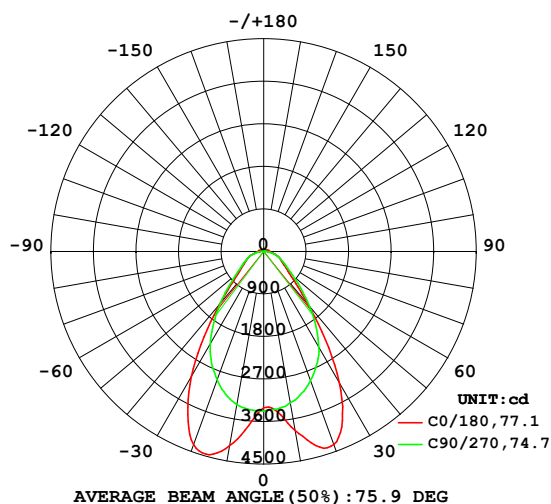


## LUMINAIRE PHOTOMETRIC TEST REPORT

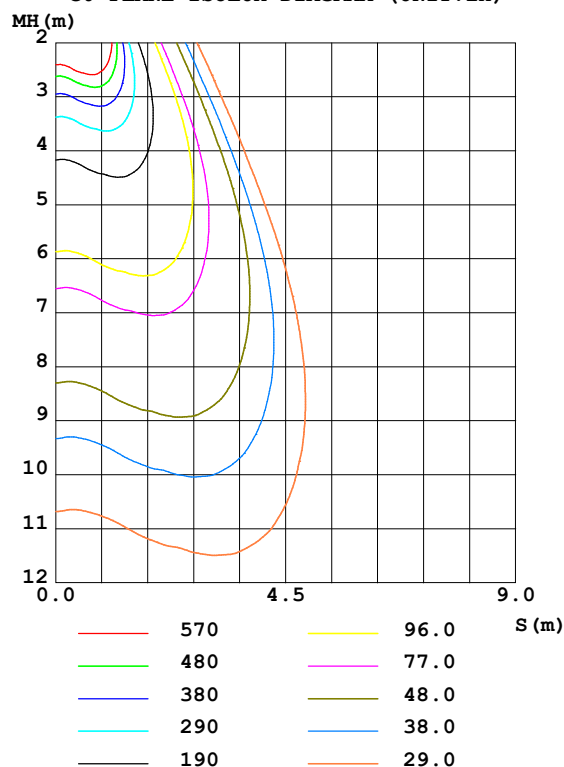
Test:U:221.47V I:0.2082A P:44.557W PF:0.9664 Freq:49.98Hz Lamp Flux:7078.48x1 lm		
NAME: LED Linear Lighting System	TYPE:	WEIGHT:2kg
SPEC.:	DIM.: 1500*60*45mm	SERIAL No.:
MFR.: CoreShine	SUR.:1500*60mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 158.86 lm/W			
MODEL	CTLS-1545-40DS-04WH	I <sub>max</sub> (cd)	4581	S/MH (C0/180)	1.11
NOMINAL POWER (W)	45	LOR (%)	100.0	S/MH (C90/270)	1.05
RATED VOLTAGE (V)	230.0	TOTAL FLUX (lm)	7078.5	η UP, DN (C0-180)	1.8, 48.6
NOMINAL FLUX (lm)	7078.48	CIE CLASS	DIRECT	η UP, DN (C180-360)	1.8, 47.8
LAMPS INSIDE	1	η up (%)	3.6	CIBSE SHR NOM	1.00
TEST VOLTAGE (V)	230.0	η down (%)	96.4	CIBSE SHR MAX	1.10

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature: 25.3DEG  
 Operators: zcx  
 Test Date: 2020-07-03

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.366  
 Humidity: 65.0%  
 Test Distance: 8.330m [K=1.0000]  
 Remarks:

## ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

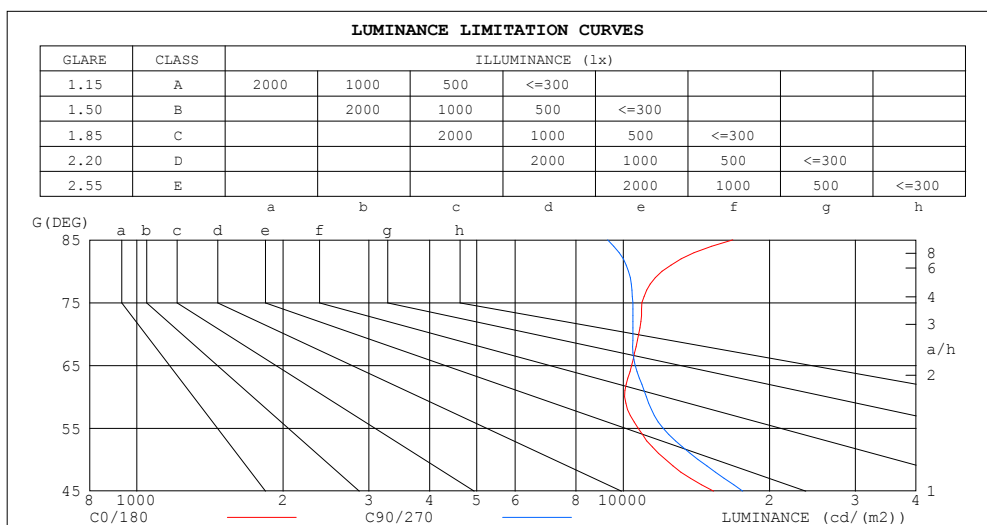
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	3843	3484	3254	3939	4178	3868	3292	3687	0- 10	340.0	340.0	4.8,4.8
20	4345	3849	2906	4315	4346	4174	2889	4102	10- 20	1093	1433	20.2,20.2
30	3196	3343	2339	3652	3060	3444	2265	3538	20- 30	1643	3076	43.5,43.5
40	1471	1876	1498	1943	1429	1847	1422	1901	30- 40	1493	4569	64.6,64.6
50	706.7	854.7	824.5	868.2	696.4	854.2	772.2	831.5	40- 50	929.5	5499	77.7,77.7
60	453.4	477.1	502.3	480.5	455.4	484.5	486.1	462.3	50- 60	567.2	6066	85.7,85.7
70	331.5	295.3	322.6	297.6	326.6	298.8	321.9	290.3	60- 70	389.8	6456	91.2,91.2
80	187.9	158.8	160.2	160.1	181.3	161.1	164.8	156.3	70- 80	252.0	6708	94.8,94.8
90	87.28	71.99	7.653	77.77	90.29	73.50	8.195	71.45	80- 90	117.9	6826	96.4,96.4
100	101.7	65.04	8.756	68.01	111.9	60.28	8.902	63.53	90-100	66.83	6892	97.4,97.4
110	75.29	47.87	11.14	47.48	72.70	45.15	10.95	47.90	100-110	57.32	6950	98.2,98.2
120	52.39	33.63	12.24	38.52	49.95	38.62	12.99	34.43	110-120	39.76	6990	98.7,98.7
130	46.79	27.35	14.38	33.61	43.09	34.58	15.31	27.23	120-130	29.79	7019	99.2,99.2
140	40.79	25.64	16.40	31.64	36.50	31.74	17.42	26.36	130-140	22.94	7042	99.5,99.5
150	35.33	22.61	17.60	26.51	31.31	25.71	19.69	23.19	140-150	16.33	7059	99.7,99.7
160	28.22	22.08	20.97	22.14	25.65	21.98	21.80	22.52	150-160	10.99	7070	99.9,99.9
170	24.54	23.63	23.68	22.76	24.23	22.97	24.21	23.91	160-170	6.519	7076	100,100
180	26.74	25.32	25.25	25.37	26.86	25.40	25.28	25.40	170-180	2.336	7078	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:zcx  
 Test Date:2020-07-03

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.366  
 Humidity:65.0%  
 Test Distance:8.330m [K=1.0000]  
 Remarks:

## LUMINANCE LIMITATION CURVES

Test:U:221.47V I:0.2082A P:44.557W PF:0.9664 Freq:49.98Hz Lamp Flux:7078.48x1 lm		
NAME: LED Linear Lighting System	TYPE:	WEIGHT:2kg
SPEC.:	DIM.: 1500*60*45mm	SERIAL No.:
MFR.: CoreShine	SUR.:1500*60mm	Shielding Angle:



LUMINANCE cd/(m2)		
G (DEG)	C0/180	C90/270
85	16789	9285
80	12021	10252
75	10921	10466
70	10768	10479
65	10407	10584
60	10075	11162
55	10736	12077
50	12216	14252
45	15333	17615

C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:zcx  
Test Date:2020-07-03

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.366  
Humidity:65.0%  
Test Distance:8.330m [K=1.0000]  
Remarks:

## WEC AND CCEC

Test:U:221.47V I:0.2082A P:44.557W PF:0.9664 Freq:49.98Hz Lamp Flux:7078.48x1 lm		
NAME: LED Linear Lighting System	TYPE:	WEIGHT:2kg
SPEC.:	DIM.: 1500*60*45mm	SERIAL No.:
MFR.: CoreShine	SUR.:1500*60mm	Shielding 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	.256	.145	.046	.248	.141	.045	.233	.134	.043	.219	.126	.041	.206	.120	.039		
2.0	.239	.131	.040	.232	.128	.039	.219	.122	.038	.207	.116	.036	.196	.111	.035		
3.0	.223	.119	.036	.217	.116	.035	.205	.111	.034	.195	.107	.033	.185	.102	.032		
4.0	.208	.108	.032	.203	.106	.031	.193	.102	.030	.183	.098	.030	.174	.095	.029		
5.0	.195	.099	.029	.190	.097	.028	.181	.094	.028	.172	.091	.027	.164	.088	.026		
6.0	.183	.092	.026	.178	.090	.026	.170	.087	.025	.163	.085	.025	.155	.082	.024		
7.0	.172	.085	.024	.168	.084	.024	.161	.081	.023	.154	.079	.023	.147	.077	.023		
8.0	.162	.079	.022	.159	.078	.022	.152	.076	.022	.146	.074	.021	.140	.072	.021		
9.0	.153	.074	.021	.150	.073	.021	.144	.071	.020	.139	.069	.020	.133	.068	.020		
10.0	.145	.070	.019	.143	.069	.019	.137	.067	.019	.132	.066	.019	.127	.064	.018		

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	.218	.218	.218	.186	.186	.186	.127	.127	.127	.073	.073	.073	.023	.023	.023		
1.0	.204	.184	.166	.175	.158	.143	.119	.109	.099	.069	.063	.057	.022	.020	.019		
2.0	.193	.160	.132	.165	.138	.114	.113	.095	.080	.065	.055	.047	.021	.018	.015		
3.0	.183	.142	.109	.157	.122	.094	.108	.085	.066	.062	.050	.039	.020	.016	.013		
4.0	.175	.128	.092	.150	.111	.080	.103	.077	.056	.060	.045	.033	.019	.015	.011		
5.0	.167	.117	.080	.143	.101	.070	.099	.071	.049	.057	.042	.029	.018	.014	.010		
6.0	.160	.109	.072	.137	.094	.062	.095	.066	.044	.055	.039	.026	.018	.013	.009		
7.0	.153	.101	.065	.132	.088	.057	.091	.062	.040	.053	.036	.024	.017	.012	.008		
8.0	.147	.096	.060	.127	.083	.052	.088	.058	.037	.051	.034	.022	.017	.011	.007		
9.0	.142	.091	.056	.122	.079	.049	.085	.055	.035	.049	.033	.021	.016	.011	.007		
10.0	.137	.086	.053	.118	.075	.046	.082	.053	.033	.048	.031	.019	.015	.010	.006		

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:zcx  
 Test Date:2020-07-03

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.366  
 Humidity:65.0%  
 Test Distance:8.330m [K=1.0000]  
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:221.47V I:0.2082A P:44.557W PF:0.9664 Freq:49.98Hz Lamp Flux:7078.48x1 lm										
NAME: LED Linear Lighting System					TYPE:			WEIGHT:2kg		
SPEC.:					DIM.: 1500*60*45mm			SERIAL No.:		
MFR.: CoreShine					SUR.:1500*60mm			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	12.9	14.1	13.2	14.4	14.6	13.8	15.0	14.1	15.2	15.5
3H	14.0	15.1	14.3	15.4	15.7	14.7	15.8	15.0	16.1	16.4
4H	14.6	15.7	15.0	16.0	16.3	15.2	16.2	15.5	16.5	16.9
6H	15.2	16.2	15.6	16.5	16.9	15.6	16.6	16.0	16.9	17.3
8H	15.5	16.5	15.9	16.8	17.2	15.8	16.7	16.1	17.1	17.4
12H	15.9	16.8	16.3	17.2	17.5	15.9	16.8	16.3	17.1	17.5
4H 2H	13.2	14.3	13.6	14.6	14.9	14.0	15.0	14.3	15.3	15.6
3H	14.6	15.5	15.0	15.8	16.2	15.1	16.1	15.5	16.4	16.8
4H	15.3	16.2	15.7	16.5	16.9	15.8	16.6	16.2	17.0	17.4
6H	16.1	16.9	16.6	17.3	17.7	16.4	17.1	16.8	17.6	18.0
8H	16.5	17.2	17.0	17.7	18.1	16.6	17.3	17.1	17.8	18.2
12H	17.0	17.6	17.5	18.1	18.5	16.8	17.4	17.3	17.9	18.4
8H 4H	15.6	16.3	16.0	16.7	17.1	16.0	16.7	16.4	17.1	17.6
6H	16.6	17.1	17.0	17.6	18.1	16.8	17.3	17.3	17.8	18.3
8H	17.1	17.6	17.6	18.1	18.6	17.1	17.6	17.6	18.1	18.6
12H	17.7	18.2	18.3	18.7	19.2	17.4	17.8	17.9	18.3	18.9
12H 4H	15.6	16.2	16.1	16.7	17.1	16.0	16.6	16.5	17.1	17.6
6H	16.6	17.1	17.1	17.6	18.2	16.8	17.4	17.4	17.8	18.4
8H	17.3	17.7	17.8	18.2	18.8	17.3	17.7	17.8	18.2	18.8
Variations with the observer position at spacings:										
S = 1.0H	+ 0.4 / - 0.4					+ 0.5 / - 0.5				
1.5H	+ 0.5 / - 0.3					+ 0.5 / - 0.5				
2.0H	+ 0.4 / - 0.2					+ 0.8 / - 0.5				

CIE Pub.117, 7078 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = 6.8$ )

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:zcx  
 Test Date:2020-07-03

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.366  
 Humidity:65.0%  
 Test Distance:8.330m [K=1.0000]  
 Remarks:

## UTILIZATION FACTORS TABLE

Test:U:221.47V I:0.2082A P:44.557W PF:0.9664 Freq:49.98Hz Lamp Flux:7078.48x1 lm		
NAME: LED Linear Lighting System	TYPE:	WEIGHT:2kg
SPEC.:	DIM.: 1500*60*45mm	SERIAL No.:
MFR.: CoreShine	SUR.:1500*60mm	Shielding Angle:

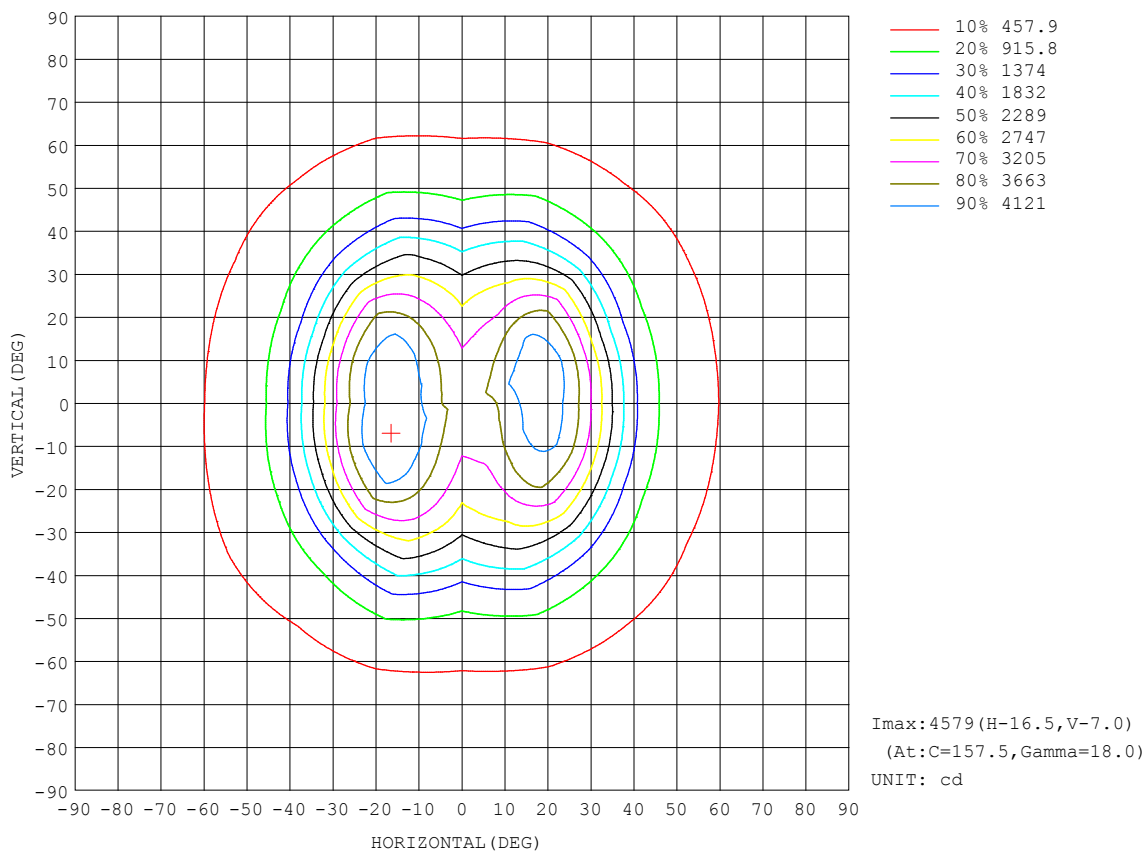
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	70	60	55	69	60	55	68	59	54	49
0.80	79	69	64	78	69	63	76	68	63	57
1.00	85	76	71	84	76	70	82	76	70	64
1.25	91	83	77	90	82	77	87	80	76	69
1.50	95	87	82	93	86	81	90	84	80	73
2.00	100	93	88	98	92	87	94	89	85	78
2.50	103	97	92	101	95	91	97	92	88	80
3.00	105	100	95	103	98	94	99	95	91	83
4.00	108	104	100	106	102	98	101	98	95	86
5.00	110	106	103	108	104	101	103	100	98	88
ROOM INDEX	UF (total)									Direct
According to DIN EN 13032-2 2004			Suspended					SHRNOM = 1.25		

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:zcx  
 Test Date:2020-07-03

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.366  
 Humidity:65.0%  
 Test Distance:8.330m [K=1.0000]  
 Remarks:

## ISOCANDELA DIAGRAM

Test:U:221.47V I:0.2082A P:44.557W PF:0.9664 Freq:49.98Hz Lamp Flux:7078.48x1 lm		
NAME: LED Linear Lighting System	TYPE:	WEIGHT:2kg
SPEC.:	DIM.: 1500*60*45mm	SERIAL No.:
MFR.: CoreShine	SUR.:1500*60mm	Shielding Angle:

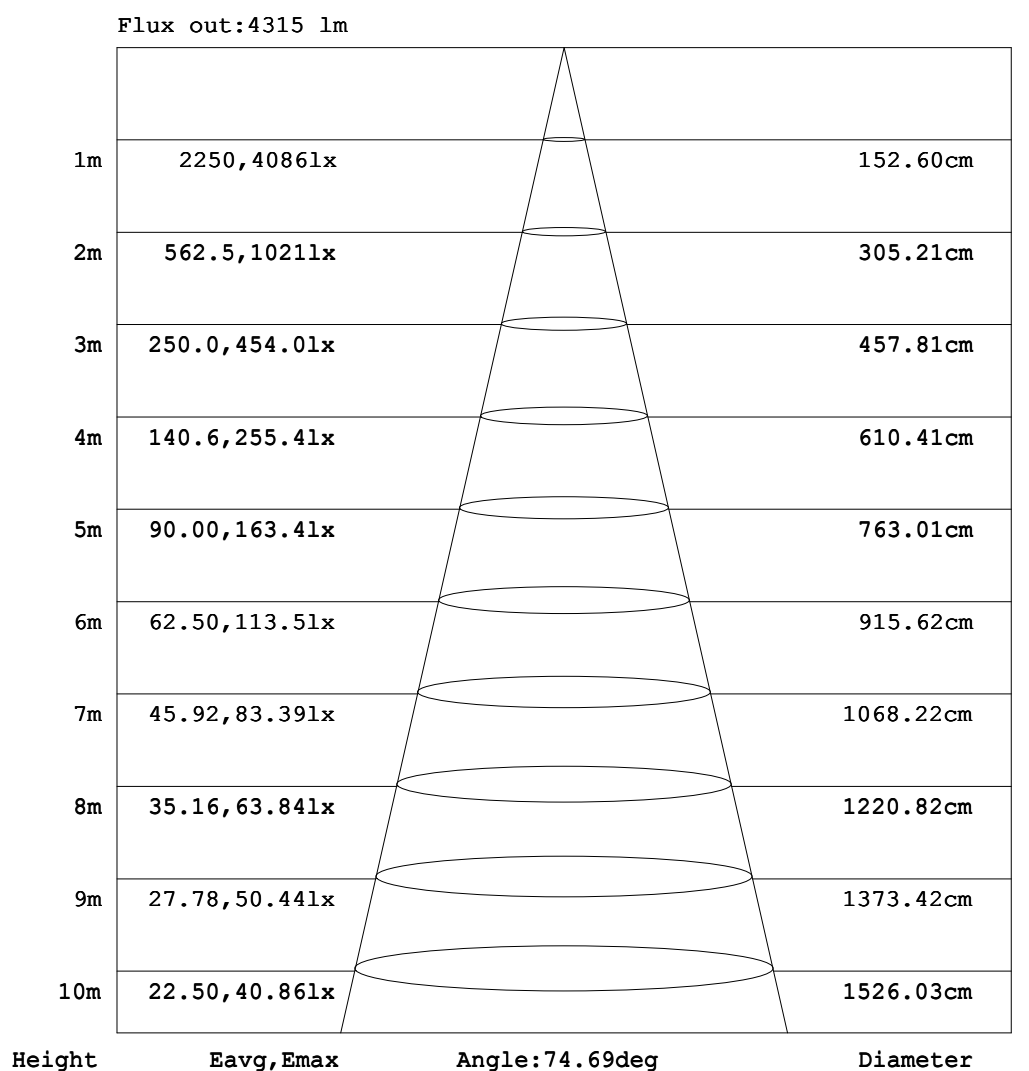


C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:zcx  
Test Date:2020-07-03

γ Range: 0 - 180DEG  
γ Interval: 1.0DEG  
Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.366  
Humidity:65.0%  
Test Distance:8.330m [K=1.0000]  
Remarks:

## AAI Figure

Test:U:221.47V I:0.2082A P:44.557W PF:0.9664 Freq:49.98Hz Lamp Flux:7078.48x1 lm		
NAME: LED Linear Lighting System	TYPE:	WEIGHT:2kg
SPEC.:	DIM.: 1500*60*45mm	SERIAL No.:
MFR.: CoreShine	SUR.:1500*60mm	Shielding Angle:



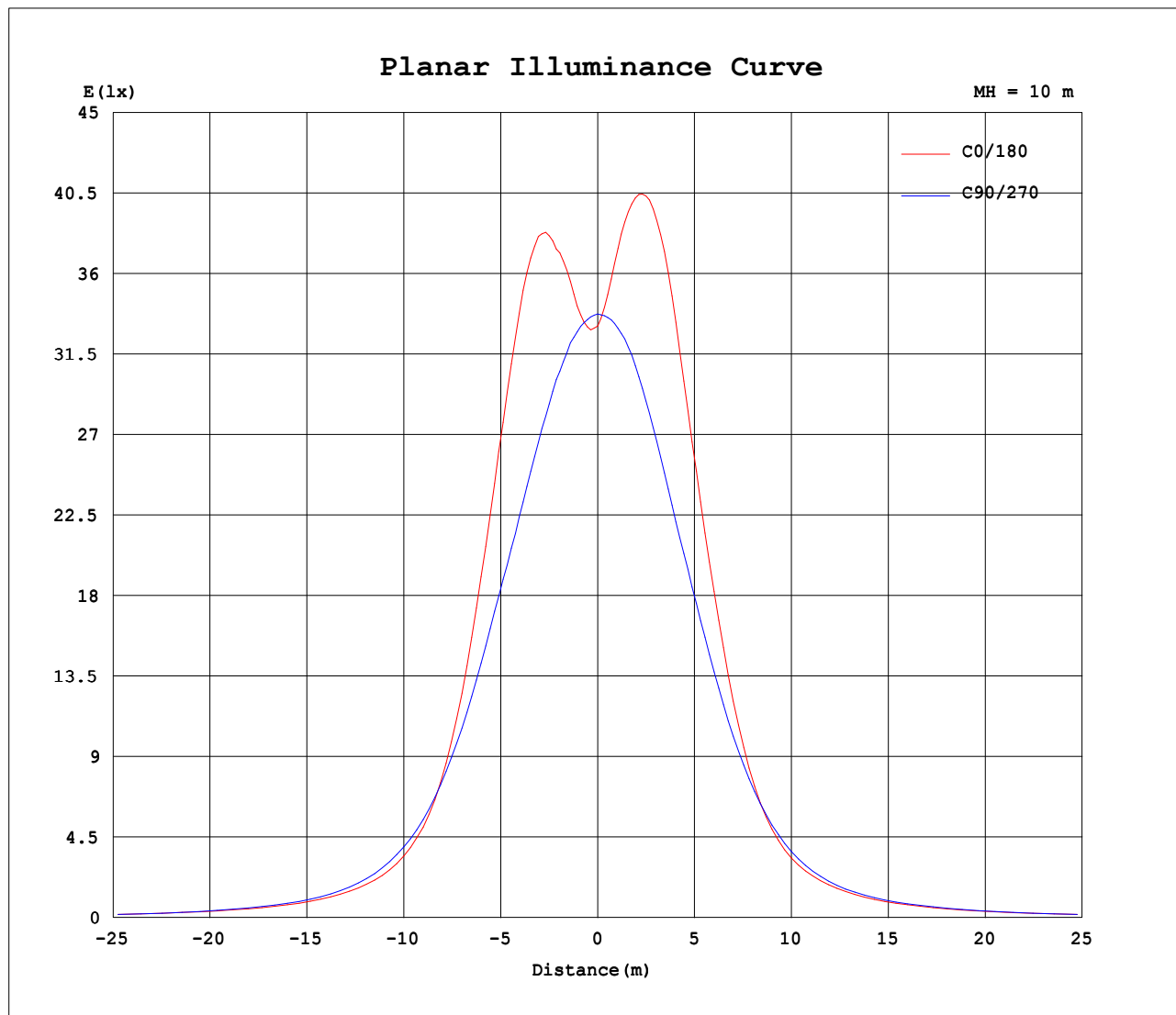
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:zcx  
 Test Date:2020-07-03

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.366  
 Humidity:65.0%  
 Test Distance:8.330m [K=1.0000]  
 Remarks:



## Planar Illuminance Curve



C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature: 25.3DEG  
Operators: zcx  
Test Date: 2020-07-03

$\gamma$  Range: 0 - 180DEG  
 $\gamma$  Interval: 1.0DEG  
Test System: EVERFINE GO-2000B\_V1 SYSTEM V2.0.366  
Humidity: 65.0%  
Test Distance: 8.330m [K=1.0000]  
Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:221.47V I:0.2082A P:44.557W PF:0.9664 Freq:49.98Hz Lamp Flux:7078.48x1 lm		
NAME: LED Linear Lighting System	TYPE:	WEIGHT:2kg
SPEC.:	DIM.: 1500*60*45mm	SERIAL No.:
MFR.: CoreShine	SUR.:1500*60mm	Shielding Angle:

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	3307	3297	3292	3317	3375	3424	3450	3477	3307	3297	3292	3317	3375	3424	3450	3477			
5	3409	3355	3285	3268	3344	3478	3654	3791	3697	3662	3536	3413	3360	3394	3490	3607			
10	3843	3721	3484	3248	3254	3570	3939	4211	4178	4110	3868	3514	3292	3391	3687	4002			
15	4251	4097	3703	3214	3110	3628	4185	4522	4451	4399	4100	3551	3129	3365	3907	4362			
20	4345	4294	3849	3144	2906	3579	4315	4543	4346	4400	4174	3465	2889	3271	4102	4475			
25	3946	4019	3781	2977	2649	3425	4158	4114	3808	3989	3975	3245	2618	3079	4019	4124			
30	3196	3324	3343	2721	2339	3099	3652	3344	3060	3221	3444	2899	2265	2748	3538	3341			
35	2281	2418	2640	2381	1927	2652	2823	2448	2204	2322	2648	2450	1847	2316	2751	2369			
40	1471	1577	1876	1910	1498	2101	1943	1630	1429	1532	1847	1918	1422	1815	1901	1537			
45	976	1025	1253	1411	1121	1543	1271	1079	947	1017	1241	1392	1048	1320	1237	1011			
50	707	716	855	1005	824	1083	868	765	696	719	854	988	772	940	831	717			
55	554	547	625	726	623	768	635	595	546	555	633	724	595	686	609	555			
60	453	438	477	540	502	560	481	484	455	450	484	547	486	518	462	448			
65	396	358	375	418	403	424	380	405	386	372	381	424	395	403	367	369			
70	331	295	295	321	323	324	298	331	327	301	299	329	322	314	290	305			
75	254	230	223	242	244	241	225	256	245	233	226	248	246	238	218	237			
80	188	172	159	164	160	162	160	186	181	171	161	168	165	163	156	176			
85	132	121	106	89.2	72.8	90.6	107	129	124	121	107	91.5	80.3	92.1	106	121			
90	87.3	79.2	72.0	42.3	7.65	45.1	77.8	87.5	90.3	82.7	73.5	44.2	8.20	41.6	71.5	77.1			
95	93.3	80.1	78.1	36.8	7.99	38.3	78.8	88.7	102	85.0	77.5	35.3	8.02	37.5	73.6	80.2			
100	102	92.9	65.0	26.7	8.76	27.3	68.0	103	112	97.6	60.3	25.8	8.90	28.3	63.5	88.7			
105	92.9	78.3	60.3	27.0	10.0	30.1	57.2	84.3	87.6	78.5	59.2	27.6	9.90	27.9	60.2	79.6			
110	75.3	66.5	47.9	25.4	11.1	25.4	47.5	70.9	72.7	64.4	45.1	25.0	11.0	25.0	47.9	67.9			
115	63.3	56.6	39.3	24.7	11.5	25.8	42.5	59.3	59.3	55.5	42.1	25.0	11.9	24.2	41.9	57.2			
120	52.4	48.9	33.6	23.1	12.2	24.5	38.5	50.8	49.9	48.3	38.6	24.5	13.0	23.1	34.4	50.0			
125	49.3	46.1	29.2	22.0	13.5	23.7	35.5	46.5	46.0	44.3	36.1	23.8	14.1	22.4	28.9	47.2			
130	46.8	43.0	27.3	20.8	14.4	22.9	33.6	42.9	43.1	41.3	34.6	22.7	15.3	21.5	27.2	43.4			
135	44.4	37.5	26.2	19.6	15.4	21.8	33.0	39.3	39.9	38.0	32.7	21.7	16.4	20.4	27.3	38.4			
140	40.8	32.4	25.6	16.8	16.4	20.5	31.6	36.6	36.5	35.8	31.7	20.5	17.4	19.7	26.4	31.6			
145	38.2	29.3	24.1	17.1	17.4	19.5	29.7	33.1	34.6	31.7	29.2	19.8	18.6	18.1	24.9	28.0			
150	35.3	27.9	22.6	17.9	17.6	19.2	26.5	31.9	31.3	30.4	25.7	19.6	19.7	18.9	23.2	26.9			
155	32.2	26.2	22.0	19.3	19.3	19.0	23.6	28.7	28.9	27.2	23.1	20.0	20.3	20.2	22.4	25.6			
160	28.2	24.4	22.1	20.7	21.0	20.1	22.1	25.2	25.7	24.1	22.0	20.7	21.8	21.5	22.5	24.2			
165	25.3	23.6	22.6	22.3	22.4	21.7	22.1	23.1	23.8	22.6	22.1	22.3	23.2	22.9	23.0	23.5			
170	24.5	24.1	23.6	23.7	23.7	23.3	22.8	23.0	24.2	22.9	23.0	23.7	24.2	24.2	23.9	24.0			
175	25.8	25.3	24.8	24.7	24.7	24.6	24.4	24.5	25.9	24.6	24.5	24.7	25.0	25.0	25.0	25.3			
180	26.7	25.8	25.3	25.3	25.2	25.3	25.4	25.7	26.9	25.8	25.4	25.2	25.3	25.3	25.4	25.7			

C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:zcx  
 Test Date:2020-07-03

γ Range: 0 - 180DEG  
 γ Interval: 1.0DEG  
 Test System:EVERFINE GO-2000B\_V1 SYSTEM V2.0.366  
 Humidity:65.0%  
 Test Distance:8.330m [K=1.0000]  
 Remarks: