

CUES would like to present the only truly wireless and color manhole inspection technology in a lightweight and compact form factor called the SPiDER. The SPiDER is a scanner which can calculate its position in the manhole shaft by using its sensor data to measure its incremental motion. This technology frees inspections from problems associated with inaccurate, poorly calibrated cable counters and poorly managed cables. SPiDER weighs less than 30 pounds and can be hand carried to easements or other previously difficult to access sites. This portability is possible because the processing computer and battery supply are located on the camera. Additionally, SPiDER does not require an inspection truck or other piece of equipment (other than the included tablet) for operational use.

SPiDER collects millions of three-dimensional (3D) measurements during each manhole inspection. The raw data is post processed to a 3D point cloud that provides engineering and survey quality information on manhole geometry and condition that can be used for structural assessment, pre and post rehabilitation analysis (i.e. lining thickness), hydrological surveys, as well as general condition assessment.

SPiDER also provides live-video stream and recorded video making it an ideal tool for Infiltration and Inflow (I&I) studies which depend on live video to detect moving water.

SPiDER can scan vertical structures up to 12 feet wide and 50 feet deep. Post processing is completed while inspections are occurring. Running water in the manhole is recorded on video and the unit is waterproof. The unit has no moving parts, completely solid state so design life and maintenance is vastly improved over convention cameras. Data collection computer and batteries are mounted on the unit for completely wireless operation. Tablet controls the lights and recording functions but all data is stored on the inspection unit.

SPiDER's application is to produce a condition assessment (MACP) of a manhole. SPiDER can also produce a 3D scan of the manhole (mesh) before and after rehab to measure the thickness of spray on coatings or determine the size of cured-in-place liners to be pre-cut accurately before onsite install.

