

# HAND HELD LASER MACHINE (HMLM)

## Risk Assessment Documentation



The checklist for risk assessment and evaluation of the safety of HLM in accordance with the “*Artificial Optical Radiation (OStrV)*” Occupational Safety Regulation, in connection with the EU Machinery Directive 2006/42/EC and DIN EN ISO 11553-2, is primarily directed at entrepreneurs, laser safety officers, and qualified personnel who are planning to purchase or commission an HLM.

This checklist does not claim to be exhaustive and primarily addresses the hazards of laser and associated radiation, as well as hazardous substances.

**Note: Fundamental product-specific safety requirements include, among others, items 1, 3, 4, 5, 6, 7, 8, 10, 12, and 22.**

Question	Inspection Criteria	Yes	No
1	Is the HLM marked with a type plate showing the complete manufacturer’s address, CE marking, and laser labeling, including laser warning signs?		
2	Is an operating manual available in the local language or in an understandable language?		
3	Is there an EU Declaration of Conformity in accordance with Machinery Directive 2006/42/EC, mentioning, for example, ISO 11553-2, IEC 60204-1, ISO 13849-1, IEC 61000-6-2, and IEC 61000-6-7?		
4	Is an authorisation device, e.g., a key switch, available?		
5	Is there an interface for external safety devices, e.g., door contact switches, and is a description of the proper connection of this safety device included in the technical documentation (ISO 13849-1 PL d)?		
6	Is there a fibre break and fibre connector detection system, and are instructions about this included in the operating manual or technical documentation (ISO 13849-1 PL d)?		
7	Is a lockable main switch with an emergency stop or emergency off function available (ISO 13849-1 PL d)?		
8	Is unintended and simple activation of the laser emission prevented by structural measures, such as a two stage trigger mechanism?		
9	Is there an emission warning device on both the laser source and the hand-laser head?		
10	Is the HLM equipped with an attachment control (workpiece contact using a clamping device)?		
11	Are there technical measures, such as distance sensors, non-contact workpiece detection, process sensors, etc., that prevent the propagation of laser radiation in all spatial directions?		

# HANDHELD LASER WELDING

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Question	Inspection Criteria	Yes	No
12	Are the nozzle and housing of the hand-laser head electrically insulated (refer to the operating manual or technical documentation if necessary)?		
13	During laser material processing, is there adequate extraction and filtration of gaseous and particulate process emissions, and is the collection system placed directly at the laser processing zone?		
14	Is the laser area defined and demarcated?		
15	Are emission warning lights installed at the entrances to the laser area?		
16	Has a laser safety officer been appointed in accordance with OStrV, and have the corresponding responsibilities been assigned?		
17	Have potential users received training or instruction in the safe use of the HLM, e.g., from the manufacturer?		
18	Has every user been instructed on the dangers of the HLM and the necessary protective measures?		
19	Is information provided about the required occupational health precautions according to ArbMedVV due to exposure to incoherent optical radiation and welding fumes?		
20	Are suitable protective gloves available for employees in the laser material processing area, and are they being worn?		
21	Do employees wear suitable long-sleeved and high-neck protective clothing?		
22	To protect the eyes and head during laser material processing, is a laser safety helmet, laser safety visor, or similar, possibly in combination with laser safety goggles, being worn with clear labeling (complete manufacturer details, type designation, CE marking, ID number of the notified body conducting the EU type examination, protection level, and wavelength range)?		
23	Site specific miscellaneous measures or remarks:		

Please sign to confirm you understand the requirements and risks of Handheld Laser Welding.

Name: ..... Date: .....