

## Specification requirements

### Digital Optical confocal microscope

For: Engineering Materials, HSE-Science Division; Major Hazards Capability Group

V22/02/2019

<b>Area</b>	<b>Essential requirements</b>	<b>Explanatory notes</b>
<b>Focus</b>	Focus Jump	
	Auto focus	
	Instant full focus	
<b>Magnification</b>	Lens No.1, range approx. x20 to at x200; working distance at least 20mm	Working distance >20mm essential
	Lens No.2, range approx x100 to x1000; working distance at least 20mm, with brightfield and darkfield options	Working distance >20mm essential
	Other lenses must be available in product range with magnifications up to x5000	For future-proofing
<b>Lighting</b>	Multi lighting	Lighting data obtained from various angles by pressing one button. This means ability to acquire optimal lighting effects easily and shows surface features that would otherwise be impossible to view
	Ring removal	
	Glare removal	
	Advanced lighting adapters	
	Polarisation filters for specific higher magnification lens options	For light-field and dark-field observations
<b>Observation</b>	3D observation	
	2D stitching	
	3D stitching	
<b>Measurement</b>	Particle counting	
	ASTM grain sizing	
	3D measurement	
	One click template measurement	
	Surface roughness measurement	
	Local measurement/dimensioning of features	
<b>Image definition</b>	High resolution HDR	
	Camera resolution at least 16Mega Pixel	Applicable to both 2D and 3D image stitching
<b>Working area of observation</b>	At least 40mm x 40mm	
<b>Usability</b>	Navigation mode	
	Excel and Word reporting formats	
	Magnification recognition	
	Motorised Z stage	
	Motorised XY stage	

	<b>Flexible stages</b>	
	Hand held observation	The camera and lens part of the microscope is detachable for use in handheld observation. Ability to view large, heavy or awkwardly shaped samples that will not fit onto the microscope stage, simply by taking the camera directly to the sample.
	90 degree tilting	Sample observation from various angles can be done without having to manipulate or touch the sample. The stage must rotate by 180 degrees as well as tilting up to 90 degrees.
<b>Support</b>	Please provide details of your maintenance and support agreements, along with their associated costs.	
	Please provide details of any training that you offer on the use of the microscope, along with the associated costs. HSE would expect all training to be flexible and uncapped.	
	At this time we are not looking for any calibrating support.	