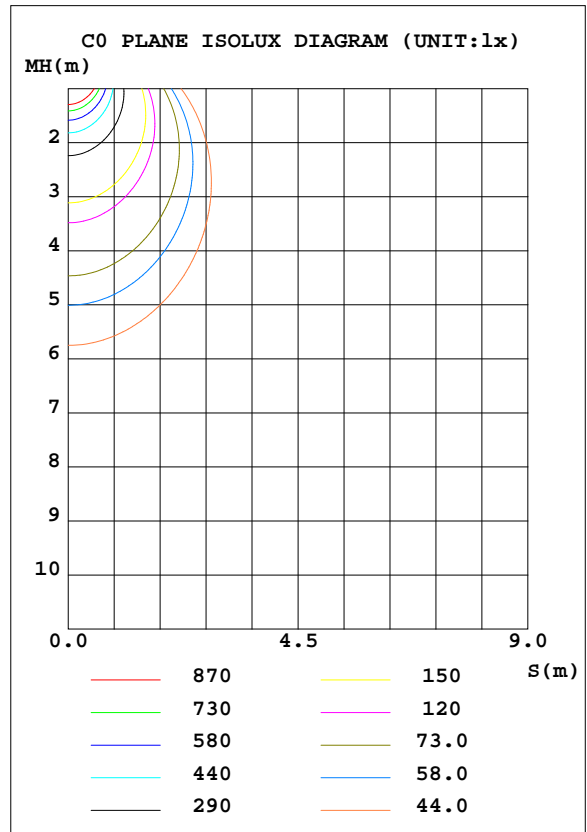
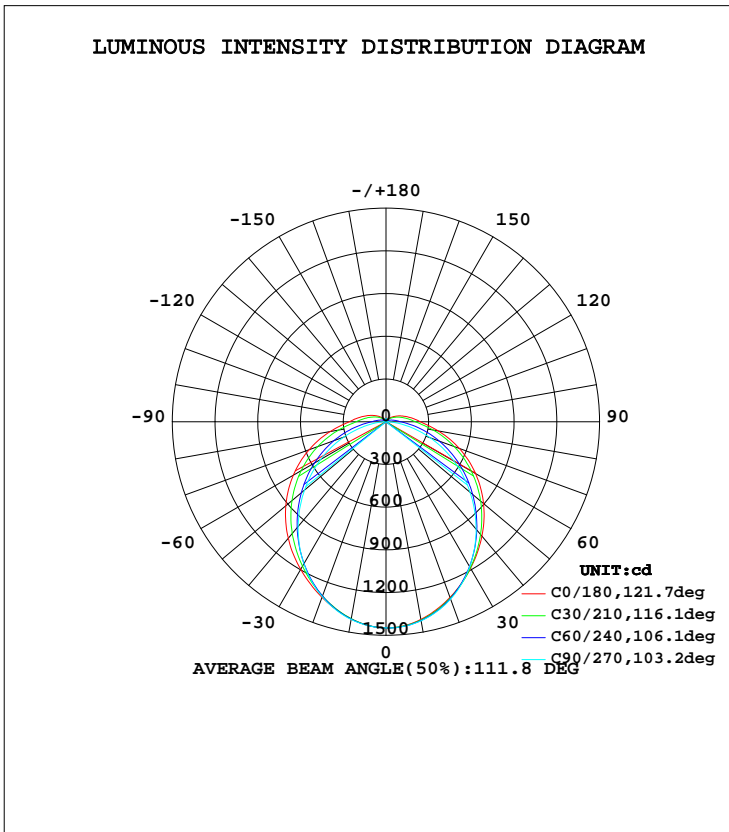


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:239.9V I:0.1570A P:36.10W PF:0.9560 Lamp Flux:4649.32x1 lm		
NAME: 950-083	TYPE:38W	WEIGHT:
DIM.:	SPEC.:5000K	SERIAL No.:1
MFR.: Tronix Lighting	SUR.:1.25X0.12	PROTECTION ANGLE:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 128.79 lm/W			
MODEL	950-083	I _{max} (cd)	1449	S/MH(C0/180)	1.23
NOMINAL POWER(W)	38	LOR(%)	100.0	S/MH(C90/270)	1.21
RATED VOLTAGE(V)	240	TOTAL FLUX(lm)	4649.3	η UP, DN(C0-180)	3.9, 46.4
NOMINAL FLUX(lm)	4649.32	CIE CLASS	DIRECT	η UP, DN(C180-360)	3.9, 45.9
LAMPS INSIDE	1	η up(%)	7.8	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	239.9	η down(%)	92.2	CIBSE SHR MAX	1.35



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-11-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	Φlum, lamp
10	1410	1416	1420	1413	1406	1406	1409	1409	0- 10	136.4	136.4	2.93,2.93
20	1313	1320	1326	1315	1313	1303	1308	1308	10- 20	385.7	522.2	11.2,11.2
30	1188	1179	1175	1177	1197	1162	1153	1166	20- 30	574.6	1097	23.6,23.6
40	1049	1013	984.8	1014	1068	997.5	960.4	998.6	30- 40	684.4	1781	38.3,38.3
50	893.9	831.0	771.0	836.5	918.6	819.4	747.6	818.3	40- 50	710.3	2491	53.6,53.6
60	725.4	642.8	550.1	650.9	751.7	634.5	529.5	632.6	50- 60	657.4	3149	67.7,67.7
70	547.8	454.9	330.5	464.3	575.1	450.1	315.7	447.8	60- 70	539.6	3689	79.3,79.3
80	372.9	279.2	130.5	289.1	398.8	277.5	120.4	275.4	70- 80	379.5	4068	87.5,87.5
90	242.3	155.5	15.37	162.5	258.5	156.0	14.41	155.5	80- 90	220.3	4288	92.2,92.2
100	173.3	102.6	13.93	108.1	185.9	103.5	13.71	102.8	90-100	135.6	4424	95.2,95.2
110	120.1	66.20	13.52	70.35	129.8	67.76	13.74	66.35	100-110	89.06	4513	97.1,97.1
120	79.69	41.27	13.61	44.67	87.21	43.50	14.20	41.38	110-120	55.48	4568	98.3,98.3
130	49.88	26.07	14.25	28.28	55.43	28.35	14.94	26.43	120-130	32.87	4601	99,99
140	29.04	18.72	15.20	20.14	32.47	20.67	16.48	19.51	130-140	19.23	4621	99.4,99.4
150	19.71	18.11	17.09	18.55	20.40	19.21	18.13	18.88	140-150	12.11	4633	99.6,99.6
160	20.27	19.36	19.00	19.65	20.75	20.12	19.63	19.94	150-160	8.909	4642	99.8,99.8
170	21.02	20.37	20.37	20.61	21.41	20.80	20.64	20.60	160-170	5.734	4647	100,100
180	21.38	21.03	21.06	20.99	21.45	21.02	21.05	21.00	170-180	1.991	4649	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

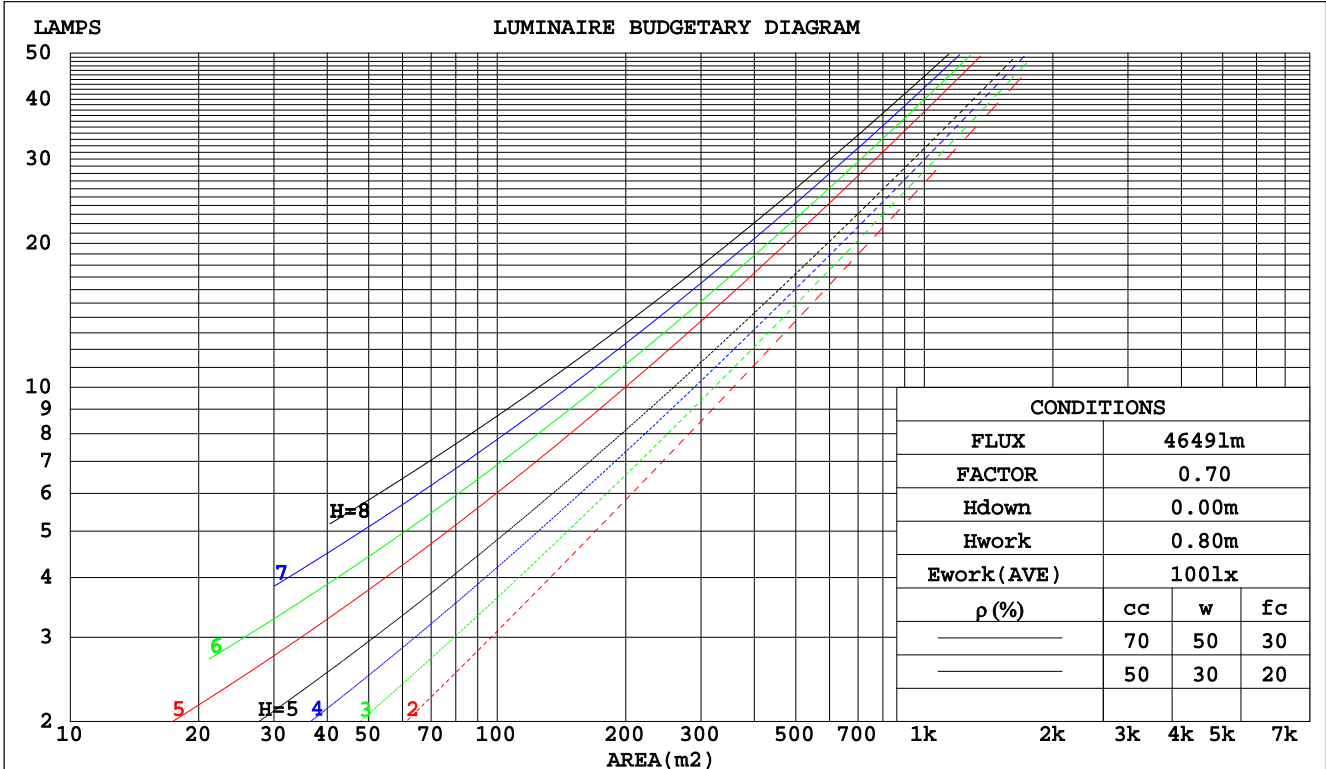
C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-11-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

CU AND LUMINAIRE BUDGETARY ESTIMATE DIAGRAM

Test:U:239.9V I:0.1570A P:36.10W PF:0.9560 Lamp Flux:4649.32x1 lm		
NAME: 950-083	TYPE:38W	WEIGHT:
DIM.:	SPEC.:5000K	SERIAL No.:1
MFR.: Tronix Lighting	SUR.:1.25X0.12	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															
	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	.92
1.0	1.00	.95	.91	.97	.93	.89	.91	.88	.85	.86	.83	.81	.81	.79	.77	.74
2.0	.87	.79	.73	.84	.77	.72	.79	.74	.69	.75	.70	.66	.71	.67	.63	.61
3.0	.76	.67	.60	.74	.66	.59	.69	.63	.57	.66	.60	.55	.62	.57	.53	.51
4.0	.67	.58	.51	.65	.57	.50	.62	.54	.49	.58	.52	.47	.55	.50	.46	.43
5.0	.60	.50	.44	.58	.49	.43	.55	.48	.42	.52	.46	.41	.50	.44	.40	.37
6.0	.54	.45	.38	.52	.44	.37	.50	.42	.37	.47	.41	.36	.45	.39	.35	.32
7.0	.49	.40	.33	.47	.39	.33	.45	.38	.32	.43	.36	.32	.41	.35	.31	.29
8.0	.44	.36	.30	.43	.35	.29	.41	.34	.29	.39	.33	.28	.38	.32	.28	.26
9.0	.41	.32	.27	.40	.32	.26	.38	.31	.26	.36	.30	.25	.35	.29	.25	.23
10.0	.37	.30	.24	.37	.29	.24	.35	.28	.24	.34	.27	.23	.32	.27	.23	.21



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-11-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

WEC AND CCEC

Test:U:239.9V I:0.1570A P:36.10W PF:0.9560 Lamp Flux:4649.32x1 lm		
NAME: 950-083	TYPE:38W	WEIGHT:
DIM.:	SPEC.:5000K	SERIAL No.:1
MFR.: Tronix Lighting	SUR.:1.25X0.12	PROTECTION 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	.346	.196	.062	.336	.192	.061	.318	.183	.058	.302	.174	.056	.287	.166	.054	
2.0	.310	.170	.052	.302	.166	.051	.286	.159	.049	.271	.152	.048	.258	.146	.046	
3.0	.281	.150	.045	.274	.147	.044	.259	.141	.043	.246	.135	.041	.234	.129	.040	
4.0	.256	.133	.039	.249	.131	.039	.237	.125	.037	.225	.121	.036	.214	.116	.035	
5.0	.235	.120	.035	.229	.117	.034	.217	.113	.033	.206	.109	.032	.196	.105	.032	
6.0	.217	.109	.031	.211	.107	.031	.201	.103	.030	.191	.099	.029	.182	.096	.028	
7.0	.201	.099	.028	.196	.098	.028	.186	.094	.027	.177	.091	.026	.169	.088	.026	
8.0	.187	.091	.026	.182	.090	.025	.174	.087	.025	.166	.084	.024	.158	.081	.024	
9.0	.175	.084	.024	.171	.083	.023	.163	.080	.023	.155	.078	.022	.148	.075	.022	
10.0	.164	.079	.022	.160	.077	.022	.153	.075	.021	.146	.073	.021	.140	.070	.020	

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	.250	.250	.250	.213	.213	.213	.146	.146	.146	.084	.084	.084	.027	.027	.027	
1.0	.242	.215	.191	.207	.185	.165	.142	.127	.114	.082	.074	.066	.026	.024	.021	
2.0	.235	.192	.156	.201	.165	.135	.138	.114	.094	.079	.066	.055	.025	.022	.018	
3.0	.227	.175	.133	.195	.151	.115	.134	.105	.081	.077	.061	.048	.025	.020	.016	
4.0	.219	.162	.118	.188	.140	.102	.129	.097	.072	.075	.057	.043	.024	.019	.014	
5.0	.212	.152	.107	.182	.131	.093	.125	.092	.066	.073	.054	.039	.023	.018	.013	
6.0	.204	.143	.100	.176	.124	.087	.121	.087	.061	.070	.051	.037	.023	.017	.012	
7.0	.197	.137	.094	.170	.118	.082	.117	.083	.058	.068	.049	.035	.022	.016	.011	
8.0	.191	.131	.090	.164	.114	.078	.114	.080	.056	.066	.047	.033	.021	.015	.011	
9.0	.185	.126	.087	.159	.109	.075	.110	.077	.054	.064	.045	.032	.021	.015	.011	
10.0	.179	.122	.084	.154	.106	.073	.107	.074	.052	.062	.044	.031	.020	.014	.010	

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-11-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

Uncorrected UGR Table

Test:U:239.9V I:0.1570A P:36.10W PF:0.9560 Lamp Flux:4649.32x1 lm										
NAME: 950-083					TYPE:38W			WEIGHT:		
DIM.:					SPEC.:5000K			SERIAL No.:1		
MFR.: Tronix Lighting					SUR.:1.25X0.12			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	20.3	21.8	20.7	22.1	22.5	19.2	20.7	19.6	21.0	21.4
3H	22.4	23.8	22.8	24.1	24.5	20.7	22.0	21.1	22.4	22.8
4H	23.5	24.8	23.9	25.1	25.6	21.2	22.5	21.7	22.9	23.3
6H	24.6	25.8	25.0	26.2	26.6	21.6	22.8	22.1	23.2	23.7
8H	25.1	26.3	25.6	26.7	27.2	21.7	22.9	22.2	23.3	23.8
12H	25.8	26.9	26.2	27.3	27.8	21.8	22.9	22.2	23.3	23.8
4H 2H	20.9	22.2	21.3	22.6	23.0	20.0	21.3	20.5	21.7	22.1
3H	23.2	24.3	23.7	24.8	25.2	21.7	22.8	22.1	23.2	23.7
4H	24.4	25.5	24.9	25.9	26.4	22.4	23.4	22.9	23.9	24.4
6H	25.7	26.6	26.2	27.1	27.7	23.0	23.9	23.5	24.4	24.9
8H	26.4	27.2	26.9	27.8	28.3	23.1	24.0	23.7	24.5	25.0
12H	27.2	27.9	27.7	28.5	29.0	23.3	24.0	23.8	24.6	25.1
8H 4H	24.7	25.6	25.3	26.1	26.6	23.0	23.9	23.5	24.4	24.9
6H	26.3	27.0	26.8	27.5	28.1	23.8	24.5	24.4	25.1	25.7
8H	27.1	27.8	27.7	28.3	28.9	24.1	24.8	24.7	25.3	26.0
12H	28.1	28.7	28.7	29.3	29.9	24.4	24.9	25.0	25.5	26.2
12H 4H	24.7	25.5	25.3	26.0	26.6	23.2	23.9	23.7	24.5	25.0
6H	26.4	27.0	26.9	27.6	28.2	24.1	24.7	24.7	25.3	25.9
8H	27.3	27.9	27.9	28.4	29.1	24.5	25.1	25.1	25.7	26.3
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 / - 0.3				
2.0H	+ 0.2 / - 0.3					+ 0.1 / - 0.3				

CIE Pub.117 Corrected 4649 lm Total Lamp Luminous Flux.(8log(F/F0) = 5.3)

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-11-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

UTILIZATION FACTORS TABLE

Test:U:239.9V I:0.1570A P:36.10W PF:0.9560 Lamp Flux:4649.32x1 lm		
NAME: 950-083	TYPE:38W	WEIGHT:
DIM.:	SPEC.:5000K	SERIAL No.:1
MFR.: Tronix Lighting	SUR.:1.25X0.12	PROTECTION ANGLE:

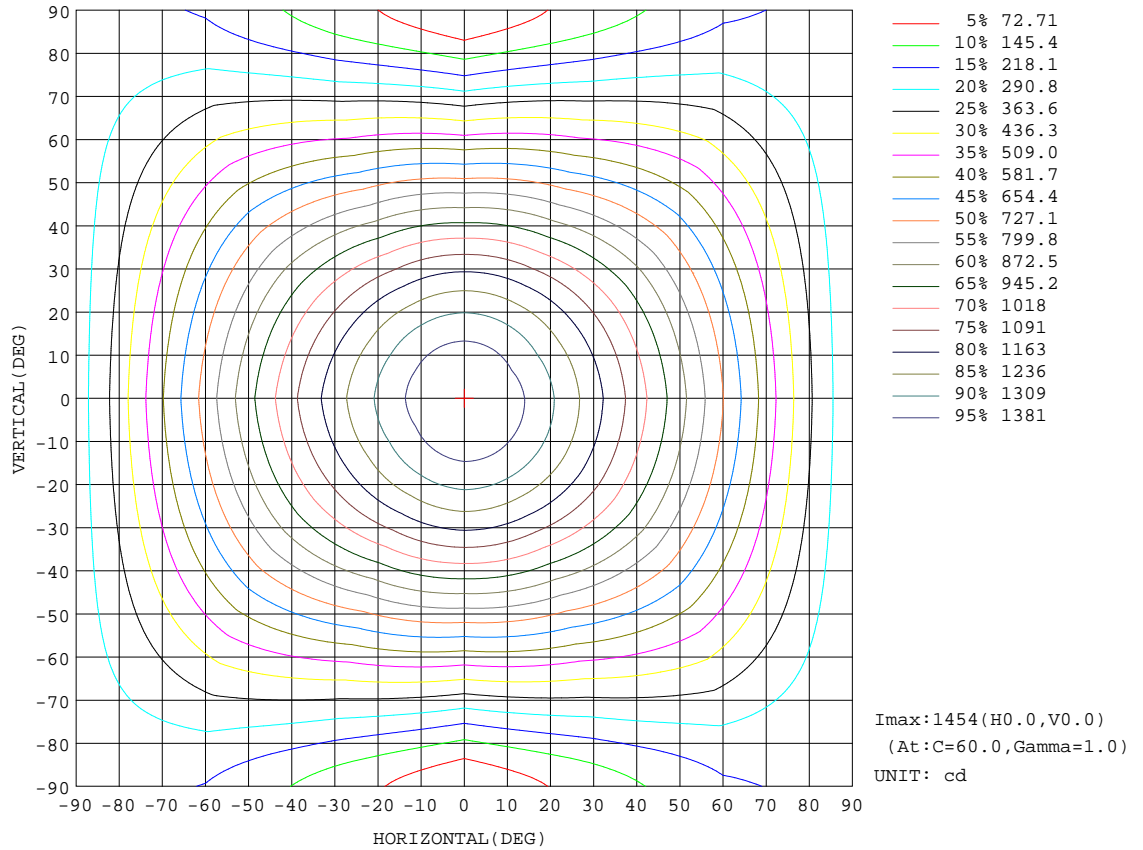
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	54	42	35	53	41	35	51	41	34	28
0.80	63	51	43	62	50	43	60	49	43	35
1.00	71	59	52	70	59	51	67	60	50	43
1.25	78	67	59	76	66	58	73	64	57	49
1.50	83	72	65	81	71	64	77	69	62	54
2.00	90	80	73	88	79	72	83	76	70	61
2.50	94	85	78	92	84	77	87	80	75	65
3.00	98	90	83	95	88	82	90	84	79	68
4.00	102	95	90	99	93	88	94	89	84	73
5.00	105	99	94	102	96	92	96	92	88	76
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:2018-11-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:239.9V I:0.1570A P:36.10W PF:0.9560 Lamp Flux:4649.32x1 lm		
NAME: 950-083	TYPE:38W	WEIGHT:
DIM.:	SPEC.:5000K	SERIAL No.:1
MFR.: Tronix Lighting	SUR.:1.25X0.12	PROTECTION ANGLE:

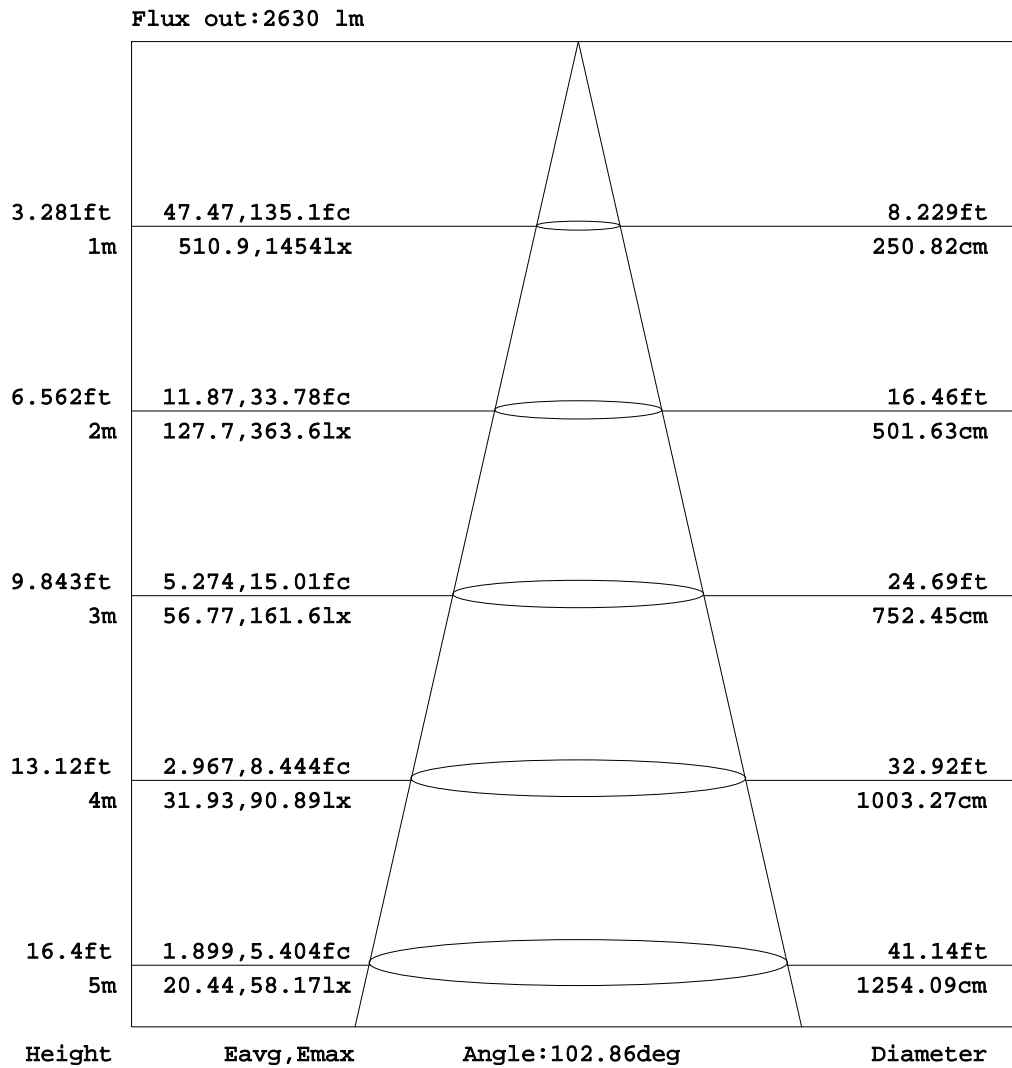


C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-11-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

AAI Figure

Test:U:239.9V I:0.1570A P:36.10W PF:0.9560 Lamp Flux:4649.32x1 lm		
NAME: 950-083	TYPE:38W	WEIGHT:
DIM.:	SPEC.:5000K	SERIAL No.:1
MFR.: Tronix Lighting	SUR.:1.25X0.12	PROTECTION ANGLE:



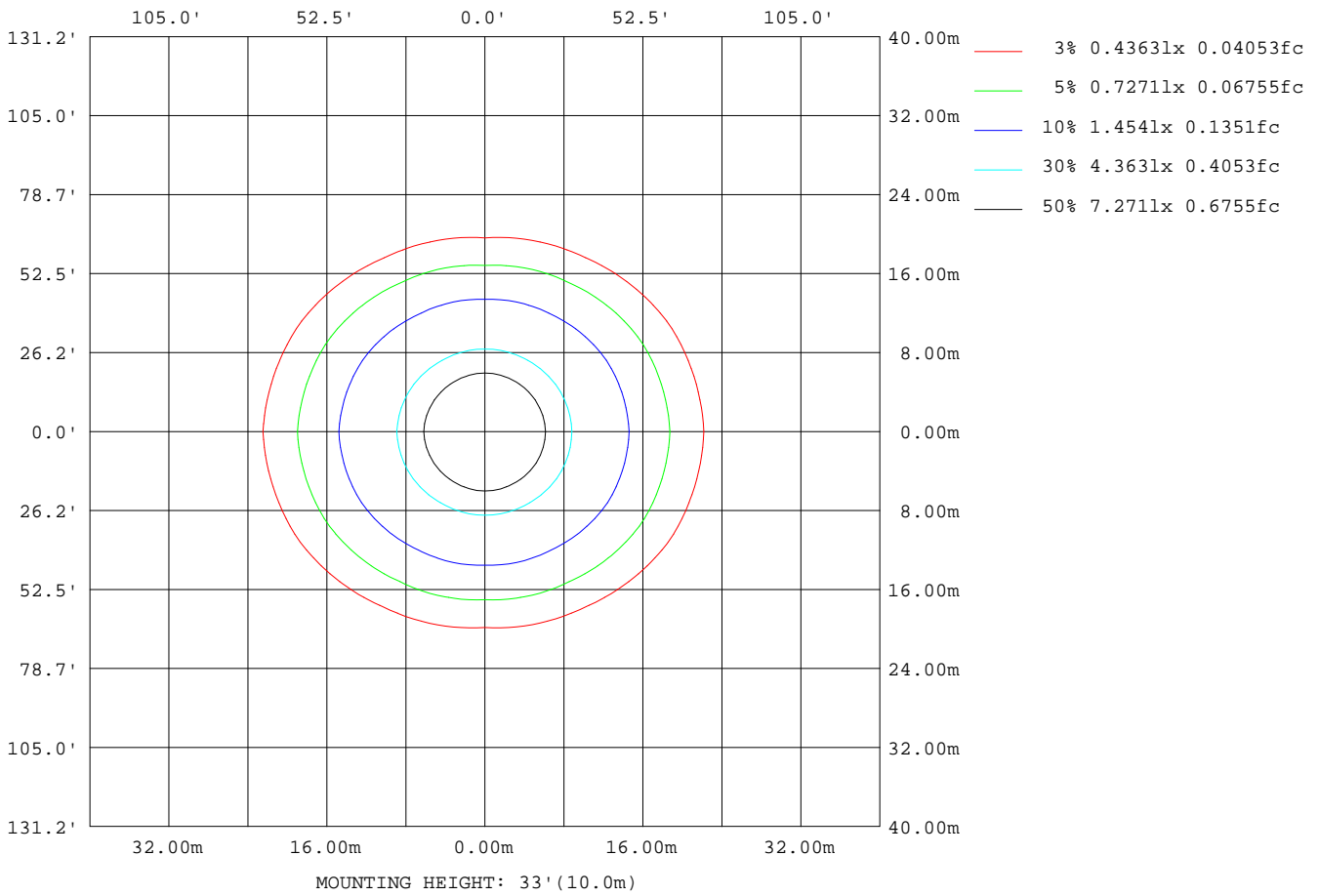
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-11-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks:

ISOLUX DIAGRAM

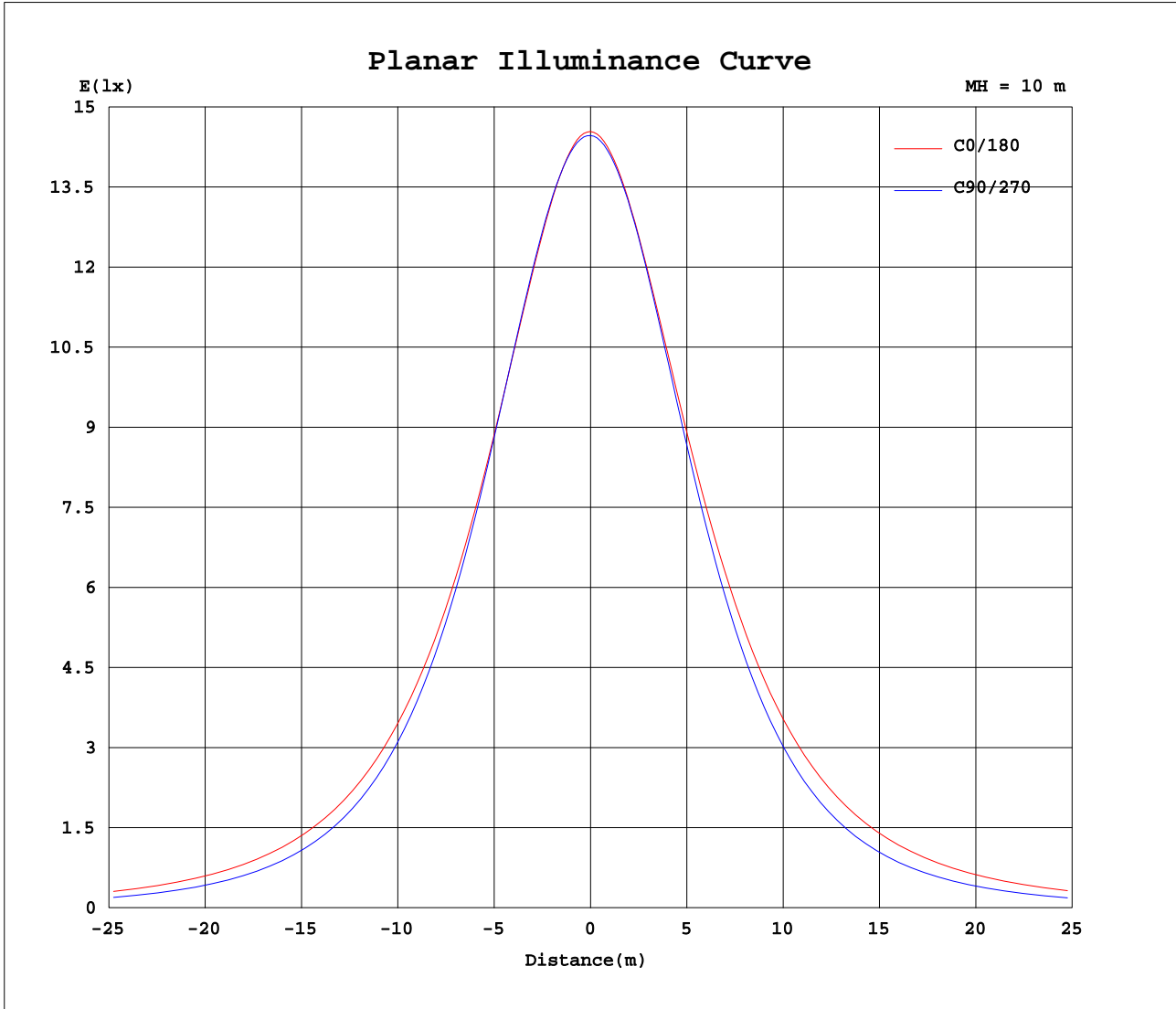
Test:U:239.9V I:0.1570A P:36.10W PF:0.9560 Lamp Flux:4649.32x1 lm		
NAME: 950-083	TYPE:38W	WEIGHT:
DIM.:	SPEC.:5000K	SERIAL No.:1
MFR.: Tronix Lighting	SUR.:1.25X0.12	PROTECTION ANGLE:



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-11-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [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: 2018-11-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System: EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity: 65.0%
 Test Distance: 9.443m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:239.9V I:0.1570A P:36.10W PF:0.9560 Lamp Flux:4649.32x1 lm		
NAME: 950-083	TYPE:38W	WEIGHT:
DIM.:	SPEC.:5000K	SERIAL No.:1
MFR.: Tronix Lighting	SUR.:1.25X0.12	PROTECTION ANGLE:

Table--1

UNIT: cd

C(DEG)\ γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330							
0	1448	1448	1448	1448	1448	1448	1448	1448	1448	1448	1448	1448							
5	1438	1440	1442	1442	1440	1439	1436	1436	1436	1437	1438	1438							
10	1410	1414	1418	1420	1415	1410	1406	1404	1407	1409	1410	1408							
15	1366	1372	1377	1380	1374	1367	1363	1359	1362	1366	1366	1364							
20	1313	1318	1321	1326	1317	1313	1313	1303	1303	1308	1307	1309							
25	1253	1256	1253	1257	1248	1251	1257	1240	1232	1236	1237	1245							
30	1188	1186	1173	1175	1169	1185	1197	1172	1151	1153	1156	1175							
35	1120	1111	1086	1084	1082	1114	1135	1100	1063	1060	1068	1100							
40	1049	1033	992	985	990	1039	1068	1024	971	960	975	1022							
45	973	952	894	880	894	960	996	945	874	855	878	941							
50	894	868	794	771	796	877	919	862	776	748	780	857							
55	811	781	694	661	697	792	837	776	678	639	681	771							
60	725	691	594	550	598	703	752	688	581	530	583	682							
65	637	601	496	440	501	613	664	599	484	422	486	593							
70	548	510	399	331	405	523	575	510	390	316	392	503							
75	459	421	307	226	314	434	486	422	299	214	301	416							
80	373	335	223	131	230	349	399	338	217	120	219	332							
85	296	260	151	53.1	157	272	318	264	147	46.6	150	258							
90	242	207	104	15.4	109	216	259	210	102	14.4	105	206							
95	206	173	80.1	14.3	84.7	181	220	176	78.8	13.9	81.3	173							
100	173	144	61.4	13.9	65.4	151	186	146	60.8	13.7	62.7	143							
105	145	118	47.1	13.6	50.5	124	156	121	47.1	13.7	48.4	118							
110	120	96.2	36.2	13.5	39.0	102	130	98.9	36.6	13.7	36.8	95.9							
115	98.5	77.5	27.3	13.5	30.3	82.3	107	80.3	28.6	13.9	27.9	76.7							
120	79.7	61.7	20.8	13.6	23.4	65.9	87.2	64.5	22.4	14.2	21.6	61.1							
125	63.5	48.6	16.8	13.9	18.4	52.2	70.0	51.3	18.1	14.5	17.8	48.8							
130	49.9	36.7	15.4	14.2	15.9	40.7	55.4	40.2	16.5	14.9	16.2	36.6							
135	38.3	27.2	15.7	14.5	16.1	31.1	42.9	30.9	16.9	15.7	16.6	27.3							
140	29.0	21.2	16.2	15.2	16.6	23.7	32.5	23.8	17.5	16.5	17.1	21.9							
145	22.3	18.3	16.8	16.1	17.3	19.3	24.4	19.7	18.1	17.3	17.7	19.0							
150	19.7	18.7	17.6	17.1	18.0	19.1	20.4	19.6	18.8	18.1	18.4	19.4							
155	19.9	19.1	18.4	18.1	18.7	19.5	20.5	20.0	19.4	18.9	19.1	19.8							
160	20.3	19.6	19.1	19.0	19.4	19.9	20.8	20.3	20.0	19.6	19.7	20.2							
165	20.7	20.1	19.7	19.8	20.0	20.3	21.1	20.6	20.4	20.2	20.2	20.5							
170	21.0	20.5	20.3	20.4	20.6	20.7	21.4	20.8	20.8	20.6	20.5	20.7							
175	21.1	20.7	20.7	20.8	20.9	20.9	21.5	21.0	21.0	20.9	20.8	20.8							
180	21.4	21.1	21.0	21.1	21.0	21.0	21.4	21.0	21.0	21.0	21.0	21.0							

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:DAMIN
 Test Date:2018-11-17

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-2000A_V1 SYSTEM V2.0.276
 Humidity:65.0%
 Test Distance:9.443m [K=1.0000]
 Remarks: