Risk Matrix Severity Likelihood	1 Remote	2 Unlikely	3 Possible	4 Likely	5 Certain
1 Trivial	1	2	3	4	5
2 Minor	2	4	6	8	10
3 Moderate	3	6	9	12	15
4 Major	4	8	12	16	20

Risk Assessment Form

1-5 Low, 6-12 Med, 15,20 High

Location Of Machine: Pontio	Assessment of: **Trotec Laser Cutters Rayjet, Speedy 300, Speedy 400**	Date: 29/01/2024
Assessment Done By: Ryan Beattie	Signature: Ryan Beattie	Referring to General Risk Assessment and COSHH Risk Assessment

Hazards to review:	People affected by this:	Controls to the hazards:	More action needed:	Risks:
Training and Supervision: Risk of injury through the lack of knowledge and experience the skill of using the machine.	• Students • Members • Staff	• Users of the machine's Health & Safety Induction must have completed prior to using the laser. • Inexperienced users must always be under supervision through using the machine.	N/A	Low
Burns To Skin: High power lasers are capable of causing severe burns to skin. **Blinding:** The Class 4 lasers are able to blind people even if a reflected beam goes into the eye; the radiation from the CO_2 laser will render the cornea of eye opaque in a fraction of a second.	• Students • Members • Staff	• An interlock is installed to ensure that the laser cannot be operated unless it is enclosed which then reclassifies the laser to a Class 2. • Avoid any long exposure to the beam pointer. • Usage of Reactive Materials is prohibited when using this machine. • Servicing is only authorised for trained personnel which are able to control the high voltage risk and the risks from the beam.	N/A	Low

A copy of this Assessment must be passed to the Safety Officer and made available in the workplace. Team Folder – Risk Assessments\ Equipment.

PRIFYSGOL BANGOR UNIVERSITY

Risk Assessment

(Continuation)

Arloesi Pontio Innovation

Hazards to review:	People affected by this:	Controls to the hazards:	More action needed:	Risks:
High Voltage: The tubes used as the sources of the radiation which contain gas operates at hazardous potentials.	• Students • Members • Staff	• Since the electrical supplies are enclosed the risk that they contain is minimal. • See above.	N/A	Low
Toxic Fumes: Using the laser to cut PVC produces vinyl chloride (Carc, R45, 12) with the Workplace Exposure Limit of 3ppm over an 8-hour time weighted average along with other decomposition products. When heating polyurethane foams there may be a result with hydrogen cyanide (Sk, R12, 26, 50/53) with a WEL if 10ppm over a 15-minute period and Nitrogen oxides (R26) with a WEL that is too low to mention. **Harmful Particles:** The cutting procedure will release particles and the decomposition of by-products from the materials which are being cut. Rubber for example will combust with pyrolysis products with some being harmful.	• Students • Members • Staff	• Refer controls to the Laser 'Prohibited materials list'. • If materials are on the 'Prohibited Materials' List DO NOT cut them. • PVC and polyurethane foams are not to be cut even with LEV in use. • Use the extractor to remove all fumes from cabinet before safely opening door. • Special filters are often recommended for opening materials that cause fumes over dust to rise. • Maintenance of the dusting controlling systems must be ensured, the testing regularly and the changing of filters according to the manufacturer's instructions any used filters should be placed into strong plastic bags before placing them in the waste bin you must follow LEV emptying SOP.	N/A	Low

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Risk Assessment

(Continuation)

Arloesi Pontio Innovation

Hazards to review:	People affected by this:	Controls to the hazards:	More action needed:	Risks:
Fire: The cutting process comes with the potential of ignition of the cutting material.	• Students • Members • Staff	• NEVER let the laser run while unattended the is a rule that must be kept without exception. • The correct setting for power and speed must be done correctly before utilising the machine to ensure the minimisation of the risk of ignition of the work pieces. • Guidelines that the manufactures set must be followed. • A CO_2 extinguisher and a 'Action in case of flame' training is provided before use of the machines. • Switching fire detection systems from smoke detection to heat detection while using the lasers is a must.	N/A	Low

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