

Component and Material Lab-GARC

GARC – Chennai is located in close proximity of IT- Hub of country and also the centre of excellence for EMC and Infotronics. In view of this the component and material lab proposed at GARC would cover the complete need of Electronic component manufacturers. The proposed lab will equipped with following technical capabilities:

Component and Material Lab GARC

Process Cycle	Description of Facility	Use of Facility
DESIGN	CAD/CAE	Design and Virtual structural analysis.
	Basic Material Lab	
	Universal Testing Machine	Metallic and non metallic material characterization.
	Reverse Engineering	
	3D measuring devices	
	Prototyping	
	Basic CNC Lab	Prototyping of particular component
TESTING	Structural Testing	Deceleration, impact and static/dynamic load test
	Environmental Testing	
	Climatic Chamber for full vehicle	Test Extreme environmental conditions
	Climatic Chamber for full Components	1200l, -50 to 180⁰ C, humidity control, 20 KW
	Thermal shock chamber	85l, 40 to 220⁰ C & -50 to 60⁰ C, humidity control, 20 KW
	corrosion chamber : salt spray	1200l, 10 to 55⁰ C , humidity control, 3.5 KW
	corrosion chamber : sulphur dioxide	1200l, DIN50018
	Climatic +sun simulation +IR radiation	900l, -35 to 150⁰ C & 10 to 90⁰ C with radiation, 11KW.
	Water test chamber for components	900l ICE 529
	Dust test chamber for components	900l ICE 529

	UV chamber for components	40 to 120 ⁰ C
	Vacuum chamber for components	
	Ozone chamber	
	Weather-O-meter	
	Combined Structural & Environmental Testing	
	Electrodynamic Shakers + Climatic Chamber	Vibration + Temperature control +Solar simulation
	MAST + Climatic Chamber	
	Functionality Testing	Certification purpose
FAILURE ANALYSIS	Dimensional Analysis	
	3D measuring devices	For plastic deformation inspection purpose
ELECTRONIC COMPONENTS	ECU Development and validation	Software and hardware in the loop, can bus, sensors and actuators functional validation.
	Structural Testing	Mechanical shock, drop test
	Environmental Testing	
	Climatic Chamber for full Components	Test Extreme environmental conditions
	Thermal shock chamber	
	corrosion chamber : salt spray	
	corrosion chamber : sulphur dioxide	
	Climatic +sun simulation + IR radiation chamber for components	
	Water test chamber for components	
	Dust test chamber for components	
	UV chamber for components	
	Combined Structural + Environmental Testing	
	Electrodynamic Shakers + Climatic Chamber	Vibration + Temperature control +Solar simulation
	MAST + Climatic Chamber	
	Electromagnetic Compatibility	