

Recommended Specification
ChemScan UV-2150/DC Dechlorination Analyzer

An on-line analyzer for detection of total chlorine residual and dechlorination chemical residual shall be furnished in accordance with these specifications. The analyzer shall be a ChemScan UV-2150/DC as manufactured by Applied Spectrometry Associates, inc. No substitutes allowed.

Total residual chlorine range shall be 0.05 to 5.00 ppm as Cl₂ in the influent to the dechlorination process and 0.005 to 0.500 ppm as Cl₂ in the effluent from the dechlorination process. The range for dechlorination agent shall be 0.005 to 0.500 ppm as Cl₂ or equivalent. The analyzer shall not use ion-selective electrodes for analysis. Multiple wavelength spectrophotometric methods of analysis are allowed, provided that a minimum of 15 wavelengths are used for analysis. NSF listed chemicals such as bleach, sulfuric acid, and potassium iodide may be used as reagents.

One analyzer shall be capable of detecting all designated parameters in samples from two sample locations. Sample flow to the analyzer shall be from a tee connection to a sample bypass line, providing pressure of 10 to 60 psi at the analyzer sample inlet. Each sample line shall have a separate inlet into the analyzer, with sample flow through the inlet and the analyzer flow cell controlled by an internal sample manifold within the analyzer. The analyzer shall have the capability to control sample analysis cycles and flush time through operator initiated commands in the analyzer controls. External sample manifolds and sample manifolds not furnished by the analyzer manufacturer are prohibited. All designated parameters shall be completely analyzed for all designated parameters within five minutes or less following the flush period for any sample line. Sample transport time and reagent reaction times in excess of five minutes are prohibited. Analyzers that require external sample conditioning such as bubble arrestors, sample heaters or filters to reject or remove particles less than 1/32 inch are prohibited.

The analyzer shall also provide for automatic zeroing using a distilled or de-ionized water standard and automatic cleaning using a cleaning solution recommended by the manufacturer. Zeroing shall be performed automatically by the analyzer at intervals selected by the operator. Cleaning shall be performed based on self-test set points measured during the zeroing cycle. The analyzer shall contain an internal pump for the introduction of zeroing and cleaning solutions and a manifold to interrupt sample flow and replace it with a flow of zero standard or cleaning solution. Gravity feed, manual introduction or external pumps for zeroing and cleaning are not acceptable. The flow cell chamber shall be easily removed for cleaning without disconnection of power, sample lines, light source or detection optics. The flow cell shall be thermally protected from condensation by use of inert gas between the internal sample windows and the external light entry or exit windows. The contractor shall provide an open drain in close proximity to the analyzer.

The analyzer shall provide a continuous (dedicated 4-20mA analog or MODBUS) output. All outputs shall be held at the most recent analysis value until updated by a new analysis. Outputs shall also be held constant during auto zero and clean cycles. A 1000 analysis cycle internal memory log shall be available for access through an RS-232 connection. Electronics, optics and operator interface display shall be in a NEMA-4 enclosure. Flow cell, manifold, internal pump and reagent injection system shall be in an attached NEMA-3R enclosure. Power for the analyzer and the zero/clean pump shall be 4 amp maximum at 120 VAC, 60 cycle. Installation shall be wall mounted to contractor furnished Unistrut in a sheltered or indoor location, with ambient temperature not greater than 35°C or less than 5° C.