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Diagnostic, radiation monitoring and interlock systems for the x-Band RF test facility at the University of Melbourne (x-LAB).

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The baseline design of the compact linear collider (CLIC) requires high gradient accelerating structures operating at 12 GHz with accelerating gradients of 100 MV/m. To demonstrate the feasibility and optimise the performance of these structures several x-band test facilities, x-Box 1, 2 and 3 have been operating at CERN. A new test facility will come online at the x-band laboratory for accelerators and beams (x-LAB) at the University of Melbourne later this year. As part of the commissioning process, diagnostic, radiation monitoring and safety, and interlock systems are being designed installed and tested. This report presents an overview of these systems and their current status. As well as future plans for how these systems might evolve as the x-LAB develops.

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