

## System and hardware requirements

The following client and server requirements are the minimum requirements which must not be undercut!

If planning to use the operating system (OS), database server and the LiSEC server software within a virtual machine (VM), the performance within the VM must meet the hardware requirements listed in this document.

If the same hardware server shares its resources between several VMs running third party software, LiSEC shall not be responsible for any possible performance problems.

### 1. Client requirements

#### 1.1. Minimum standard requirements

CPU:	Dual core processor
RAM:	4 GB
HDD:	10 GB free space
Network:	1x 100 Mbit Ethernet adapter
Ports:	2x USB 2.0 (free for connection)
OS:	Windows® 7/8/10 64bit
Monitor:	Min. screen resolution 1920x1080

A terminal service station can also be used for the office.

#### **Attention!**

*The minimum standard requirements listed above are valid for all LiSEC software programs. Special hardware requirements for some programs will follow now.*

#### **GPS.bendvisu**

Ports:	1x serial COM interface
OS:	Windows® 7/8/10 32bit

#### **LIS.hand, GPS.cutvisu**

Ports:	1x serial COM Interface (only for GPS.cutvisu)
Monitor:	2x with Dual VGA/DVI card (only in combination with GPS.mon)

#### **GPS.mon**

Ports:	1x serial COM interface
Monitor:	2x with Dual VGA/DVI card

Data from 08.07.2020

## Archive PC (for scanner)

CPU:	1x 4 Core Intel processor with at least CPU benchmark of 6000 (e.g. Intel Core i5-2500 3.30 GHz)
RAM:	16 GB
HDD:	2 TB
Network:	1x Gbit Ethernet adapter
OS:	Windows® 7/8/10 (Pro/Ultimate), Windows Server 2008/2012 32/64bit

## GPS.lineserver

1x Serial COM Port on board (no USB adapter!)

## 1.2. Minimum screen sizes

### Min. 1920x1080

- for office solutions

### 24 Zoll

- GPS.dynopt (dynamic optimisation)
- GPS.mon TG (curing bed optimisation display)
- GPS.mon (charge indicator for sorting system)
- GPS.ident WS/IG (information and completion message in production)
- GPS.pack (screen display of rack information)
- IG Linemanagement - External loading display
- IG Linemanagement - Info display for inspection and frame mounting station
- LIS.delivery (dispatch area)
- LIS.assetcheck (in production)
- LIS.shopfloor – currently not available

### 32 Zoll

- GPS.mon Combo/ESL/GFB/VZ (cutting plan display)

### **Attention!**

*The operating system must be installed with English as the primary language and all available updates must also be installed.*

Data from 08.07.2020

## 2. Server requirements

### 2.1. Minimum server requirements

#### Standard server

- CPU: 1x 8 Core Intel Xeon processor with at least 14000 CPU benchmark (e.g. Intel Xeon E5-2650 v3 2.30GHz)
- RAM: 32 GB
- HDD: 1x 400 GB (10,000rpm SAS HDDs) on RAID system hardware (Level 1, 5 or 10) with BBU for control buffer or NV buffer
- Network: 1x 100Mbit Ethernet adapter
- Backup: 1x SCSI belt drive (Ultrium LTO recommended) or external Advanced Backup System
- Video: 1x VGA card with 16MB
- Monitor: Min. screen resolution 1920x1080
- Ports: 1x USB 2.0 (free for connection)

#### Advanced Server

- CPU: 2x 10 Core Intel Xeon processor with at least 24000 CPU benchmark for both CPUs (e.g. 2 x Intel Xeon E5-2650 v3 2.30GHz)
- RAM: 64 GB (128 GB recommended)
- HDD: 1x 400 GB (15,000rpm SAS HDDs of the Enterprise SSD) on RAID system hardware (Level 1, 5 or 10) with BBU for control buffer or NV buffer
- Network: 2x Gbit Ethernet adapter
- Backup: 1x SCSI belt drive (Ultrium LTO recommended) or external Advanced Backup System
- Video: 1x VGA card with 16MB
- Monitor: Min. screen resolution 1920x1080
- Ports: 1x USB 2.0 (free for connection)

\*BBU = Battery Backup Unit

#### Assetcheck Standalone Server (Laptop or Desktop PC)

- CPU: Intel Core i7 or equivalent
- RAM: 8 GB
- HDD: 1x 200 GB free storage
- Network: 1x 100Mbit Ethernet adapter
- Monitor: Min. screen resolution 1920x1080
- Ports: 1x USB 2.0 (free for connection)
- OS: Windows 7/8/10 64 bit

Data from 08.07.2020

## 2.2. Drives, partitions and sizes

To determine the drives/partitions and their size, please use the document “Customer server sizes”.

## 2.3. Operating system

Select one of the following operating systems:

- Red Hat Enterprise Linux 7 x64
- CentOS 7 x64
- Microsoft Windows Server 2019/2016 x64 (Standard or Enterprise)

### **Attention!**

*The operating system must be installed with English as the primary language and all available updates must also be installed.*

*For Red Hat Enterprise Linux/CentOS installation, please refer to the appropriate installation guide.*

## 2.4. Database server

Select one of the following database servers:

- PostgreSQL 11/10/9.6 x64
- Oracle Database 12c R2/11g/10 x64 (Standard or Enterprise Edition)
- Microsoft SQL Server 2017/2016/2014/2012 x64 Standard or Enterprise Edition (Microsoft Windows operating system only)

### **Attention!**

*If the server has more than 1 CPU (2 CPU sockets and more on the motherboard), the database licensing details must be clarified with LiSEC!*

*For the Microsoft SQL Server installation guidelines, please use the associated LiSEC document: SQL Server 2017/2016/2014/2012 - Step by Step Setup*

## 2nd5th Printer specification for GPS.order and GPS.prod

HP LaserJet (PCL5c/6 and Postscript) or compatible for statistics and report printouts. Label printer (e.g. thermal transfer printer type TEC, Zebra or SATO). Control of laser printers via HP-JetDirect integrated print server for optimum control and security.

## 2nd6th Label printer and applicator in the line for option “Control of a label printer in the line excl. hardware”

### **Novexx:**

- Online Label Printer Novexx ALX924
- Online Label Printer Novexx ALX926

Data from 08.07.2020

## 2.7. Recommended thermo-transfer printers

### TEC:

- Toshiba TEC B-EX4T1

### Sato:

- GTe 408e
- GTe 412e

### Zebra/Eltron:

- All ZPL-II compatible printers like e.g. 105SE, Stripe S600
- All EPL2 compatible printers like e.g. 2746 (Eltron)

If documents such as delivery notes, invoices, lists etc. have to be printed in GPS.order, EPSON compatible matrix printers can be used.

## 2.8. Network

For ideal performance, servers should be connected via gigabit network ports to network switches. Clients can be connected via 100Mbit links.

A detailed description of the network requirements can be found in the document “Network structures for LiSEC projects”.

## 2nd9th Automatic integration of a fax solution

GPS.order software supports direct SMTP connection (via email) to an automatic fax.

### **Attention!**

*The automatic fax solution must be made available by the customer! LiSEC Software only provides the interface for the fax solution. If further developments are necessary to establish the connection, the development costs are charged.*

## 2nd10th Automatic integration of a fax solution

The following camera is required for this software solution:

- Canon EOS 2000D
- Canon EF 28mm 1:1.8 USM lens
- Scan Disk 16GB memory card (45MB/s)

Data from 08.07.2020