QCX/RoboLab® & QCX/AutoPrep™

Example for full automation of sampling and sample preparation (or ship loading) of iron ore lump/sinter/pellets (option for automatic XRF analysis not shown here)

© FLSmidth A/S Automation. All rights reserved.

ECS/ProcessExpert, ECS/CEMulator, ECS/PlantGuide, ECS/OnStream, ECS/ACESYS, ECS/ControlCenter, ECS/Woodware, ECS/SmartStation, ECS/StackGuide, QCX/Laboratory, QCX/AutoSampling, QCX/AutoPrep, QCX/BlendExpert, QCX/BlendMaster and Kilnloq are either registered trademarks or trademarks of FLSmidth A/S Automation in the United States and/or other countries. All other trademarks are property of their respective owners.

FLSmidth Automation reserves the right to change specifications without prior notice. Our brochure makes no offers, representations or warranties (express or implied), and information and data contained in this brochure may change at any time. Please contact us for specific information or data that may apply to your interests.
Introduction
The picture on the front page shows the QCX/RoboLab system at Richards Bay Minerals, South Africa. This automated laboratory setup in a heavy minerals processing facility is one of many possible applications of QCX/RoboLab or QCX/AutoPrep within minerals & metals processing industries. This brochure outlines a range of relevant configuration examples. For general introduction to the QCX System concept, please refer to separate ‘Product Profiles’ on ‘QCX System-minerals & metals’, ‘QCX/RoboLab’ and ‘QCX/AutoPrep’.

The QCX sample preparation and laboratory automation concept is targeted at the following industrial processing segments:
- Iron ore
- Heavy Minerals / Mineral Sands
- Copper
- Bauxite, Alumina, Aluminum
- Lead & Zinc
- Gold, Platinum
- Steel & Base Metals
- Cement

In addition to a comprehensive product program for automated sampling and sample transport from the process area to a central laboratory facility, the QCX system offers fully automated solutions for sample prep and analysis activities such as:

- Sample receipt & identification
- Coarse sample prep for exploration & mine/quarry production bore hole samples (crushing, splitting, grinding, drying,...)
- Weighing & dosing of sub-sample portions (example: fire assay sample + flux weighing & dosing)
- Sample prep for XRF & XRD analysis (both powder & fusion method is supported)
- Sample prep for OES analysis
- Particle Sizing (and specific surface)
- Laser granulometry or traditional sieving methods
- Moisture & LOI determination
- Physical testing of intermediate & final products

The above sample disciplines may be handled in one or more automated configurations, integrated according to project specification.

QCX/RoboLab® & QCX/AutoPrep™ - minerals configurations

Example of QCX/RoboLab cell with combined coarse sample prep and XRF sample prep.

Combined OES & XRF (+XRD option) sample prep, in one QCX/RoboLab cell.

Example on integration of automatic sampling & sample transport with robotics based lab automation.