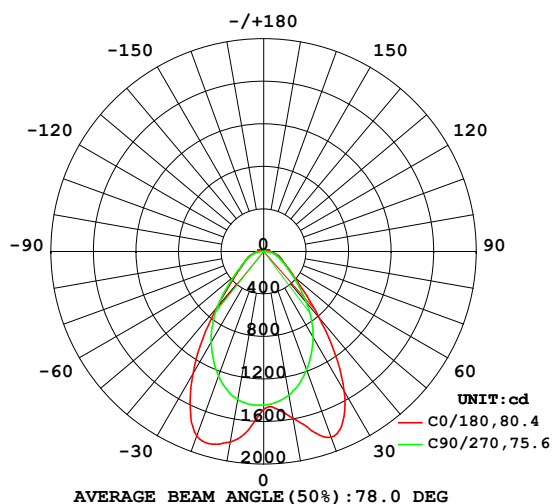


## LUMINAIRE PHOTOMETRIC TEST REPORT

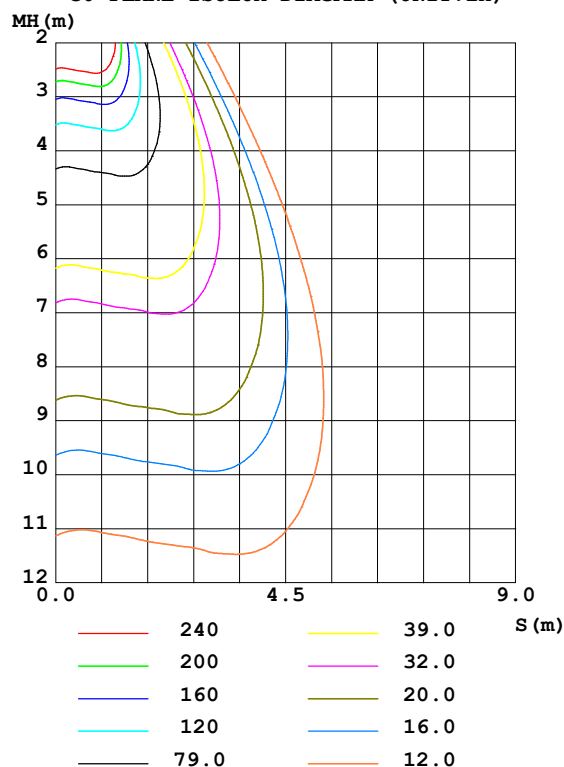
Test:U:223.06V I:0.0916A P:19.440W PF:0.9517 Freq:49.96Hz Lamp Flux:3102.82x1 lm		
NAME: LED Linear Lighting System	TYPE:	WEIGHT:2kg
SPEC.:	DIM.: 600*60*45mm	SERIAL No.:
MFR.: CoreShine	SUR.:600*60mm	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 159.61 lm/W			
MODEL	CTLS-0620-40DS-04WH	I <sub>max</sub> (cd)	1879	S/MH (C0/180)	1.12
NOMINAL POWER (W)	20	LOR (%)	100.0	S/MH (C90/270)	1.06
RATED VOLTAGE (V)	230.0	TOTAL FLUX (lm)	3102.8	η UP, DN (C0-180)	1.9, 47.5
NOMINAL FLUX (lm)	3102.82	CIE CLASS	DIRECT	η UP, DN (C180-360)	1.9, 48.7
LAMPS INSIDE	1	η up (%)	3.8	CIBSE SHR NOM	1.00
TEST VOLTAGE (V)	230.0	η down (%)	96.2	CIBSE SHR MAX	1.05

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:

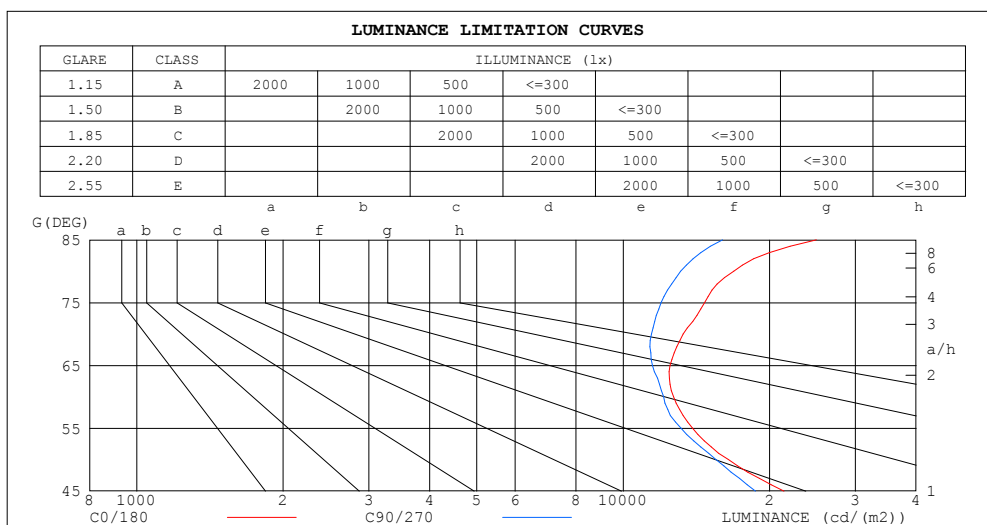
$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	1594	1496	1373	1649	1818	1717	1413	1487	0- 10	146.0	146.0	4.71,4.71
20	1858	1549	1182	1669	1844	1759	1245	1573	10- 20	451.5	597.5	19.3,19.3
30	1515	1389	931.1	1405	1335	1484	989.0	1503	20- 30	683.2	1281	41.3,41.3
40	813.4	820.1	626.4	788.3	681.1	845.2	673.7	929.8	30- 40	653.2	1934	62.3,62.3
50	380.6	392.2	358.6	371.7	341.7	399.2	371.6	422.2	40- 50	431.7	2366	76.2,76.2
60	228.4	214.9	218.0	203.2	214.0	214.3	217.4	225.5	50- 60	261.2	2627	84.7,84.7
70	163.7	134.5	140.7	127.3	154.7	131.3	141.1	138.3	60- 70	175.8	2803	90.3,90.3
80	105.6	79.69	82.09	73.11	89.62	75.16	80.42	80.64	70- 80	118.6	2921	94.1,94.1
90	53.59	39.31	17.96	34.45	49.03	34.65	15.68	39.21	80- 90	64.09	2985	96.2,96.2
100	39.28	33.29	1.454	27.34	43.34	27.16	1.376	30.73	90-100	30.41	3016	97.2,97.2
110	40.93	23.92	2.239	21.91	37.47	21.61	2.025	24.15	100-110	27.07	3043	98.1,98.1
120	29.07	19.35	3.270	17.41	26.37	17.43	2.923	18.69	110-120	19.42	3062	98.7,98.7
130	25.02	16.97	4.429	15.00	22.36	14.53	3.983	15.05	120-130	14.37	3077	99.2,99.2
140	21.11	14.95	5.602	13.76	18.78	13.33	5.093	14.19	130-140	11.02	3088	99.5,99.5
150	16.92	11.63	6.558	11.14	14.53	10.60	6.103	10.84	140-150	7.588	3095	99.8,99.8
160	12.72	8.676	7.307	8.415	10.62	7.979	6.942	8.241	150-160	4.605	3100	99.9,99.9
170	8.743	8.018	7.835	7.777	8.367	7.678	7.645	7.728	160-170	2.334	3102	100,100
180	8.712	8.288	8.118	8.226	8.720	8.292	8.134	8.230	170-180	0.7682	3103	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:223.06V I:0.0916A P:19.440W PF:0.9517 Freq:49.96Hz Lamp Flux:3102.82x1 lm		
NAME: LED Linear Lighting System	TYPE:	WEIGHT:2kg
SPEC.:	DIM.: 600*60*45mm	SERIAL No.:
MFR.: CoreShine	SUR.:600*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:

## WEC AND CCEC

Test:U:223.06V I:0.0916A P:19.440W PF:0.9517 Freq:49.96Hz Lamp Flux:3102.82x1 lm		
NAME: LED Linear Lighting System	TYPE:	WEIGHT:2kg
SPEC.:	DIM.: 600*60*45mm	SERIAL No.:
MFR.: CoreShine	SUR.:600*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	.264	.150	.047	.256	.146	.046	.240	.138	.044	.226	.131	.042	.214	.124	.040		
2.0	.245	.134	.041	.238	.131	.040	.225	.125	.039	.213	.119	.037	.201	.114	.036		
3.0	.228	.121	.036	.222	.119	.036	.210	.114	.035	.199	.109	.033	.189	.105	.032		
4.0	.212	.110	.032	.207	.108	.032	.196	.104	.031	.187	.100	.030	.178	.097	.029		
5.0	.198	.101	.029	.193	.099	.029	.184	.096	.028	.175	.093	.028	.167	.089	.027		
6.0	.186	.093	.027	.181	.092	.026	.173	.089	.026	.165	.086	.025	.158	.083	.025		
7.0	.174	.086	.024	.171	.085	.024	.163	.082	.024	.156	.080	.023	.149	.078	.023		
8.0	.164	.080	.023	.161	.079	.022	.154	.077	.022	.148	.075	.022	.142	.073	.021		
9.0	.155	.075	.021	.152	.074	.021	.146	.072	.020	.140	.070	.020	.135	.068	.020		
10.0	.147	.071	.020	.144	.070	.019	.139	.068	.019	.133	.066	.019	.128	.065	.019		

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	.219	.219	.219	.187	.187	.187	.128	.128	.128	.074	.074	.074	.024	.024	.024	
1.0	.206	.186	.167	.176	.159	.144	.121	.110	.099	.069	.063	.058	.022	.020	.019	
2.0	.195	.161	.133	.167	.139	.115	.115	.096	.080	.066	.056	.047	.021	.018	.015	
3.0	.186	.143	.110	.159	.124	.095	.109	.086	.067	.063	.050	.039	.020	.016	.013	
4.0	.177	.130	.093	.152	.112	.081	.105	.078	.057	.061	.046	.034	.019	.015	.011	
5.0	.170	.119	.082	.146	.103	.071	.100	.072	.050	.058	.042	.030	.019	.014	.010	
6.0	.163	.110	.073	.140	.096	.064	.096	.067	.045	.056	.039	.027	.018	.013	.009	
7.0	.156	.103	.066	.134	.090	.058	.093	.063	.041	.054	.037	.024	.017	.012	.008	
8.0	.150	.097	.061	.129	.085	.053	.089	.059	.038	.052	.035	.023	.017	.011	.007	
9.0	.145	.093	.057	.125	.080	.050	.086	.056	.036	.050	.033	.021	.016	.011	.007	
10.0	.139	.088	.054	.120	.077	.047	.083	.054	.034	.049	.032	.020	.016	.010	.007	

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:223.06V I:0.0916A P:19.440W PF:0.9517 Freq:49.96Hz Lamp Flux:3102.82x1 lm											
NAME: LED Linear Lighting System					TYPE:			WEIGHT:2kg			
SPEC.:					DIM.: 600*60*45mm			SERIAL No.:			
MFR.: CoreShine					SUR.:600*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		17.0	18.2	17.3	18.5	18.7	16.6	17.9	16.9	18.1	18.4
	3H	18.0	19.2	18.3	19.5	19.7	17.6	18.8	18.0	19.1	19.4
	4H	18.7	19.8	19.0	20.1	20.4	18.2	19.3	18.5	19.6	19.9
	6H	19.4	20.5	19.8	20.8	21.1	18.8	19.8	19.1	20.1	20.5
	8H	19.8	20.8	20.2	21.1	21.5	19.0	20.0	19.4	20.4	20.7
	12H	20.3	21.2	20.7	21.6	21.9	19.3	20.2	19.7	20.6	21.0
4H	2H	17.2	18.3	17.6	18.6	18.9	16.9	18.0	17.3	18.3	18.6
	3H	18.5	19.4	18.9	19.8	20.2	18.2	19.1	18.6	19.5	19.8
	4H	19.3	20.2	19.8	20.6	21.0	18.9	19.8	19.3	20.1	20.5
	6H	20.3	21.0	20.7	21.5	21.9	19.7	20.4	20.1	20.8	21.3
	8H	20.8	21.5	21.3	21.9	22.4	20.0	20.8	20.5	21.2	21.6
	12H	21.4	22.0	21.8	22.5	22.9	20.4	21.1	20.9	21.5	22.0
8H	4H	19.6	20.3	20.0	20.7	21.2	19.2	19.9	19.6	20.3	20.8
	6H	20.7	21.3	21.2	21.8	22.3	20.2	20.7	20.6	21.2	21.7
	8H	21.4	21.9	21.9	22.4	22.9	20.7	21.2	21.2	21.7	22.2
	12H	22.2	22.6	22.7	23.1	23.7	21.2	21.6	21.7	22.1	22.7
12H	4H	19.6	20.2	20.1	20.7	21.2	19.2	19.9	19.7	20.3	20.8
	6H	20.8	21.3	21.3	21.8	22.3	20.3	20.8	20.8	21.3	21.8
	8H	21.5	22.0	22.1	22.5	23.0	20.9	21.3	21.4	21.8	22.4
Variations with the observer position at spacings:											
S = 1.0H		+ 0.4 / - 0.4					+ 0.4 / - 0.4				
1.5H		+ 0.5 / - 0.3					+ 0.2 / - 0.3				
2.0H		+ 0.5 / - 0.3					+ 0.5 / - 0.4				

CIE Pub.117, 3103 lm Total Lamp Luminous Flux Correct ( $8\log(F/F_0) = 3.9$ )

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:223.06V I:0.0916A P:19.440W PF:0.9517 Freq:49.96Hz Lamp Flux:3102.82x1 lm		
NAME: LED Linear Lighting System	TYPE:	WEIGHT:2kg
SPEC.:	DIM.: 600*60*45mm	SERIAL No.:
MFR.: CoreShine	SUR.:600*60mm	Shielding Angle:

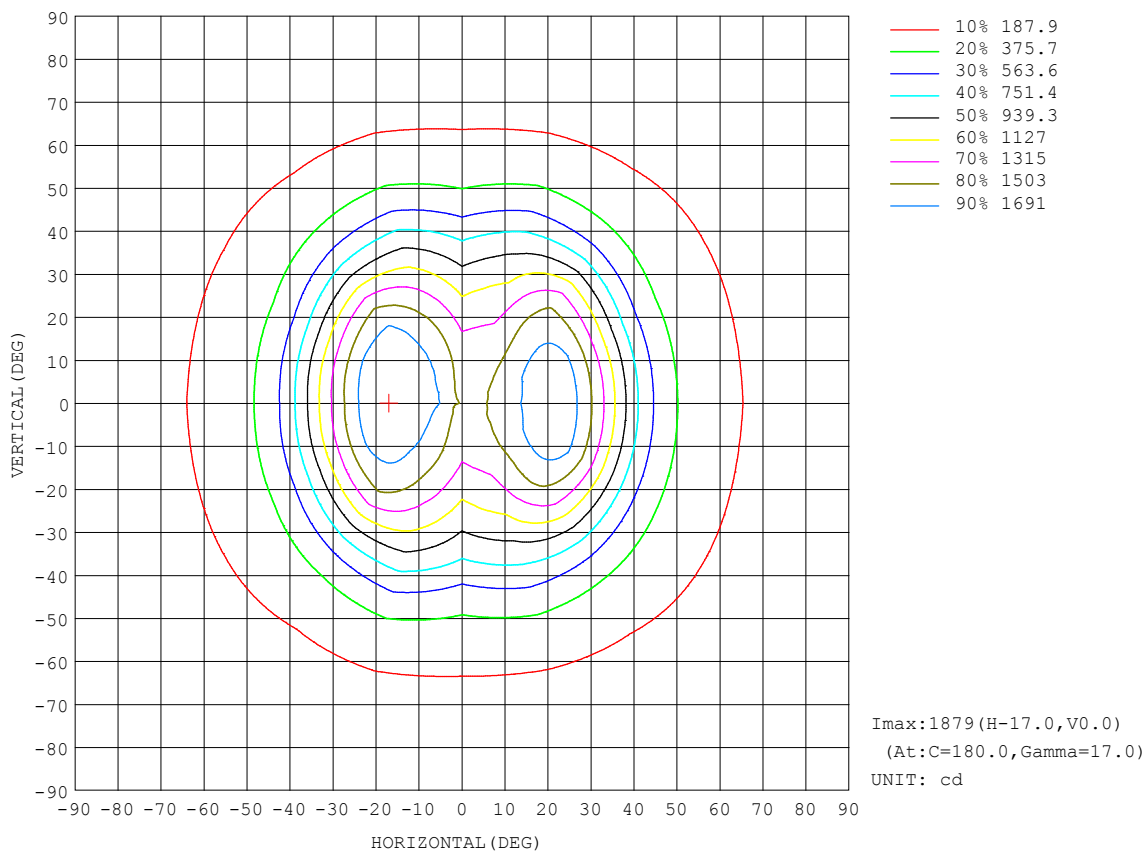
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS (PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	68	59	53	67	58	53	66	58	53	47
0.80	77	68	62	76	67	62	74	67	61	56
1.00	84	75	69	83	75	69	81	75	68	62
1.25	90	81	76	89	81	75	86	79	74	68
1.50	94	86	80	92	85	80	89	83	79	72
2.00	99	92	87	97	91	86	94	88	84	77
2.50	102	96	91	100	94	90	96	91	87	79
3.00	105	99	94	102	97	93	98	94	91	82
4.00	108	103	99	105	101	98	101	97	94	85
5.00	110	106	102	107	103	100	102	99	97	87
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:223.06V I:0.0916A P:19.440W PF:0.9517 Freq:49.96Hz Lamp Flux:3102.82x1 lm		
NAME: LED Linear Lighting System	TYPE:	WEIGHT:2kg
SPEC.:	DIM.: 600*60*45mm	SERIAL No.:
MFR.: CoreShine	SUR.:600*60mm	Shielding Angle:

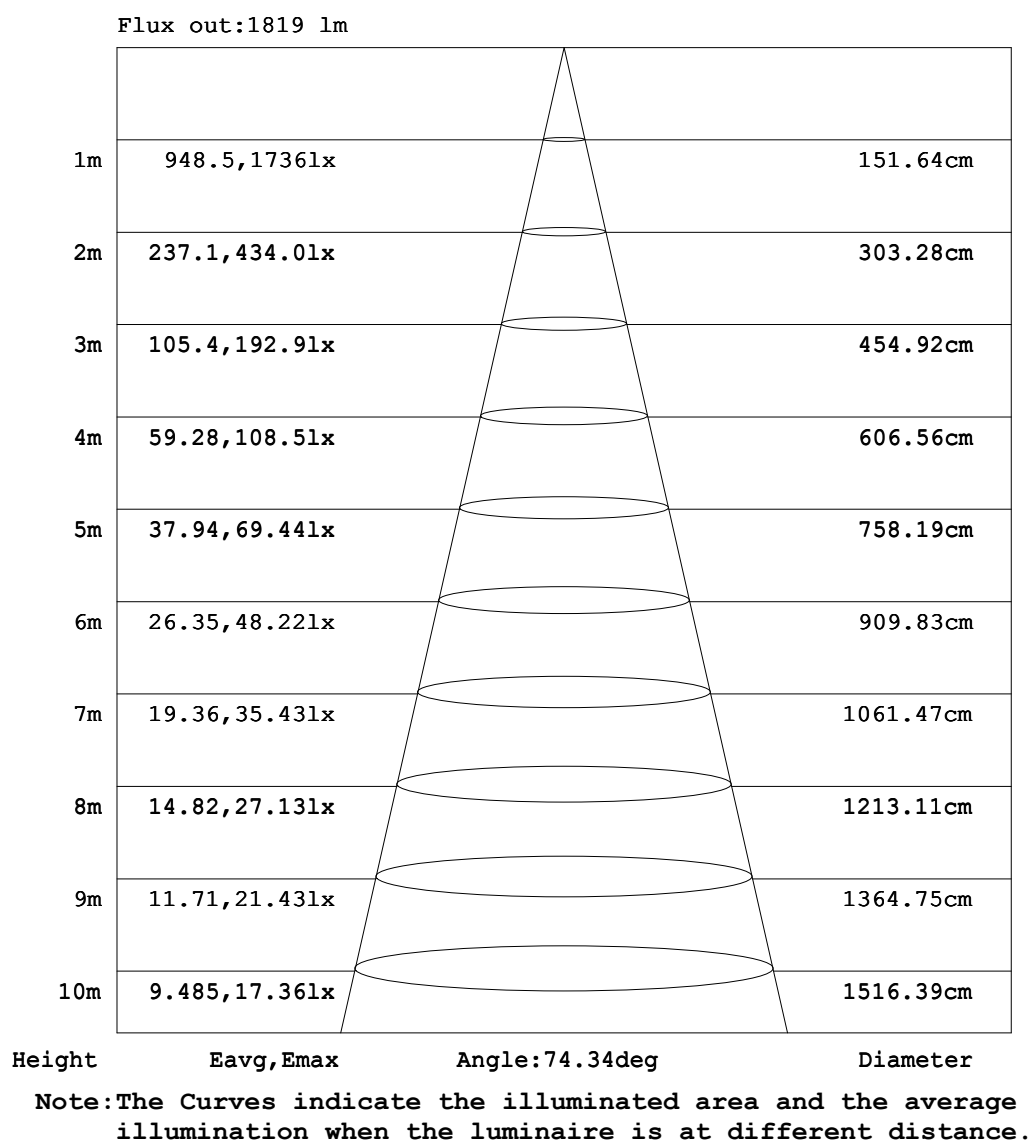


C Range: 0 - 360DEG  
C Interval: 22.5DEG  
Test Speed: HIGH  
Temperature:25.3DEG  
Operators:zcx  
Test Date:2020-07-03

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:223.06V I:0.0916A P:19.440W PF:0.9517 Freq:49.96Hz Lamp Flux:3102.82x1 lm		
NAME: LED Linear Lighting System	TYPE:	WEIGHT:2kg
SPEC.:	DIM.: 600*60*45mm	SERIAL No.:
MFR.: CoreShine	SUR.:600*60mm	Shielding Angle:

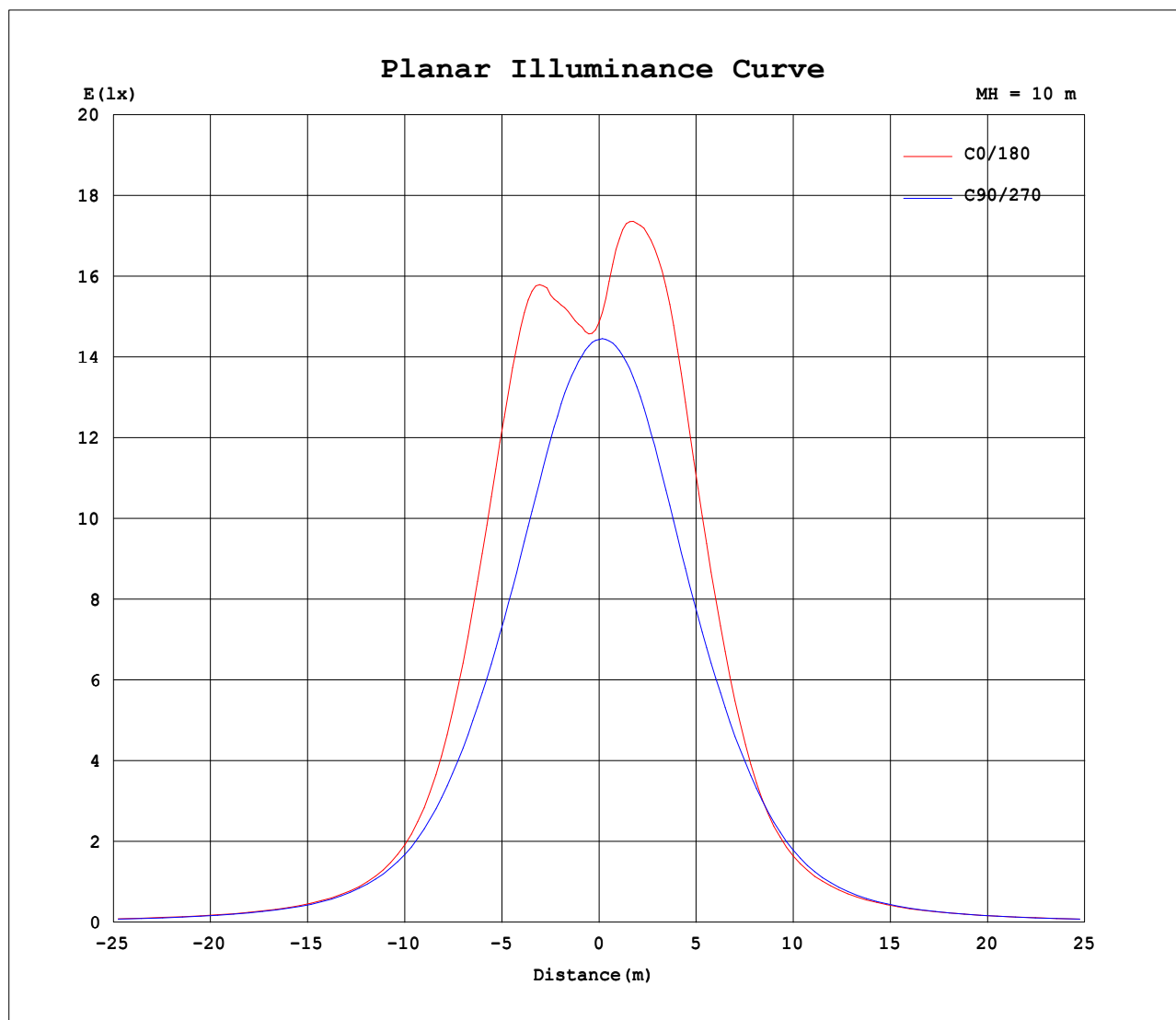


C Range: 0 - 360DEG  
 C Interval: 22.5DEG  
 Test Speed: HIGH  
 Temperature:25.3DEG  
 Operators:zcx  
 Test Date:2020-07-03

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:



## 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:223.06V I:0.0916A P:19.440W PF:0.9517 Freq:49.96Hz Lamp Flux:3102.82x1 lm		
NAME: LED Linear Lighting System	TYPE:	WEIGHT:2kg
SPEC.:	DIM.: 600*60*45mm	SERIAL No.:
MFR.: CoreShine	SUR.: 600*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	1487	1488	1470	1457	1444	1443	1451	1455	1487	1488	1470	1457	1444	1443	1451	1455			
5	1491	1485	1452	1415	1420	1474	1550	1609	1686	1661	1593	1511	1443	1429	1444	1473			
10	1594	1571	1496	1391	1373	1500	1649	1735	1818	1794	1717	1568	1413	1415	1487	1571			
15	1744	1679	1526	1353	1291	1489	1678	1790	1875	1851	1761	1578	1345	1380	1521	1688			
20	1858	1804	1549	1283	1182	1428	1669	1796	1844	1846	1759	1526	1245	1314	1573	1805			
25	1763	1771	1529	1194	1063	1319	1606	1652	1633	1692	1682	1417	1122	1230	1597	1758			
30	1515	1536	1389	1064	931	1179	1405	1354	1335	1391	1484	1262	989	1126	1503	1522			
35	1169	1181	1118	911	786	1007	1095	1015	999	1054	1166	1077	838	997	1260	1178			
40	813	823	820	739	626	807	788	702	681	724	845	864	674	828	930	820			
45	545	552	571	565	476	605	542	476	465	485	584	643	506	635	631	545			
50	381	381	392	411	359	435	372	341	342	343	399	455	372	453	422	373			
55	287	280	282	302	271	315	268	260	263	262	286	327	278	325	301	276			
60	228	219	215	228	218	232	203	206	214	208	214	242	217	242	225	220			
65	190	176	168	177	175	180	160	170	181	171	167	184	176	184	174	180			
70	164	143	135	140	141	140	127	141	155	140	131	143	141	141	138	148			
75	137	117	106	111	112	109	98.4	111	120	111	102	110	110	109	108	121			
80	106	92.2	79.7	83.0	82.1	79.8	73.1	83.9	89.6	83.5	75.2	80.1	80.4	81.2	80.6	94.7			
85	78.2	68.6	57.7	53.9	50.2	50.7	51.0	63.6	68.9	63.0	52.2	49.8	48.3	51.9	58.0	69.7			
90	53.6	48.3	39.3	27.7	18.0	24.6	34.5	42.4	49.0	41.0	34.7	23.1	15.7	26.7	39.2	47.8			
95	39.9	33.6	34.6	22.4	1.32	20.1	34.2	35.5	45.4	35.2	32.8	17.2	1.39	19.2	32.5	32.5			
100	39.3	34.0	33.3	15.4	1.45	14.8	27.3	35.2	43.3	34.4	27.2	12.7	1.38	13.9	30.7	31.7			
105	47.0	41.8	26.3	10.3	1.81	10.2	29.1	46.6	55.8	44.7	27.1	9.37	1.67	9.76	25.8	40.1			
110	40.9	35.6	23.9	12.2	2.24	10.5	21.9	33.1	37.5	32.8	21.6	10.4	2.03	12.1	24.1	35.3			
115	35.1	31.3	21.5	11.0	2.73	9.55	19.0	28.7	31.8	27.7	18.6	9.11	2.45	10.2	21.4	31.0			
120	29.1	26.6	19.4	10.7	3.27	9.40	17.4	24.4	26.4	24.1	17.4	9.06	2.92	10.1	18.7	26.2			
125	26.0	24.3	18.1	10.3	3.84	9.21	16.0	22.2	23.9	22.1	15.8	8.68	3.44	10.2	17.0	24.0			
130	25.0	23.2	17.0	9.95	4.43	8.89	15.0	20.7	22.4	20.5	14.5	8.25	3.98	9.81	15.0	22.9			
135	23.4	21.6	16.3	9.22	5.03	8.51	14.8	19.0	20.8	18.6	14.2	7.80	4.55	9.09	15.5	21.3			
140	21.1	19.7	15.0	8.25	5.60	7.88	13.8	17.1	18.8	16.6	13.3	7.20	5.09	8.06	14.2	18.6			
145	18.9	18.4	13.6	7.60	6.10	7.44	12.8	15.0	17.0	14.4	12.3	6.86	5.62	7.30	12.8	16.8			
150	16.9	16.4	11.6	7.38	6.56	7.24	11.1	14.2	14.5	13.7	10.6	6.72	6.10	6.99	10.8	14.8			
155	15.6	13.7	9.78	7.37	6.96	7.20	9.50	12.3	12.9	11.7	8.98	6.75	6.55	6.95	9.15	12.5			
160	12.7	10.9	8.68	7.48	7.31	7.30	8.41	10.1	10.6	9.60	7.98	6.92	6.94	7.07	8.24	10.1			
165	10.1	9.07	8.16	7.60	7.59	7.52	7.88	8.55	8.95	8.28	7.55	7.17	7.30	7.28	7.83	8.72			
170	8.74	8.30	8.02	7.89	7.83	7.79	7.78	7.95	8.37	7.86	7.68	7.56	7.64	7.66	7.73	8.11			
175	8.36	8.31	8.18	8.10	8.03	8.04	8.03	8.11	8.55	8.16	8.02	7.93	7.95	7.96	8.07	8.16			
180	8.71	8.47	8.29	8.18	8.12	8.14	8.23	8.35	8.72	8.44	8.29	8.16	8.13	8.16	8.23	8.35			

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: