**Technical Specification – HSE/T3877**

**Hand-held portable equipment for measurement of compositions of metals**

**(both heavy and light elements) using XRF and/or LIBS analysis**

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| **Area** | **Requirements** | **Explanatory notes** |
| **Analysis capability** | * Unit/s must be able to analyse compositions of metals and alloys such as low alloy steels, stainless steels, nickel alloys, copper alloys, titanium alloys.
 | Elemental analysis range to be specified (e.g. C, Al, S, V, Cr, Fe, Ni etc) |
| * Unit/s must be hand-held and portable, capable of use in both internal and external environments
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| * Unit, or units, must have ability to analyse elements in the range carbon to lead
* Analysis of this elemental range may be achieved by one combined instrument or two individual instruments e.g LIBS for light elements and XRF for heavier elements.
 | Please provide quotes as appropriate for:* A single unit that covers the whole elemental range
* Two separate units if required to meet the full elemental range
* If only heavy elements can be analysed (XRF) please provide quote for that unit alone.
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| **Accuracy/calibration** | * Analysis capability to detect transition metals and elements from atomic number 13 and above with accuracy to 0.1 % or better.
 | Analysis accuracy to be provided with quotation.(if this is not achievable please state accuracy limits). |
| * Unit to be calibrated and supplied with suitable reference standards. Certificate of calibration required.
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| **Portability** | * Hand held capability required to allow analysis of large immovable samples.
 | Lightweight and portable such that it could be used on a scaffold/ladder |
| **Data storage** | * Memory capacity for multiple analyses (please state approx. number of analyses)
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| * PC compatible to allow downloading of results via Excel file or similar software.
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| **Safety** | * Safety features to protect the operator.
 | Please provide details of inherent safety features |
| * Protective and lockable carry case.
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| **Support** | * Annual safety and calibration check
 | Certificate of service and calibration required. |
| * Service and repair contract
 | Please provide details and cost |
| **Additional features** | * Please provide details of optional extras such as test stands.
 | Please cost separately |
| * Battery and charger must be included within the price
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| **Additional features** | Essential: * Water proof/water resistant (state IP rating).
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| Desirable;* Ability to analyse powders
* Tilting display
* Hot-swap battery system to prevent loss of data if batteries need replacing.
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| * Please advise of any additional hardware or consumable requirements such as argon/helium cylinders.
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| **Warranty** | * Please state warranty period
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| **Lead time** | * Please state best lead time from receipt of order
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| **Delivery location** |  | Delivery location is Buxton, Derbyshire, UK |

Bids will be evaluated and awarded on a Most Economically Advantageous Tender (MEAT) basis, including the ability to deliver before 31 March 2021.