

Technical Specification of LaserVenture Products

General

System Software

The programs used for controlling **LaserVenture** products are written in **Borland Delphi**. This ensure compatability with all Windows platforms (from W98 upwards).

Electronics Build

LaserVenture sub-assemblies are built by machine using a Versatronics RV1 pick-and-place machine, which precisely mounts the component resistors, capacitors, integrated circuits etc. Assembled PCBs are then cured in an infra-red oven.

After being loaded with the system firmware, completed PCB assemblies go through a number of test routine to ensure 100% functional integrity.

Plastics Build

Plastic piece parts for **LaserVenture** products are moulded on a **Clarke 750** vacuum forming machine. Moulded parts are then machined to the correct finished size.

Clear parts are moulded from PETG (Polyethylene Terephthalate Glycol)
Textured black parts are moulded from ABS (Acrylonitrile Butadiene Styrene)

Unmoulded parts are machined from stock on one or two of Micromat MM470 CNC drilling/milling machines. Materials used include the above two, plus also Tufnol, GRP (Glass Reinforced Plastic) and various fibrous materials.

Firmware Upgrades

Most **LaserVenture** products are based on the Atmel 89C51ED2 processor, allowing in-system firmware up-grading at will, using our ISP adaptor and ISP.EXE.

Products

Crystallite Real-Time LaserTag System

Maximum Number of Packs per system **80**

Maximum Number of Radio-Linked Intelligent Targets per system **16**

Laser

Class 1 red laser to international approvals (< 1.0 milliwatt radiation)

Radio Link

- Operating frequency – 868 bands and 920MHz bands using pre-approved LPRS transceiver modules
- 400 MHz band also available for extended range, especially outdoor use
- Over air data rate - 20 kbits/second
- Pack Poll rate - 4 packs per second
- PC comms data rate - 19200 baud

Real-Time data is available on a continual basis. A 12 pack system is fully polled every 3 seconds, a 30 pack system is fully polled every 10 seconds.

Packs

- Number of IR Sensors - Phaser 4, Vest 8
- Illuminated LCD Display - Yes
- Shoulder Sensor Modules - Yes
- 6 channel Vest Display - Yes
- 4 channel Shoulder Display
- Charging - **6 channel chargers**
- Battery - 6 x AA 2000 mAH **NimH** packs
- Battery Life - up to **20 hours**
- Battery saving circuitry and firmware - **Yes**
- Stainless Steel fixings - **Yes**
- Easy service access - **Yes** (a few seconds)
- Pluggable IR emitter - **Yes**
- Pluggable laser module - **Yes**
- Pluggable speaker - **Yes**
- Lightweight (approx 2.5kg) - **Yes**

AtriumPlus Operating Software

- | | | |
|---------------------------------------|---|----------------|
| • Licence-free | - | Yes |
| • Free lifetime upgrades | - | Yes |
| • Score Monitor Option | - | Yes |
| • Management Data Files | - | Yes |
| • Editable Player Aliases | - | Yes |
| • Editable Rank Messages | - | Yes |
| • Individual Player Handicaps | - | Yes |
| • 1000 editable Handicaps | - | Yes |
| • Multiple Game Plans | - | Yes |
| • Multiple Booking Screens | - | Up to 6 |
| • Fast Track (single button) Gameplay | - | Yes |
| • Free lifetime upgrades | - | Yes |
| • Multiple Music Playlists | - | Yes |
| • Automatic Score Form Printing | - | Yes |
| • Option to Import Player Data | - | Yes |
| • Comprehensive Help File | - | Yes |

AtriumPlus is available for evaluation from our Downloads Page at <http://www.laserverture.com/downloads-page.htm>

Crystallite System Contents

- Crystallite Packs - Phaser and Vest
- Storage Hangers
- Chargers (1 per 6 packs)
- PC Interface
- Arena Transceiver
- 20m Cat5 data cable
- Mini-ITs (Small Intelligent Target)
- Intelligent Targets (Optional)
- System Software (Downloadable without fee)

Other Requirements

- PC
- Monitor
- Second Monitor if score monitor is required
- If score monitor is required, then PC requires a dual monitor video card
- Smoke Machine
- Sound System

LaserMaze “Mission Impossible” style obstacle game

# Lasers+Receivers per standard system	-	16
Maximum Number of Lasers+Receivers per system	-	32

Laser

Class 3R red laser to international approvals (< 5.0 milliwatt radiation) – Risk Assessment available from our downloads page:

<http://www.laserverventure.com/downloads-page.htm>

PinPoint Operating Software

• Licence-free	-	Yes
• Free lifetime upgrades	-	Yes
• Score Monitor Option	-	Yes
• Management Data Files	-	Yes
• Editable Player Aliases	-	Yes
• 1000 + editable Gameplans	-	Yes
• Fast Track (single button) Gameplay	-	Yes
• Free lifetime upgrades	-	Yes
• Multiple Music Playlists	-	Yes
• Automatic Score Form Printing	-	Yes
• Comprehensive Help File	-	Yes

LaserMaze System Contents

• Laser+Reciver modules	-	typically 16
• Laser Group Box	-	1
• Receiver Group Box	-	1
• PC Interface	-	1
• Power Supply	-	1
• 5m Cat5 data cable	-	2
• 10m Cat5 data cable	-	1
• 4 core data cable	-	100m
• RJ11 connector	-	100
• Cable Tool	-	1
• Cable Tester	-	1
• System Software (Downloadable without fee)		

PinPoint is available for evaluation from our Downloads Page at

<http://www.laserverventure.com/downloads-page.htm>

Other Requirements

- PC
- Monitor
- Second Monitor if score monitor is required
- If score monitor is required, then PC requires a dual monitor video card
- Smoke Machine
- Sound System

CTarget Target Game

Maximum number of Targets	-	20
Maximum Number of Phasers	-	12

Laser

Class 1 red laser as for the **Crystallite System**

CTarget Operating Software

• Licence-free	-	Yes
• Free lifetime upgrades	-	Yes
• Management Data Files	-	Yes
• Editable Player Aliases	-	Yes
• Editable Gameplans	-	Yes
• Fast Track (single button) Gameplay	-	Yes
• Free lifetime upgrades	-	Yes
• Multiple Music Playlists	-	Yes
• Automatic Score Form Printing	-	Yes
• Comprehensive Help File	-	Yes

CTarget System Contents

• Targets	-	typically 12
• Phasers	-	typically 4 or 6
• PC Interface	-	1
• Power Supply	-	1
• 1m Cat5 data cable	-	1 per target
• 10m Cat5 data cable	-	2
• System Software (Downloadable without fee)		

CTarget is available for evaluation from our Downloads Page at
<http://www.laserverture.com/downloads-page.htm>