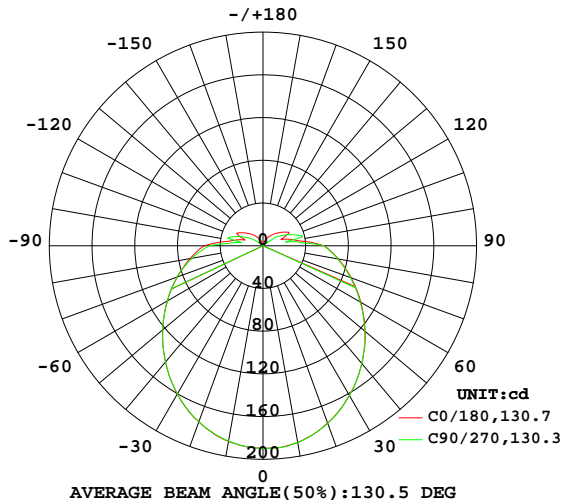


LUMINAIRE PHOTOMETRIC TEST REPORT

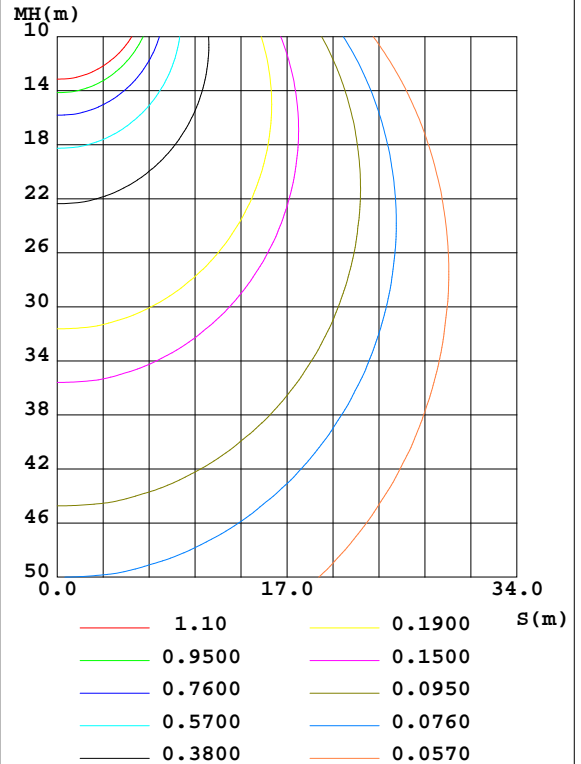
Test:U:220.08V I:0.4384A P:49.511W PF:0.5132 Freq:50.00Hz Lamp Flux:800.328x1 lm		
NAME: Triplepar	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: Astera LED Technology GmbH	SUR.:	Shielding Angle:N/A

DATA OF LAMP		PHOTOMETRIC DATA Eff: 16.16 lm/W			
MODEL	AX5 (DDM 30X30°)	Imax(cd)	189.8	S/MH(C0/180)	1.26
NOMINAL POWER(W)	45	LOR(%)	100.0	S/MH(C90/270)	1.26
RATED VOLTAGE(V)	90-264	TOTAL FLUX(lm)	800.33	η UP,DN(C0-180)	6.9,43.8
NOMINAL FLUX(lm)	800.328	CIE CLASS	SEMI-D.	η UP,DN(C180-360)	6.4,43.0
LAMPS INSIDE	1	η up(%)	13.3	CIBSE SHR NOM	1.50
TEST VOLTAGE(V)	220	η down(%)	86.7	CIBSE SHR MAX	1.50

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-12-09

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:56.4%
 Test Distance:26.000m [K=1.3890]
 Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	187.0	187.0	187.1	186.9	186.0	185.7	185.7	185.7	0- 10	17.96	17.96	2.24,2.24
20	176.8	177.1	177.0	176.7	175.6	175.3	175.4	175.6	10- 20	51.39	69.35	8.66,8.66
30	161.9	162.2	162.0	161.7	160.4	160.2	160.3	160.6	20- 30	78.04	147.4	18.4,18.4
40	144.0	144.3	143.9	143.5	142.0	141.7	142.0	142.5	30- 40	95.44	242.8	30.3,30.3
50	124.8	125.5	124.4	124.2	122.6	122.1	122.6	123.2	40- 50	103.1	346.0	43.2,43.2
60	105.7	106.3	105.0	105.2	103.2	102.7	103.6	104.5	50- 60	102.2	448.1	56.56
70	87.78	88.57	86.99	87.39	85.49	84.99	85.74	86.76	60- 70	94.74	542.9	67.8,67.8
80	71.59	72.23	71.07	71.29	69.20	69.18	67.50	70.69	70- 80	82.77	625.6	78.2,78.2
90	56.67	56.79	56.67	55.65	54.37	54.17	50.26	55.54	80- 90	68.37	694.0	86.7,86.7
100	30.73	25.64	21.48	23.33	28.82	23.26	22.85	24.69	90-100	41.72	735.7	91.9,91.9
110	17.91	21.80	30.28	24.59	19.86	24.13	25.23	23.59	100-110	25.11	760.8	95.1,95.1
120	25.60	13.11	18.76	13.06	24.40	12.71	14.33	11.71	110-120	18.46	779.3	97.4,97.4
130	19.01	6.817	5.913	6.682	18.11	5.632	4.390	5.642	120-130	10.65	790.0	98.7,98.7
140	13.61	4.784	2.273	4.255	12.72	3.998	0.7864	4.181	130-140	5.567	795.5	99.4,99.4
150	9.067	4.559	0.6913	4.036	8.183	3.835	0.6346	3.296	140-150	3.055	798.6	99.8,99.8
160	5.047	1.486	0.2869	0.2943	4.304	2.106	0.4829	1.101	150-160	1.474	800.1	100,100
170	0.5558	0.3553	0.2474	0.2507	0.2837	0.7203	0.2930	0.3869	160-170	0.2443	800.3	100,100
180	0.2193	0.2927	0.2198	0.2201	0.2193	0.2195	0.2198	0.2201	170-180	0.0283	800.3	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 294 lm

%lum = 36.7%

%lamp = 36.7%

Conical surface Flux(120deg): 448.14 lm

%lum = 56.0%

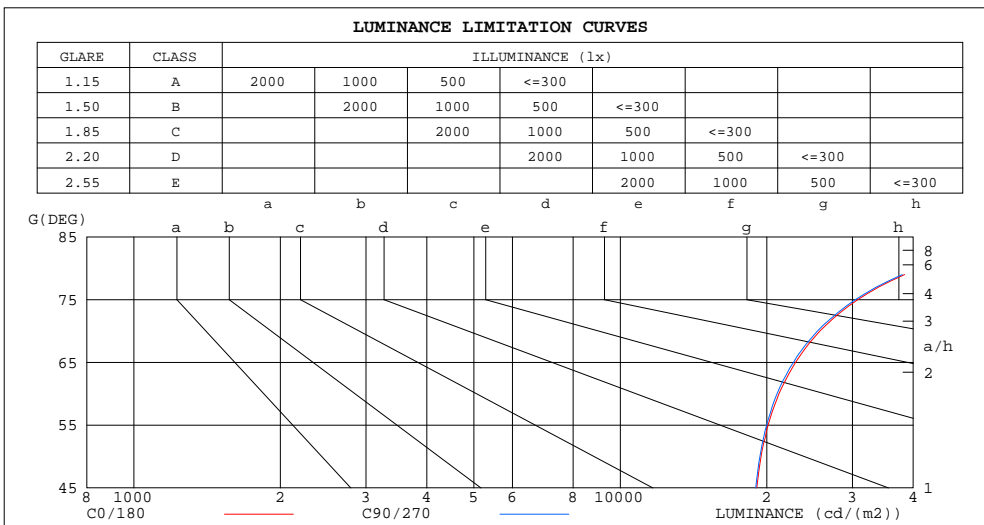
%lamp = 56.0%

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.5DEG
Operators:William
Test Date:2019-12-09

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
Humidity:56.4%
Test Distance:26.000m [K=1.3890]
Remarks:

LUMINANCE LIMITATION CURVES

Test:U:220.08V I:0.4384A P:49.511W PF:0.5132 Freq:50.00Hz Lamp Flux:800.328x1 lm		
NAME: Triplepar	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: Astera LED Technology GmbH	SUR.:	Shielding Angle:N/A



LUMINANCE cd/(m2)		
G(DEG)	C0/180	C90/270
85	73889	73071
80	41325	40930
75	30778	30446
70	25727	25435
65	22929	22695
60	21194	20997
55	20122	19985
50	19467	19357
45	19079	18980

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-12-09

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:56.4%
 Test Distance:26.000m [K=1.3890]
 Remarks:

WEC AND CCEC

Test:U:220.08V I:0.4384A P:49.511W PF:0.5132 Freq:50.00Hz Lamp Flux:800.328x1 lm									
NAME: Triplepar					TYPE:LED			WEIGHT:N/A	
SPEC.:N/A					DIM.:			SERIAL No.:N/A	
MFR.: Astera LED Technology GmbH					SUR.:			Shielding Angle:N/A	

pcc	80%			70%			50%			30%			10%			0	
p _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0	
p _{fc}	20%			20%			20%			20%			20%			0	
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)										
0.0																	
1.0	.400	.227	.072	.388	.221	.070	.367	.211	.067	.347	.200	.064	.329	.191	.062		
2.0	.342	.188	.058	.332	.183	.056	.313	.174	.054	.295	.166	.052	.279	.158	.050		
3.0	.302	.161	.048	.293	.157	.047	.276	.150	.045	.260	.143	.044	.245	.136	.042		
4.0	.271	.141	.041	.263	.138	.041	.247	.131	.039	.233	.125	.038	.220	.119	.036		
5.0	.246	.125	.036	.239	.122	.036	.224	.117	.034	.211	.112	.033	.199	.106	.032		
6.0	.225	.113	.032	.218	.110	.032	.205	.105	.031	.194	.101	.030	.182	.096	.029		
7.0	.207	.102	.029	.201	.100	.029	.189	.096	.028	.179	.092	.027	.168	.087	.026		
8.0	.192	.094	.026	.186	.092	.026	.176	.088	.025	.166	.084	.024	.156	.080	.023		
9.0	.179	.086	.024	.174	.085	.024	.164	.081	.023	.155	.078	.022	.146	.074	.021		
10.0	.167	.080	.022	.163	.079	.022	.154	.075	.021	.145	.072	.020	.137	.069	.020		

pcc	80%			70%			50%			30%			10%			0
p _w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
p _{fc}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio						Ceiling Cavity Exitance Coefficients(CCEC)									
0.0	.292	.292	.292	.249	.249	.249	.170	.170	.170	.098	.098	.098	.031	.031	.031	
1.0	.289	.257	.229	.247	.221	.197	.169	.152	.136	.097	.088	.079	.031	.028	.026	
2.0	.282	.234	.195	.241	.202	.168	.165	.140	.117	.095	.081	.069	.031	.026	.022	
3.0	.274	.218	.173	.235	.188	.150	.161	.131	.105	.093	.076	.062	.030	.025	.020	
4.0	.266	.205	.159	.228	.177	.138	.157	.124	.097	.091	.072	.057	.029	.024	.019	
5.0	.258	.195	.149	.222	.169	.130	.153	.118	.091	.088	.069	.054	.029	.023	.018	
6.0	.251	.187	.142	.215	.162	.124	.149	.114	.087	.086	.067	.052	.028	.022	.017	
7.0	.243	.181	.137	.209	.157	.119	.145	.110	.084	.084	.065	.050	.027	.021	.017	
8.0	.236	.175	.133	.204	.152	.116	.141	.107	.082	.082	.063	.049	.027	.021	.016	
9.0	.230	.170	.130	.198	.148	.113	.137	.104	.080	.080	.061	.048	.026	.020	.016	
10.0	.224	.166	.127	.193	.144	.111	.134	.101	.079	.078	.060	.047	.025	.020	.016	

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-12-09

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:56.4%
 Test Distance:26.000m [K=1.3890]
 Remarks:

UGR(Unified Glare Rating) Table

Test:U:220.08V I:0.4384A P:49.511W PF:0.5132 Freq:50.00Hz Lamp Flux:800.328x1 lm										
NAME: Triplepar					TYPE:LED			WEIGHT:N/A		
SPEC.:N/A					DIM.:			SERIAL No.:N/A		
MFR.: Astera LED Technology GmbH					SUR.:			Shielding Angle:N/A		

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	22.5	23.9	22.9	24.4	24.8	22.4	23.9	22.9	24.3	24.8
3H	24.9	26.2	25.3	26.7	27.2	24.8	26.1	25.3	26.6	27.1
4H	26.2	27.4	26.7	27.9	28.5	26.1	27.4	26.6	27.9	28.4
6H	27.6	28.8	28.1	29.3	29.9	27.5	28.7	28.0	29.2	29.8
8H	28.4	29.6	28.9	30.1	30.7	28.3	29.5	28.9	30.0	30.6
12H	29.3	30.5	29.9	31.0	31.6	29.3	30.4	29.8	30.9	31.5
4H 2H	23.3	24.6	23.8	25.0	25.6	23.2	24.5	23.7	25.0	25.5
3H	25.9	27.0	26.4	27.5	28.1	25.8	26.9	26.4	27.5	28.1
4H	27.4	28.4	27.9	29.0	29.6	27.3	28.3	27.8	28.9	29.5
6H	29.0	29.9	29.6	30.5	31.2	28.9	29.8	29.5	30.4	31.1
8H	29.9	30.8	30.5	31.4	32.0	29.8	30.7	30.4	31.3	32.0
12H	30.9	31.8	31.6	32.4	33.1	30.9	31.7	31.5	32.3	33.0
8H 4H	27.9	28.8	28.5	29.4	30.1	27.9	28.8	28.5	29.4	30.0
6H	29.9	30.6	30.5	31.2	31.9	29.8	30.5	30.4	31.2	31.9
8H	31.0	31.6	31.6	32.3	33.0	30.9	31.6	31.5	32.2	32.9
12H	32.2	32.8	32.9	33.5	34.3	32.2	32.7	32.8	33.4	34.2
12H 4H	28.1	28.9	28.7	29.5	30.2	28.0	28.8	28.6	29.4	30.1
6H	30.1	30.8	30.8	31.4	32.2	30.1	30.7	30.7	31.4	32.1
8H	31.3	31.9	32.0	32.6	33.3	31.3	31.9	31.9	32.5	33.3
Variations with the observer position at spacings:										
S = 1.0H	+ 0.1 / - 0.1					+ 0.1 / - 0.1				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.2 / - 0.4					+ 0.2 / - 0.4				

CIE Pub.117, 800.3 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = -0.8$)

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.5DEG
Operators:William
Test Date:2019-12-09

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
Humidity:56.4%
Test Distance:26.000m [K=1.3890]
Remarks:

UTILIZATION FACTORS TABLE

Test:U:220.08V I:0.4384A P:49.511W PF:0.5132 Freq:50.00Hz Lamp Flux:800.328x1 lm		
NAME: Triplepar	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: Astera LED Technology GmbH	SUR.:	Shielding Angle:N/A

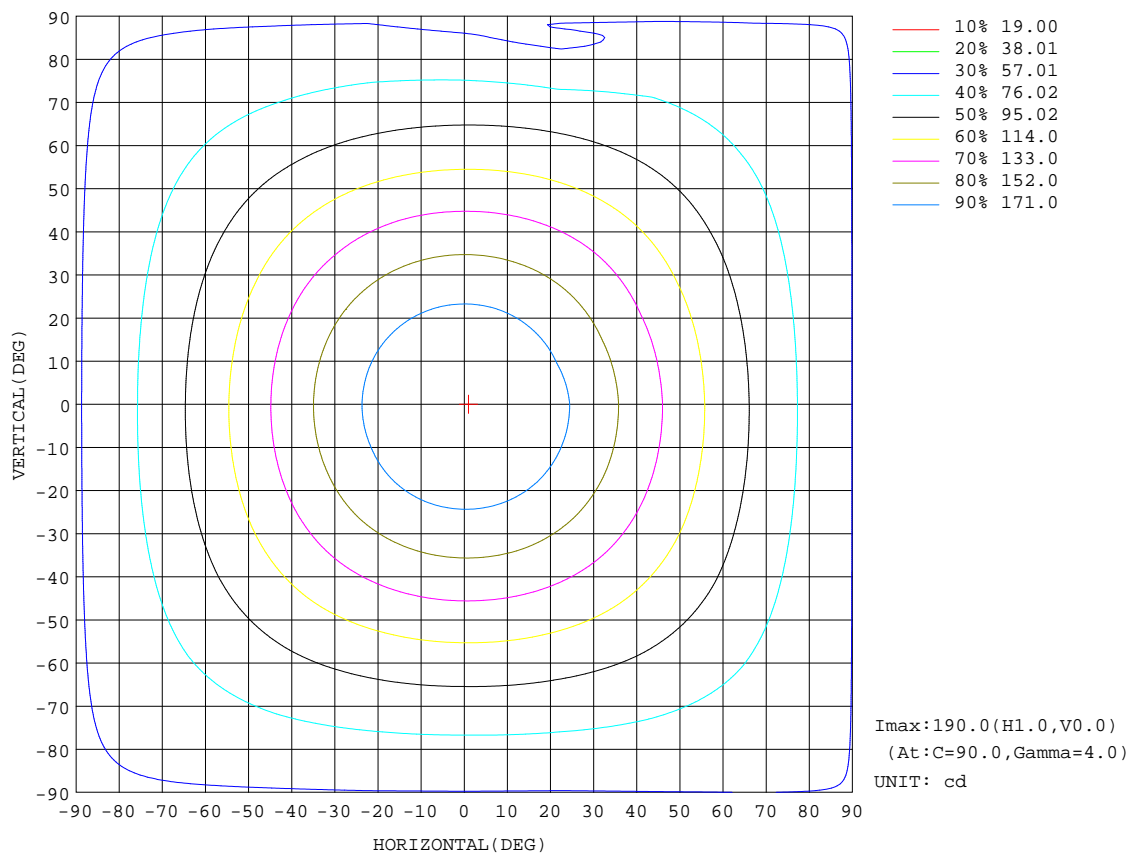
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
k = 0.60	49	37	29	48	36	29	46	35	29	22
0.80	58	45	37	57	44	37	54	43	36	28
1.00	66	53	44	64	52	44	61	53	43	35
1.25	73	60	51	70	59	51	67	57	49	40
1.50	78	65	57	75	64	56	71	61	54	44
2.00	85	74	65	82	72	64	77	68	62	51
2.50	89	79	71	86	77	70	81	73	67	55
3.00	93	84	76	90	81	74	84	77	71	59
4.00	98	90	83	94	87	81	88	82	77	64
5.00	101	94	88	97	91	85	90	85	81	67
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:24.5DEG
 Operators:William
 Test Date:2019-12-09

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:56.4%
 Test Distance:26.000m [K=1.3890]
 Remarks:

ISOCANDELA DIAGRAM

Test:U:220.08V I:0.4384A P:49.511W PF:0.5132 Freq:50.00Hz Lamp Flux:800.328x1 lm		
NAME: Triplepar	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: Astera LED Technology GmbH	SUR.:	Shielding Angle:N/A

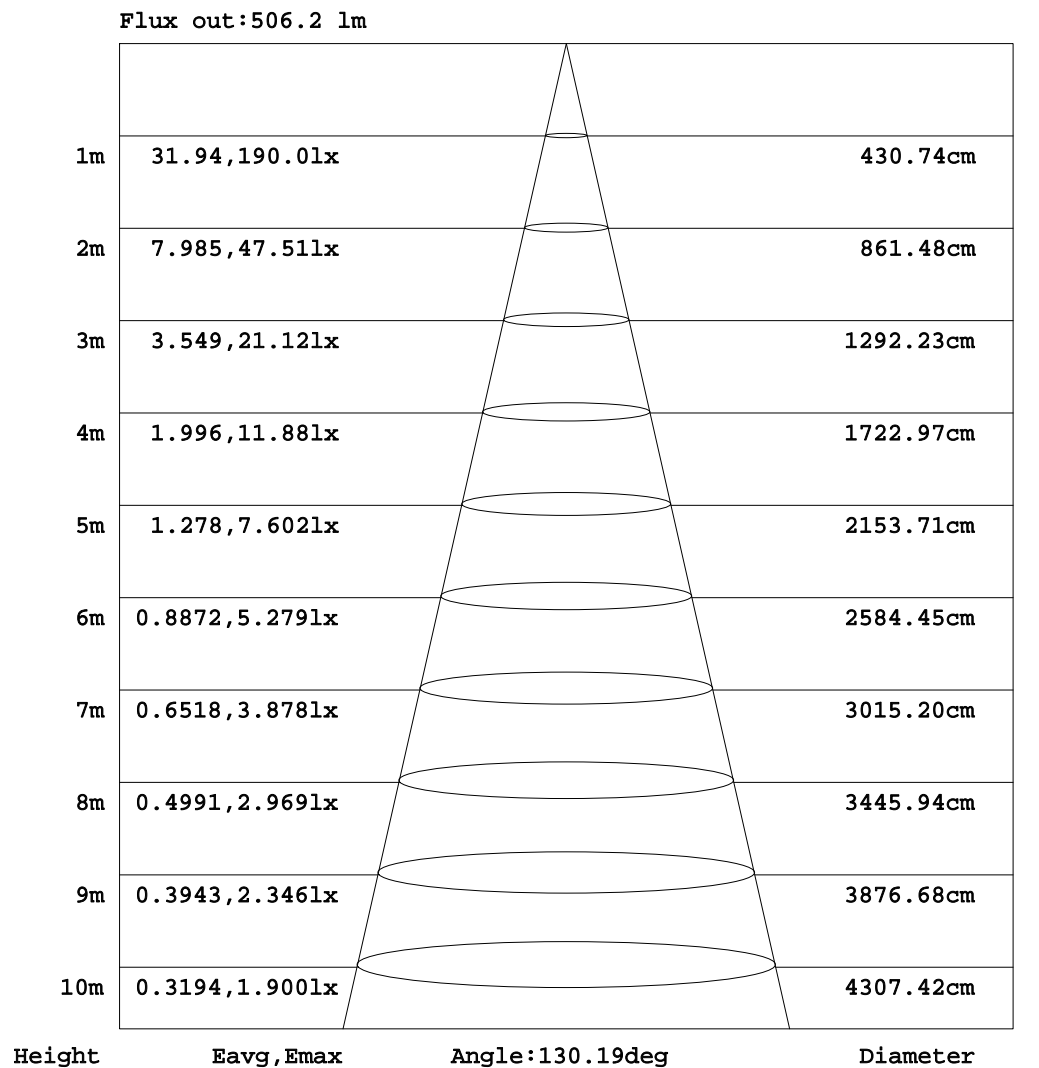


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.5DEG
Operators:William
Test Date:2019-12-09

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
Humidity:56.4%
Test Distance:26.000m [K=1.3890]
Remarks:

AAI Figure

Test:U:220.08V I:0.4384A P:49.511W PF:0.5132 Freq:50.00Hz Lamp Flux:800.328x1 lm		
NAME: Triplepar	TYPE:LED	WEIGHT:N/A
SPEC.:N/A	DIM.:	SERIAL No.:N/A
MFR.: Astera LED Technology GmbH	SUR.:	Shielding Angle:N/A

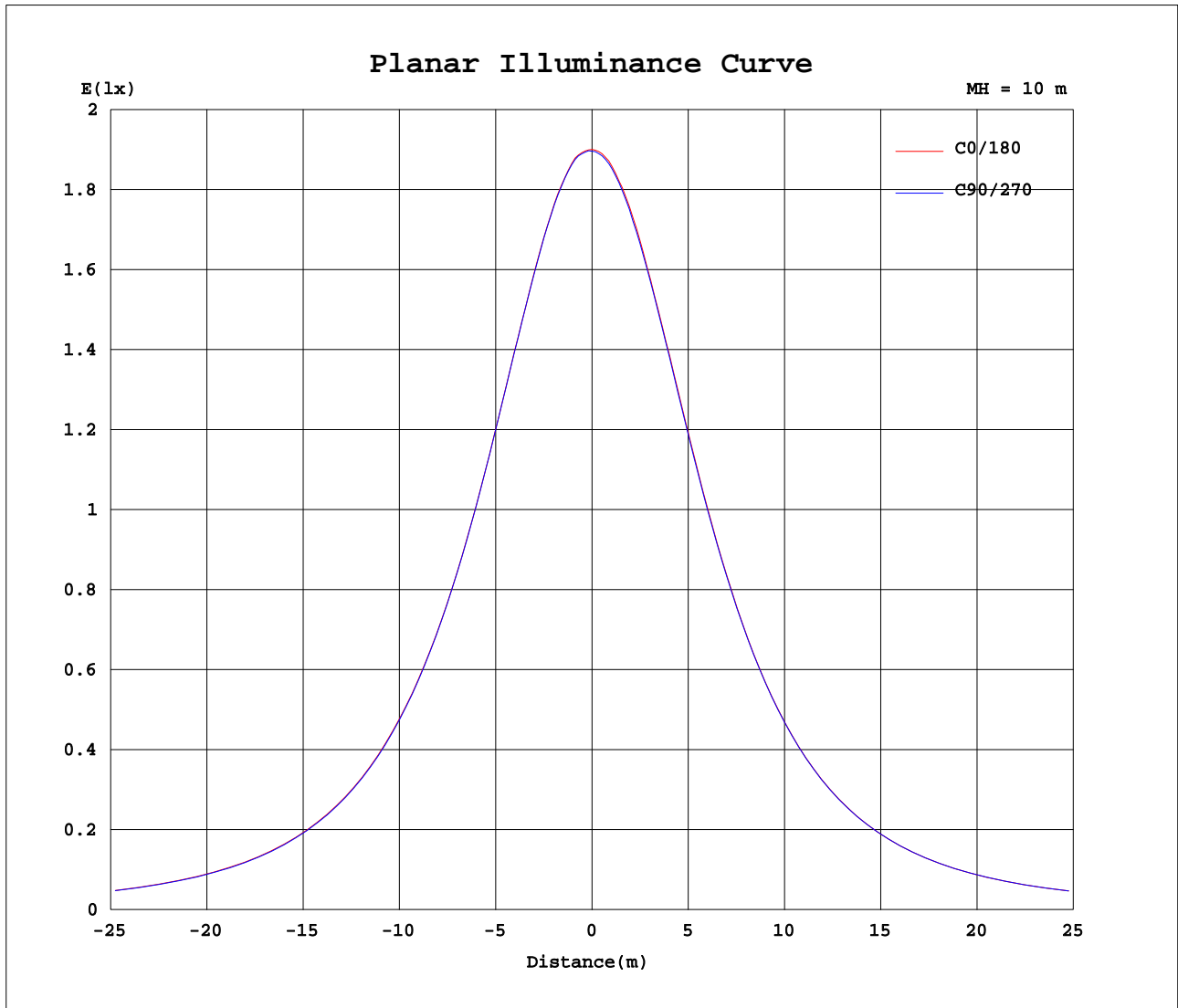


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 22.5DEG
 Test Speed: HIGH
 Temperature:24.5DEG
 Operators:William
 Test Date:2019-12-09

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
 Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
 Humidity:56.4%
 Test Distance:26.000m [K=1.3890]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 24.5DEG
Operators: William
Test Date: 2019-12-09

γ Range: 0 - 180DEG
 γ Interval: 1.0DEG
Test System: EVERFINE GO-R5000_V2 SYSTEM V2.0.366
Humidity: 56.4%
Test Distance: 26.000m [K=1.3890]
Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

Test:U:220.08V I:0.4384A P:49.511W PF:0.5132 Freq:50.00Hz Lamp Flux:800.328x1 lm																		
NAME: Triplepar									TYPE:LED					WEIGHT:N/A				
SPEC.:N/A									DIM.:					SERIAL No.:N/A				
MFR.: Astera LED Technology GmbH									SUR.:					Shielding Angle:N/A				

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	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190			
5	190	190	189	190	190	190	190	189	189	189	188	189	189	189	189	189			
10	187	187	187	187	187	187	187	187	186	186	186	186	186	186	186	186			
15	183	183	183	183	183	183	183	182	182	182	181	181	181	181	181	182			
20	177	177	177	177	177	177	177	177	176	176	175	176	175	176	176	176			
25	170	170	170	170	170	170	170	169	169	169	168	168	168	168	169	169			
30	162	162	162	162	162	162	162	161	160	160	160	160	160	161	161	161			
35	153	154	154	154	153	153	153	152	152	151	151	151	152	152	152	152			
40	144	145	144	144	144	144	144	143	142	142	142	142	142	142	142	143			
45	135	135	135	135	134	134	134	133	132	132	132	132	133	133	133	133			
50	125	126	125	125	124	124	124	124	123	122	122	122	123	123	123	124			
55	115	116	116	115	115	114	114	114	113	112	112	113	113	114	114	114			
60	106	107	106	106	105	105	105	105	103	103	103	103	104	104	104	105			
65	96.7	97.6	97.4	96.4	95.9	96.0	96.1	95.8	94.2	93.9	93.8	94.3	94.5	95.0	95.4	95.8			
70	87.8	88.9	88.6	87.5	87.0	87.2	87.4	87.1	85.5	85.3	85.0	85.4	85.7	84.2	86.8	87.0			
75	79.5	80.6	80.2	79.3	78.8	78.9	79.2	78.9	77.1	77.0	76.8	77.1	76.2	74.7	78.5	78.8			
80	71.6	72.6	72.2	71.3	71.1	71.2	71.3	71.0	69.2	69.3	69.2	69.4	67.5	64.8	70.7	71.1			
85	64.2	64.9	64.5	63.8	63.7	64.0	63.8	63.4	62.1	62.1	61.8	61.9	58.8	52.4	63.4	63.6			
90	56.7	57.0	56.8	56.4	56.7	56.4	55.7	54.9	54.4	54.2	54.2	54.2	50.3	53.9	55.5	56.0			
95	42.7	42.7	40.0	34.6	35.6	34.5	36.3	39.3	40.1	39.4	36.0	31.9	30.6	32.4	37.7	41.9			
100	30.7	28.0	25.6	23.1	21.5	26.5	23.3	24.7	28.8	24.8	23.3	26.9	22.8	28.0	24.7	27.5			
105	24.3	16.4	13.5	35.8	36.6	35.8	18.5	12.2	22.0	12.8	16.9	33.2	31.5	31.5	16.7	16.3			
110	17.9	9.15	21.8	29.3	30.3	29.1	24.6	10.4	19.9	10.3	24.1	26.5	25.2	24.4	23.6	10.7			
115	25.4	12.0	18.2	23.0	24.4	23.0	18.2	12.3	27.4	11.8	17.8	20.2	19.5	18.8	17.1	11.6			
120	25.6	12.0	13.1	17.2	18.8	17.3	13.1	11.2	24.4	11.0	12.7	14.4	14.3	14.2	11.7	12.7			
125	22.2	11.9	9.38	12.5	12.3	12.0	9.25	11.0	21.3	10.5	8.55	9.59	8.27	9.46	7.90	12.7			
130	19.0	11.9	6.82	8.45	5.91	6.33	6.68	10.9	18.1	10.5	5.63	5.18	4.39	5.78	5.64	12.3			
135	16.2	11.9	5.35	4.47	3.97	3.02	5.07	10.9	15.3	10.2	4.08	1.97	2.11	2.42	4.54	11.2			
140	13.6	10.8	4.78	1.98	2.27	1.47	4.26	9.99	12.7	9.36	4.00	0.66	0.79	1.03	4.18	9.84			
145	11.3	9.45	4.67	1.54	0.72	0.46	4.18	8.74	10.3	8.42	3.92	0.29	0.71	0.08	3.81	8.37			
150	9.07	7.91	4.56	0.30	0.69	0.85	4.04	7.42	8.18	7.17	3.83	0.07	0.63	0.81	3.30	6.68			
155	7.02	6.37	4.03	0.28	0.66	1.03	3.01	5.95	6.13	5.69	3.58	0.22	0.56	0.55	1.37	4.77			
160	5.05	4.61	1.49	0.27	0.29	0.29	0.29	3.84	4.30	3.87	2.11	0.73	0.48	0.51	1.10	2.33			
165	1.12	0.53	0.32	0.25	0.27	0.27	0.27	0.61	0.22	0.15	1.13	0.47	0.35	0.40	0.51	0.28			
170	0.56	0.58	0.36	0.24	0.25	0.25	0.25	0.42	0.28	0.18	0.72	0.29	0.29	0.30	0.39	0.25			
175	0.37	0.47	0.36	0.23	0.23	0.23	0.23	0.22	0.24	0.21	0.31	0.24	0.23	0.24	0.27	0.23			
180	0.22	0.44	0.29	0.22	0.22	0.22	0.22	0.15	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22			

C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature:24.5DEG
Operators:William
Test Date:2019-12-09

γ Range: 0 - 180DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-R5000_V2 SYSTEM V2.0.366
Humidity:56.4%
Test Distance:26.000m [K=1.3890]
Remarks: