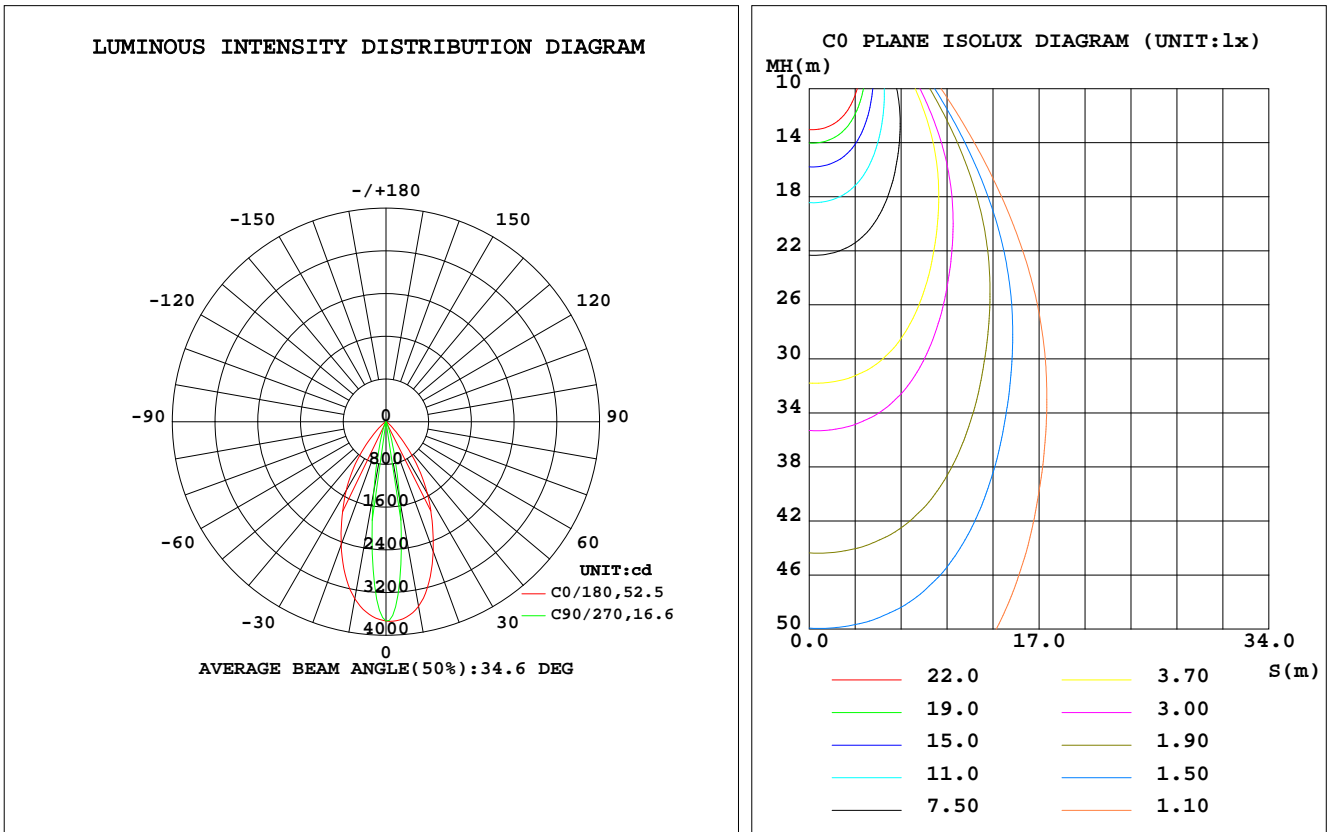


LUMINAIRE PHOTOMETRIC TEST REPORT

Test:U:220.14V I:0.4374A P:49.451W PF:0.5135 Freq:50.01Hz Lamp Flux:1192.84x1 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: 24.12 lm/W
MODEL	AX5 (wallwash)	Imax(cd)	3745	S/MH(C0/180)	0.78	
NOMINAL POWER(W)	45	LOR(%)	100.0	S/MH(C90/270)	0.27	
RATED VOLTAGE(V)	90-264	TOTAL FLUX(lm)	1192.8	η UP,DN(C0-180)	0.1,51.5	
NOMINAL FLUX(lm)	1192.84	CIE CLASS	DIRECT	η UP,DN(C180-360)	0.1,48.3	
LAMPS INSIDE	1	η up(%)	0.2	CIBSE SHR NOM	0.00	
TEST VOLTAGE(V)	220	η down(%)	99.8	CIBSE SHR MAX	1.00	



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	3510	2340	1488	2198	3365	2070	1319	2049	0- 10	279.0	279.0	23.4,23.4
20	2584	587.2	207.4	522.7	2456	496.6	180.6	465.1	10- 20	405.4	684.4	57.4,57.4
30	1552	116.1	49.37	110.2	1495	106.1	46.96	100.3	20- 30	267.4	951.8	79.8,79.8
40	591.4	41.28	24.02	39.98	647.7	39.29	23.01	38.64	30- 40	146.0	1098	92,92
50	106.7	21.95	14.64	21.21	139.9	20.80	13.81	20.65	40- 50	56.65	1154	96.8,96.8
60	30.17	12.99	8.705	12.46	33.71	12.02	8.026	12.01	50- 60	20.99	1175	98.5,98.5
70	14.29	6.539	4.251	6.240	14.46	5.708	3.352	5.713	60- 70	10.71	1186	99.4,99.4
80	3.598	1.325	0.6628	1.250	3.415	0.3605	0	0.3594	70- 80	4.241	1190	99.8,99.8
90	0	0	0	0	0	0	0	0	80- 90	0.2573	1191	99.8,99.8
100	0	0	0	0	0	0	0	0	90-100	0	1191	99.8,99.8
110	0	0	0	0	0	0	0	0	100-110	0	1191	99.8,99.8
120	0	0	0	0	0	0	0	0	110-120	0	1191	99.8,99.8
130	0	0	0	0	0	0	0	0	120-130	0	1191	99.8,99.8
140	0.2169	0	0	0	0.8780	0	0	0	130-140	0.0245	1191	99.8,99.8
150	1.901	0.4369	0	0	2.196	0.8844	0	0.5143	140-150	0.2242	1191	99.8,99.8
160	2.633	2.562	1.168	1.754	3.439	3.080	1.763	2.275	150-160	0.6592	1192	99.9,99.9
170	3.898	4.033	3.580	3.426	4.171	4.180	4.022	4.081	160-170	0.8808	1192	100,100
180	4.609	4.693	4.460	4.611	4.756	4.693	4.679	4.324	170-180	0.4095	1193	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 1133.9 lm

%lum = 95.1%

%lamp = 95.1%

Conical surface Flux(120deg): 1175.4 lm

%lum = 98.5%

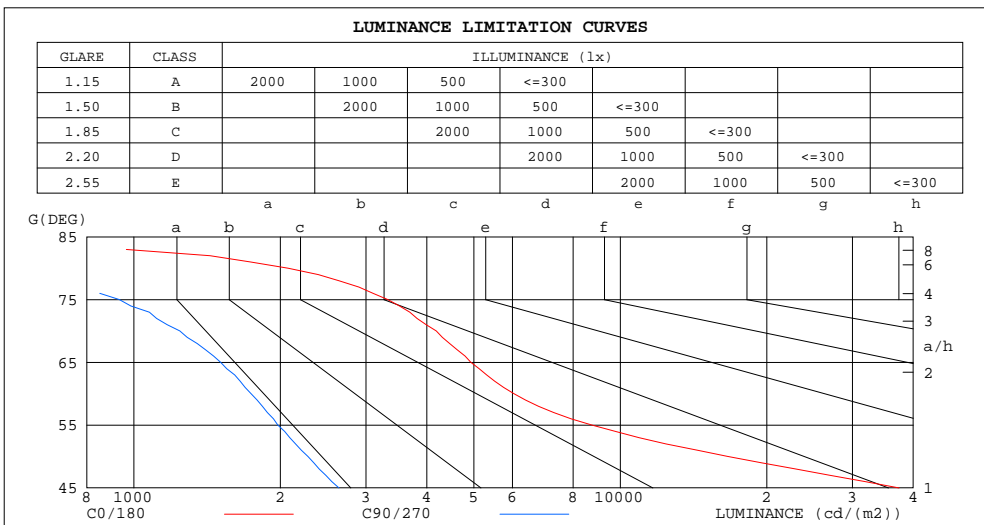
%lamp = 98.5%

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:220.14V I:0.4374A P:49.451W PF:0.5135 Freq:50.01Hz Lamp Flux:1192.84x1 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	180	0
80	2075	382
75	3325	933
70	4185	1243
65	4928	1507
60	6043	1742
55	8739	1976
50	16618	2279
45	37415	2639

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:220.14V I:0.4374A P:49.451W PF:0.5135 Freq:50.01Hz Lamp Flux:1192.84x1 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	
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	.164	.093	.029	.157	.089	.028	.144	.083	.026	.133	.077	.025	.122	.071	.023		
2.0	.155	.085	.026	.149	.082	.025	.139	.077	.024	.129	.072	.023	.120	.068	.021		
3.0	.146	.078	.023	.142	.076	.023	.133	.072	.022	.124	.068	.021	.117	.065	.020		
4.0	.138	.072	.021	.134	.070	.021	.127	.067	.020	.119	.064	.019	.113	.061	.019		
5.0	.131	.067	.019	.127	.065	.019	.121	.063	.019	.115	.061	.018	.109	.058	.017		
6.0	.124	.062	.018	.121	.061	.018	.115	.059	.017	.110	.057	.017	.105	.055	.016		
7.0	.118	.058	.017	.116	.058	.016	.110	.056	.016	.106	.054	.016	.101	.053	.015		
8.0	.113	.055	.015	.110	.054	.015	.106	.053	.015	.102	.051	.015	.098	.050	.015		
9.0	.108	.052	.015	.106	.051	.014	.102	.050	.014	.098	.049	.014	.094	.048	.014		
10.0	.103	.049	.014	.101	.049	.014	.098	.048	.013	.094	.047	.013	.091	.046	.013		

pcc	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	.192	.192	.192	.164	.164	.164	.112	.112	.112	.064	.064	.064	.021	.021	.021	
1.0	.172	.159	.147	.147	.136	.127	.100	.094	.088	.058	.054	.051	.019	.017	.016	
2.0	.155	.134	.116	.133	.115	.100	.091	.080	.070	.053	.046	.041	.017	.015	.013	
3.0	.142	.115	.093	.122	.099	.081	.084	.069	.057	.048	.040	.033	.016	.013	.011	
4.0	.131	.100	.076	.112	.086	.066	.077	.060	.047	.045	.035	.028	.014	.011	.009	
5.0	.122	.088	.063	.104	.076	.055	.072	.053	.039	.042	.031	.023	.013	.010	.008	
6.0	.113	.079	.053	.098	.068	.047	.067	.048	.033	.039	.028	.020	.013	.009	.006	
7.0	.106	.071	.046	.092	.061	.040	.063	.043	.028	.037	.025	.017	.012	.008	.006	
8.0	.100	.064	.039	.086	.056	.034	.060	.039	.024	.035	.023	.015	.011	.008	.005	
9.0	.095	.059	.034	.082	.051	.030	.057	.036	.021	.033	.021	.013	.011	.007	.004	
10.0	.090	.054	.030	.078	.047	.027	.054	.033	.019	.031	.020	.011	.010	.006	.004	

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:220.14V I:0.4374A P:49.451W PF:0.5135 Freq:50.01Hz Lamp Flux:1192.84x1 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	20.2	21.0	20.4	21.1	21.3	6.8	7.6	7.0	7.8	7.9
3H	20.1	20.9	20.4	21.1	21.3	7.4	8.2	7.6	8.4	8.6
4H	20.1	20.8	20.4	21.0	21.3	7.6	8.3	7.8	8.5	8.7
6H	20.0	20.7	20.3	21.0	21.2	7.6	8.2	7.9	8.5	8.7
8H	20.0	20.7	20.3	20.9	21.2	7.5	8.2	7.8	8.4	8.7
12H	20.0	20.6	20.3	20.9	21.1	7.5	8.1	7.8	8.4	8.6
4H 2H	19.9	20.7	20.2	20.9	21.1	7.6	8.3	7.9	8.6	8.8
3H	19.9	20.5	20.2	20.8	21.1	8.3	9.0	8.6	9.2	9.5
4H	19.9	20.5	20.2	20.8	21.1	8.5	9.1	8.9	9.4	9.7
6H	19.8	20.3	20.2	20.7	21.0	8.5	9.0	8.9	9.4	9.7
8H	19.8	20.3	20.2	20.6	21.0	8.5	9.0	8.9	9.3	9.7
12H	19.7	20.2	20.1	20.5	20.9	8.4	8.9	8.8	9.2	9.6
8H 4H	19.7	20.2	20.1	20.6	20.9	8.7	9.2	9.1	9.6	9.9
6H	19.7	20.1	20.1	20.5	20.9	8.8	9.2	9.2	9.6	10.0
8H	19.6	20.0	20.1	20.4	20.9	8.7	9.1	9.2	9.5	9.9
12H	19.6	19.9	20.1	20.3	20.8	8.7	8.9	9.1	9.4	9.9
12H 4H	19.7	20.1	20.1	20.5	20.9	8.7	9.1	9.1	9.5	9.9
6H	19.6	20.0	20.1	20.4	20.8	8.7	9.1	9.2	9.5	10.0
8H	19.6	19.9	20.1	20.3	20.8	8.7	9.0	9.2	9.4	9.9
Variations with the observer position at spacings:										
S = 1.0H	+ 6.0 / - 7.2					+ 0.7 / - 0.9				
1.5H	+ 8.0 / - 8.5					+ 0.5 / - 0.7				
2.0H	+ 8.4 / - 5.2					+ 0.6 / - 1.1				

CIE Pub.117, 1193 lm Total Lamp Luminous Flux Corrected ($8\log(F/F_0) = 0.6$)

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:220.14V I:0.4374A P:49.451W PF:0.5135 Freq:50.01Hz Lamp Flux:1192.84x1 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

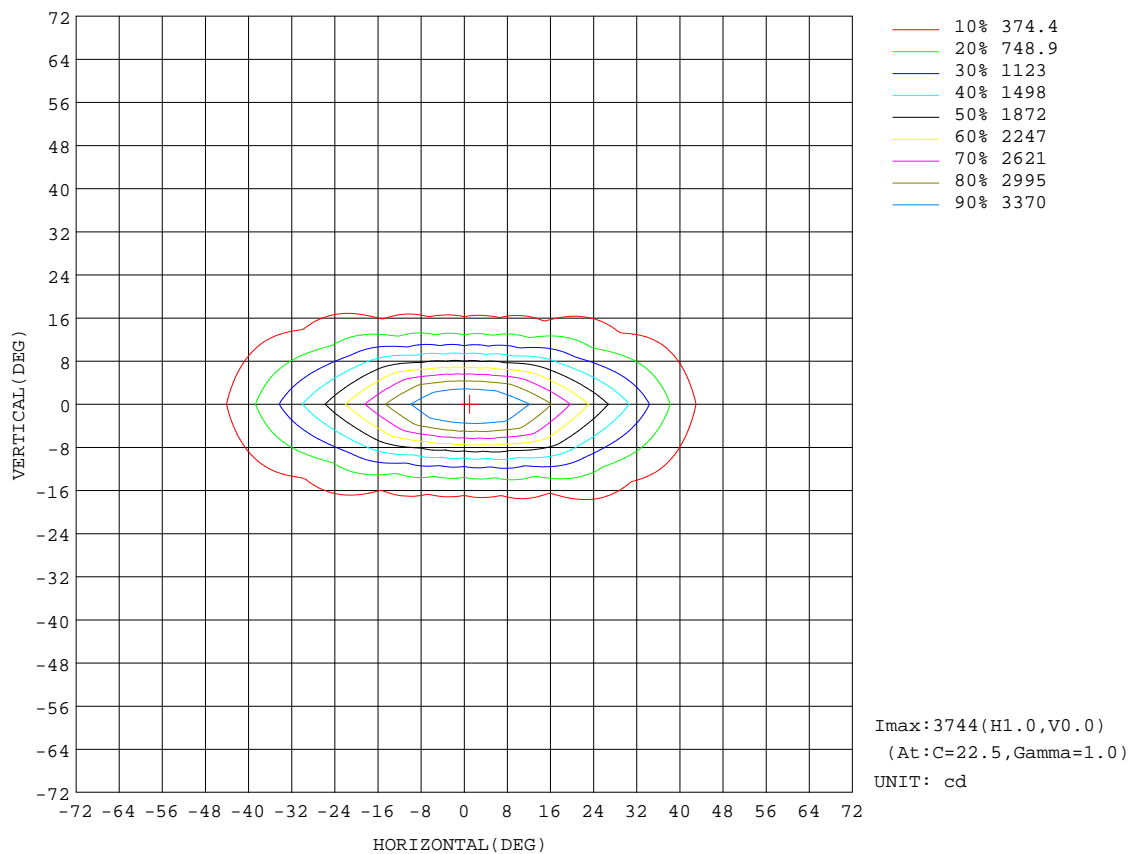
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) $k(RI) \times RCR = 5$									
$k = 0.60$	87	80	76	86	80	76	85	80	76	72
0.80	94	88	84	93	88	84	92	87	84	80
1.00	99	93	89	98	92	89	96	92	88	84
1.25	103	97	94	102	97	93	100	96	93	88
1.50	105	101	97	104	100	97	102	98	96	91
2.00	108	104	101	107	103	100	104	101	98	93
2.50	110	106	103	108	105	102	105	102	100	94
3.00	112	108	105	110	107	104	106	104	102	96
4.00	114	111	109	112	109	107	108	106	104	97
5.00	115	113	111	113	111	109	109	107	106	98
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:220.14V I:0.4374A P:49.451W PF:0.5135 Freq:50.01Hz Lamp Flux:1192.84x1 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

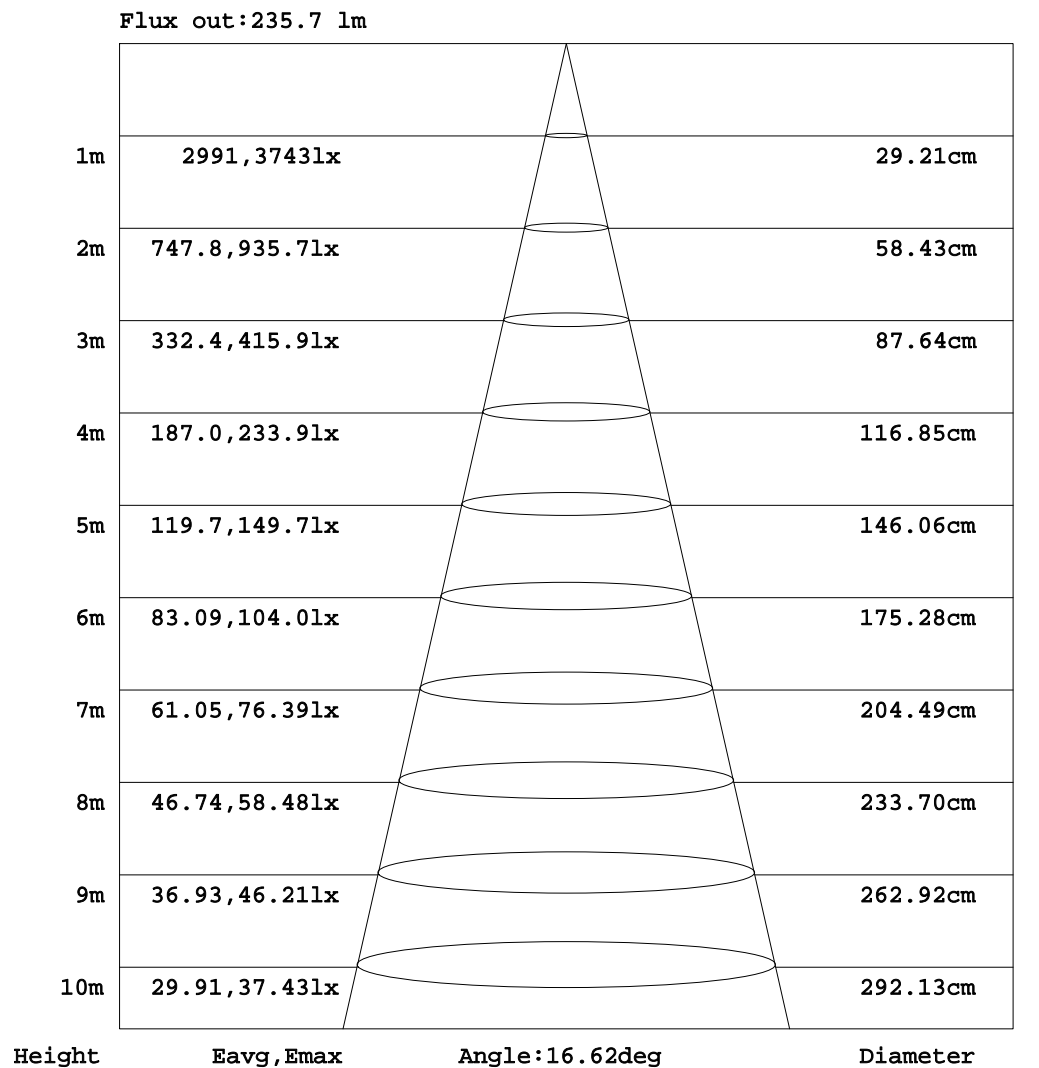


C Range: 0 - 360DEG
C Interval: 22.5DEG
Test Speed: HIGH
Temperature: 24.5DEG
Operators: William
Test Date: 2019-12-09

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:220.14V I:0.4374A P:49.451W PF:0.5135 Freq:50.01Hz Lamp Flux:1192.84x1 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

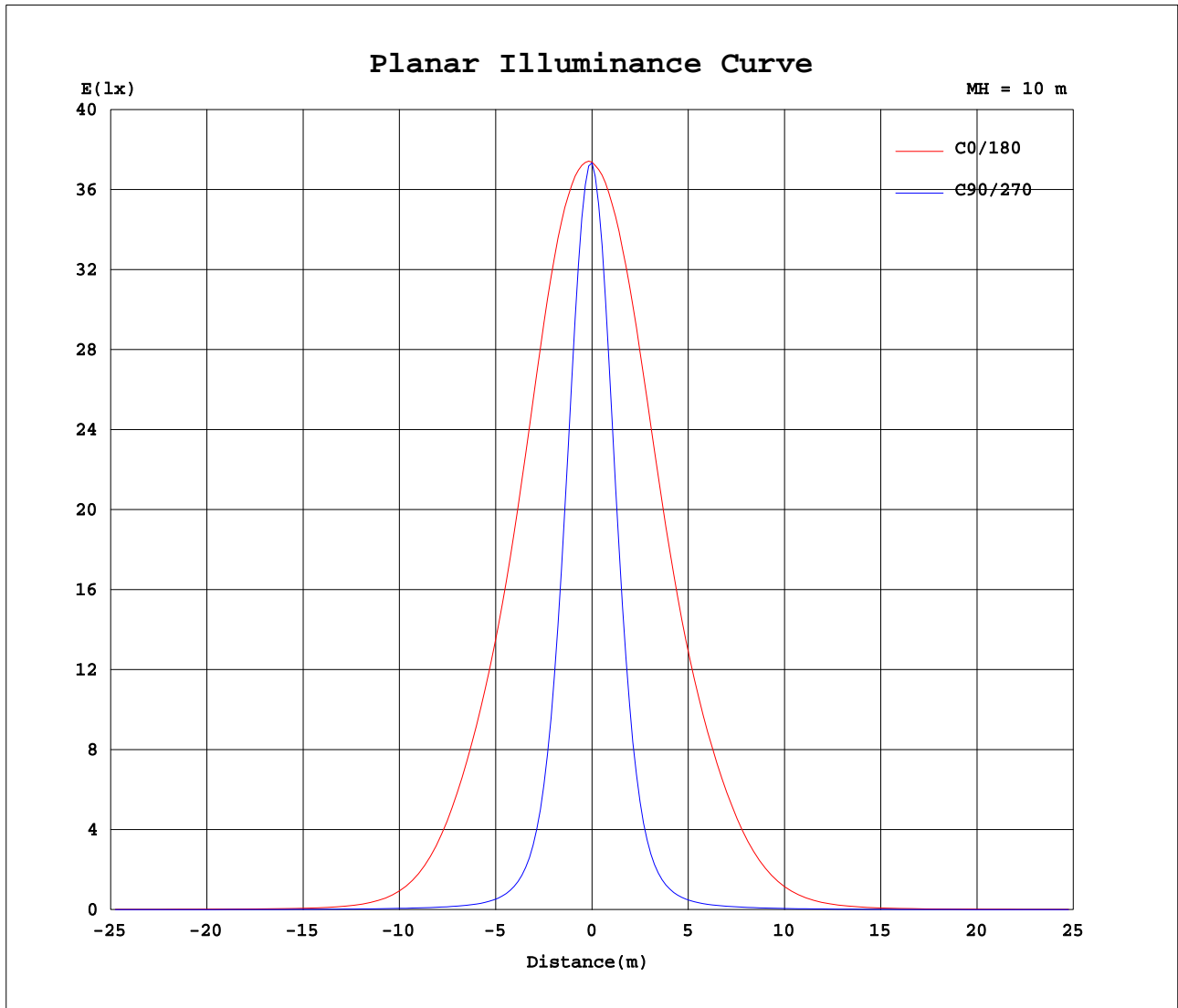


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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:220.14V I:0.4374A P:49.451W PF:0.5135 Freq:50.01Hz Lamp Flux:1192.84x1 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	3732	3732	3732	3732	3732	3732	3732	3732	3732	3732	3732	3732	3732	3732	3732	3732			
5	3704	3637	3373	3101	2983	3059	3290	3542	3620	3462	3158	2888	2783	2885	3172	3509			
10	3510	3182	2340	1710	1488	1651	2198	2983	3365	2895	2070	1504	1319	1489	2049	2927			
15	3113	2473	1281	701	556	670	1160	2224	2962	2172	1093	604	481	588	1051	2145			
20	2584	1698	587	267	207	255	523	1475	2456	1462	497	231	181	223	465	1389			
25	2043	1052	251	114	91.3	110	228	892	1946	896	218	102	82.9	100	203	817			
30	1552	603	116	60.1	49.4	57.7	110	505	1495	516	106	55.7	47.0	55.4	100	453			
35	1059	319	64.1	37.9	32.6	36.7	61.9	271	1064	283	60.7	35.6	31.2	35.7	58.9	239			
40	591	155	41.3	27.0	24.0	26.4	40.0	137	648	148	39.3	25.5	23.0	25.6	38.6	122			
45	264	75.5	29.2	20.6	18.7	20.2	28.3	70.9	326	76.9	27.8	19.5	17.7	19.6	27.5	65.4			
50	107	42.3	21.9	16.2	14.6	16.0	21.2	41.1	140	44.3	20.8	15.1	13.8	15.3	20.7	39.1			
55	50.1	27.9	16.9	12.6	11.3	12.5	16.3	27.4	61.8	28.6	15.8	11.8	10.6	11.9	15.8	26.2			
60	30.2	19.8	13.0	9.66	8.71	9.53	12.5	19.6	33.7	19.8	12.0	8.92	8.03	8.03	12.0	18.6			
65	20.8	14.2	9.61	7.03	6.37	6.97	9.17	14.1	21.8	13.9	8.65	6.29	5.62	4.69	8.70	13.0			
70	14.3	9.61	6.54	4.69	4.25	4.70	6.24	9.58	14.5	9.28	5.71	3.87	3.35	3.29	5.71	8.67			
75	8.59	5.59	3.75	2.65	2.41	2.64	3.53	5.67	8.53	5.20	2.92	1.45	1.16	1.24	3.00	4.91			
80	3.60	2.13	1.32	0.88	0.66	0.82	1.25	2.15	3.41	1.83	0.36	0.00	0.00	0.00	0.36	1.68			
85	0.16	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
140	0.22	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.88	0.51	0.00	0.00	0.00	0.00	0.00	0.22			
145	1.17	0.80	0.00	0.00	0.00	0.00	0.00	0.07	1.46	1.10	0.07	0.00	0.00	0.00	0.00	0.74			
150	1.90	1.76	0.44	0.00	0.00	0.00	0.00	1.10	2.20	1.91	0.88	0.22	0.00	0.00	0.51	1.47			
155	2.22	2.56	1.46	0.44	0.07	0.22	0.88	1.69	2.93	2.79	2.13	1.03	0.51	0.59	1.03	2.36			
160	2.63	3.43	2.56	1.61	1.17	1.10	1.75	2.35	3.44	3.23	3.08	2.42	1.76	1.62	2.27	3.09			
165	3.51	3.66	3.37	2.85	2.34	2.19	2.71	2.79	3.79	3.81	3.67	3.59	3.22	2.93	3.52	3.90			
170	3.90	4.03	4.03	3.88	3.58	3.59	3.43	3.53	4.17	4.16	4.18	4.17	4.02	3.81	4.08	4.30			
175	4.61	4.60	4.63	4.68	4.53	4.10	4.10	4.48	4.76	4.69	4.77	4.68	4.61	4.47	4.31	4.38			
180	4.61	4.69	4.69	4.68	4.46	4.18	4.61	4.49	4.76	4.62	4.69	4.68	4.68	4.47	4.32	4.41			

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: