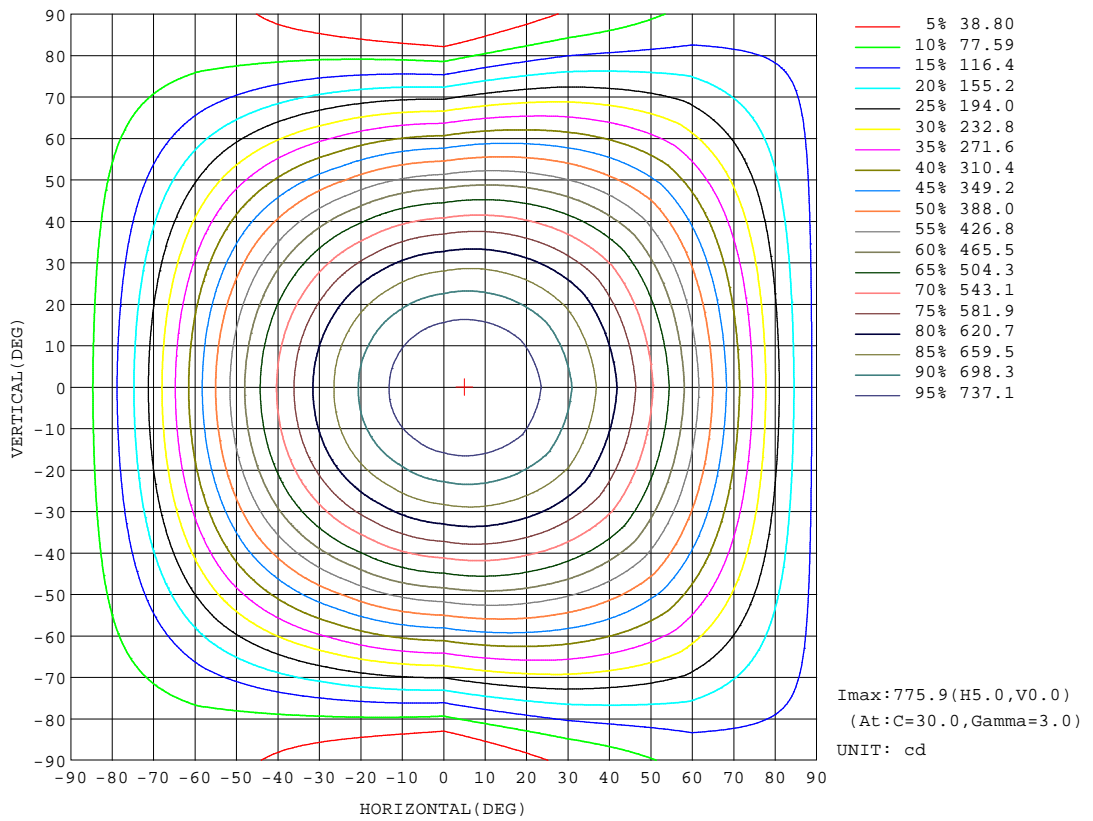
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	54	42	35	53	42	35	52	41	35	28
0.80	64	52	44	63	51	44	60	50	44	36
1.00	72	61	53	71	60	53	68	61	52	44
1.25	79	68	61	77	67	60	74	65	59	51
1.50	84	74	66	82	73	66	78	70	64	55
2.00	91	82	75	89	80	74	85	77	72	62
2.50	95	87	80	93	85	79	88	82	76	66
3.00	99	91	85	96	89	84	91	85	81	70
4.00	103	97	91	100	94	90	95	90	86	75
5.00	106	100	96	103	98	93	97	93	89	78
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004			Suspended				SHRNOM = 1.25			

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-06-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.600m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:230.4V I:0.1030A P:23.00W PF:0.9630 Lamp Flux:2515.17x1 lm		
NAME: 136-305_25W_4000K	TYPE:25W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.: Tronix lighting	SUR.:0.0708	PROTECTION ANGLE:



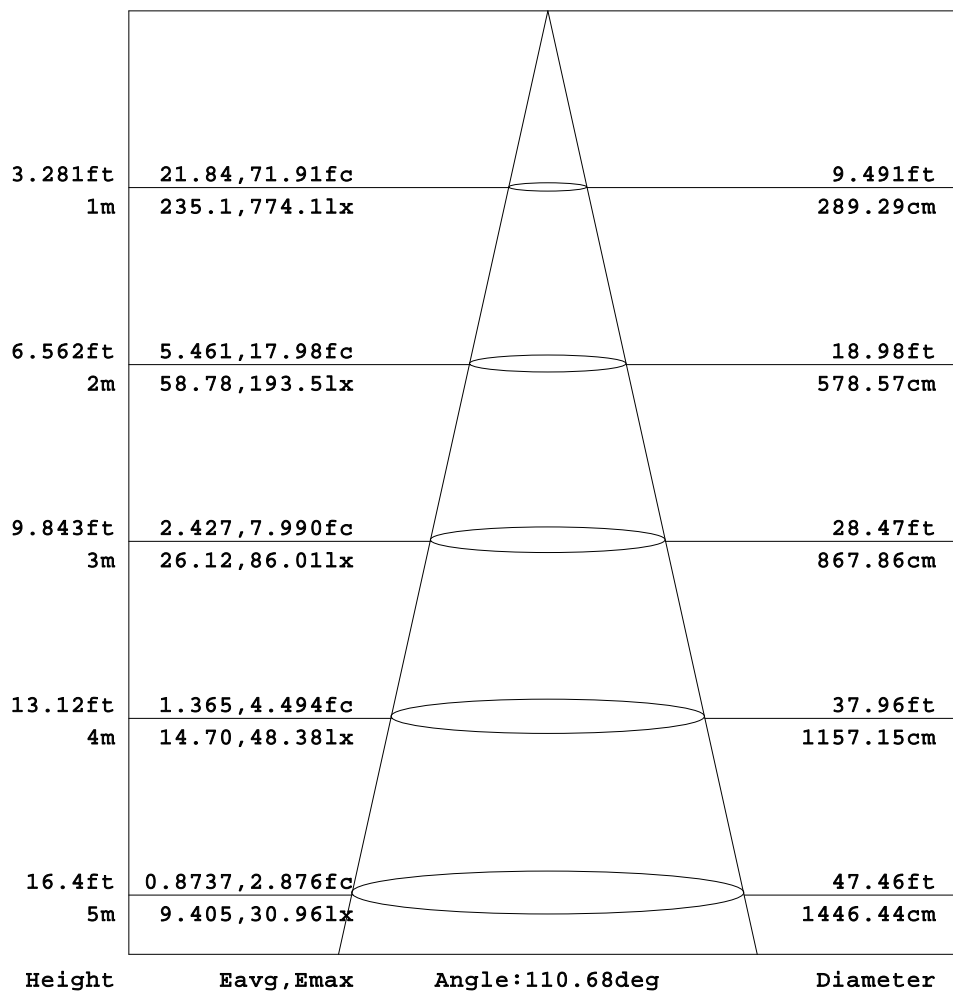
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-06-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.600m [K=1.0000]
 Remarks:

AAI Figure

Test:U:230.4V I:0.1030A P:23.00W PF:0.9630 Lamp Flux:2515.17x1 lm		
NAME: 136-305_25W_4000K	TYPE:25W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.: Tronix lighting	SUR.:0.0708	PROTECTION ANGLE:

Flux out:1624 lm



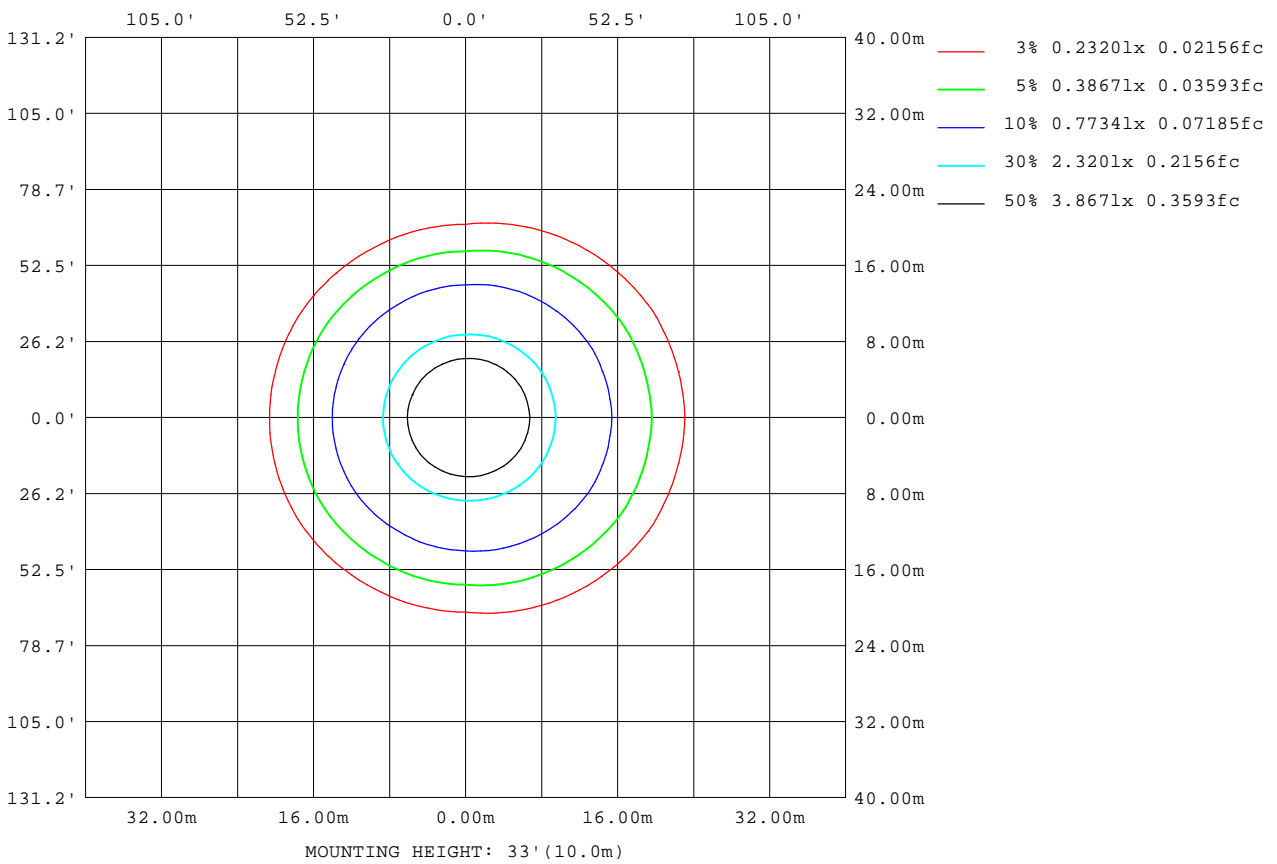
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2018-06-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity: 65.0%
 Test Distance: 9.600m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

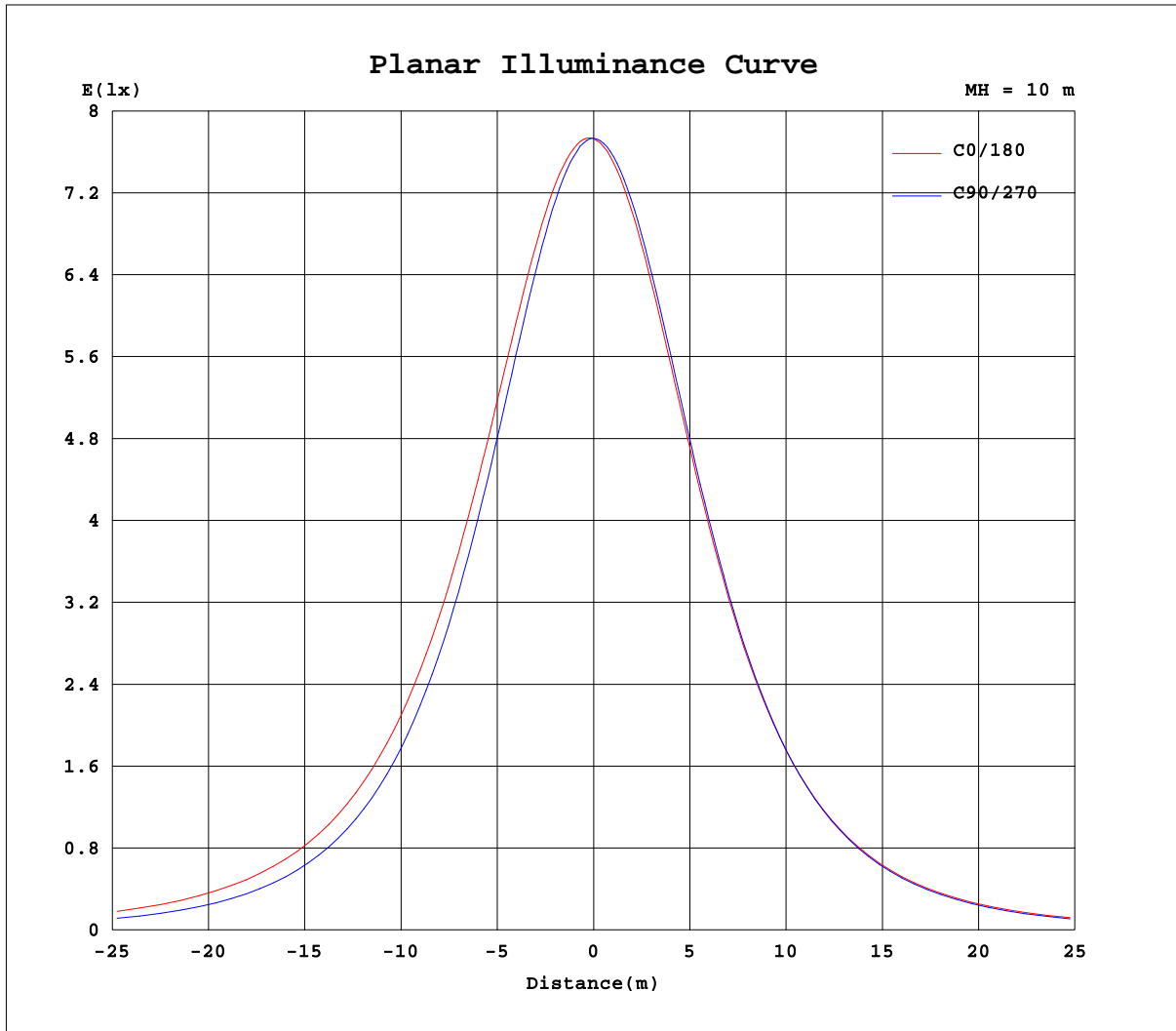
Test:U:230.4V I:0.1030A P:23.00W PF:0.9630 Lamp Flux:2515.17x1 lm		
NAME: 136-305_25W_4000K	TYPE:25W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.: Tronix lighting	SUR.:0.0708	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-06-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.600m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: DAMIN
 Test Date: 2018-06-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity: 65.0%
 Test Distance: 9.600m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:230.4V I:0.1030A P:23.00W PF:0.9630 Lamp Flux:2515.17x1 lm		
NAME: 136-305_25W_4000K	TYPE:25W	WEIGHT:
DIM.:	SPEC.:4000K	SERIAL No.:1
MFR.: Tronix lighting	SUR.:0.0708	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	773	773	773	773	773	773	773	773	773	773	773	773						
5	776	776	772	769	767	765	764	765	767	770	773	775						
10	774	772	765	759	754	751	749	751	754	758	765	771						
15	765	763	751	741	734	730	729	730	733	740	750	761						
20	751	746	730	715	707	704	702	703	706	714	729	744						
25	731	724	703	684	675	672	670	670	673	681	701	721						
30	704	696	669	646	636	635	633	632	634	643	667	692						
35	672	662	630	603	592	593	592	590	590	600	628	658						
40	635	623	587	555	544	547	546	543	542	551	584	619						
45	594	580	539	503	493	497	497	493	489	498	535	575						
50	548	533	487	447	437	444	444	440	433	442	483	528						
55	498	482	432	388	379	388	389	384	374	382	428	477						
60	444	427	375	325	320	329	329	326	314	318	371	423						
65	388	369	317	261	259	269	269	265	254	253	311	365						
70	328	309	256	195	198	209	209	205	193	186	251	305						
75	267	248	195	131	139	151	153	147	134	120	190	244						
80	206	187	135	70.4	85.0	102	107	98.4	81.4	60.6	130	182						
85	150	132	82.4	22.5	45.3	68.5	76.0	66.2	43.3	16.3	77.3	128						
90	108	90.6	45.9	2.08	27.6	51.6	59.9	50.5	26.7	1.08	42.0	87.6						
95	81.0	66.3	31.3	1.15	23.8	46.1	54.3	45.8	23.4	1.26	29.1	64.4						
100	67.7	56.2	28.6	2.02	22.3	43.9	52.0	43.7	22.1	2.26	23.7	55.0						
105	63.0	53.1	27.3	3.14	21.1	41.9	49.7	41.7	21.1	3.31	23.8	52.2						
110	60.2	50.9	25.9	4.39	20.0	39.9	47.3	39.7	20.3	4.54	24.7	50.0						
115	57.4	48.5	24.8	5.47	19.1	37.7	44.8	37.7	19.6	5.73	24.3	47.8						
120	54.3	46.0	23.2	6.36	18.3	35.4	42.1	35.5	18.9	6.61	23.5	45.5						
125	51.1	43.5	21.2	7.20	17.7	33.1	39.3	33.3	18.2	7.42	21.7	43.0						
130	47.7	40.9	19.5	7.93	17.1	30.8	36.4	31.1	17.7	8.23	20.3	40.4						
135	44.3	37.5	18.1	8.63	16.6	28.5	33.4	28.7	17.0	8.97	18.9	32.9						
140	40.9	32.6	16.9	9.27	16.0	26.2	30.5	26.4	16.2	9.59	17.7	30.6						
145	37.4	28.1	15.9	9.80	15.4	23.9	27.5	24.1	15.4	10.2	16.6	28.1						
150	34.0	24.2	15.0	10.3	14.8	21.6	24.6	21.7	14.6	10.6	15.6	24.8						
155	30.6	20.8	14.0	10.7	14.5	19.3	21.5	19.3	14.3	11.0	14.6	21.5						
160	27.2	18.0	13.3	11.7	14.3	17.0	18.7	17.1	14.1	11.9	13.7	18.5						
165	23.8	15.7	13.2	12.7	14.4	15.4	16.1	15.4	14.2	12.9	13.4	16.0						
170	20.5	13.8	13.7	13.6	14.1	14.3	14.2	14.1	14.1	13.8	13.9	14.3						
175	17.0	12.3	14.2	14.4	14.2	13.5	12.0	13.1	14.4	14.5	14.4	12.9						
180	13.0	12.4	14.7	14.9	14.6	13.2	13.0	12.4	14.7	14.9	14.6	13.2						

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-06-25

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.600m [K=1.0000]
 Remarks: