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| **Metadata: Lock 8 Weather Station, Mohawk River**  **Location:** Lock 8, Mohawk River ([42.8302,-73.9925](https://maps.google.com/maps?q=42.8302%2BN%2B%2C73.9925%2BW&hl=en&ll=42.830168%2C-73.992373&spn=0.004217%2C0.004823&sll=42.829242%2C-73.991504&sspn=0.004217%2C0.004823&t=h&z=18) )  **Data collection period:** October 20th, 2012 – present  **Parameters:** air temperature, soil temperature, barometric pressure,  dew point, radiation (PAR), precipitation, daily cumulative rainfall, relative humidity, wind speed, direction & gusts. |
| **Disclaimer**: HRECOS is a research project. No warranty—either express or implied—is made for any information presented by this program. |
| **Contacts**:  Brittney Flaten, HRECOS Coordinator  NY State Dept. of Environmental Conservation 256 Norrie Point Way, Staatsburg, NY 12580 Phone: 845-889-4745 x117  Email: brittney.flaten [at] dec.ny.gov |
| **Location and equipment:**  The weather station at Lock 8 is just NW of the Lock 8 buildings. Sensors are installed on a 10’ tower that is above nearby vegetation and over 15 meters from any nearby structure. Data is reported to a nearby CR1000 datalogger via wireless transmitter (~300 m), then to the HRECOS database by cellular modem.  Meteorological sensors at this site reports the following parameters every 15 minutes: air temperature, soil temperature, barometric pressure, radiation (PAR), precipitation, relative humidity, wind speed, direction & gusts. Dew point and daily cumulative rainfall are calculated by the HRECOS database in real-time. See the section titled “Sensor Specifications” for more information. |
| **Special remarks / notes:**   * 10/20/2012~: The barometer failed almost immediately after installation. Measurements are 10 mbar above expected and occasionally jump to normal levels. All data for this time period was rejected. * 12/29/13: Significant rain event not recorded. Site visit on 12/30 revealed that the rain bucket was full of ice, and the wind sensor was frozen in position. Rain bucket cleared same day and wind sensor de-iced on 12/31. * 8/14/14: Wind sensor upgraded. Temp/RH, barometer, PAR sensor, and rain bucket swapped with newly calibrated units of same model. See sensor specifications table for details. * 6/22/18: PAR sensor failure. Replaced 8/3/18. |
| **Distribution terms:**  HRECOS requests that attribution be given whenever HRECOS material is reproduced and re-disseminated and the HRECOS Coordinator be notified prior to publications including any part of the data. Example citation: “Hudson River Environmental Conditions Observing System. 2012. Accessed April 13th, 2016. <http://www.hrecos.org/>.” |
| **QAQC Comment Code definitions:** |



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| General Errors  [GIM] instrument malfunction  [GIT] instrument recording error, recovered telemetry data [GMC] no instrument deployed due to maintenance/calibration [GPF] power failure/low battery  [GQR] rejected due to QAQC checks [GSM] see metadata  [GMT] instrument maintenance [GDP] power down  [GPR] program reload  Sensor Errors  [SIC] incorrect calibration constant, multiplier or offset [SNV] negative value  [SSN] not a number/unknown value [SOC] out of calibration  [SSM] sensor malfunction [SSR] sensor removed  Comments  (CAF) acceptable calibration/accuracy error of sensor (CDF) data appear to fit conditions  (CRE) significant rain event (CSM) see metadata  (CVT) possible vandalism/tampering |

Last updated: 12/15/23

Table 1. Weather station sensor specifications

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Make, Model | Sensor type | Units | Range | Accuracy | Temp  dependence | Misc. |
| **Air temperature** | Vaisala HMP45AC | Platinum resistance thermometer | C | -40C to +60C | 0.2C at 20C | N/A | N/A |
| **Relative humidity** | Vaisala HMP45AC | Capacitive polymer | % | 0 to 100% non- condensing | At 20C: 2% (0-90%);  3% (90-100%) | 0.05%/C | N/A |
| **Barometric pressure** | Campbell Scientific (Vaisala) CS106 | Silicon capacitive | mbar | 500-1100 mbar | ±0.3 mb @ +20°C;  ±0.6 mb @ 0° to 40°C;  ±1.0 mb @ -20° to +45°C;  ±1.5 mb @ -40° to +60°C | N/A | N/A |
| **Precipitation** | Texas Electronics TE525WS | Tipping bucket/ magnetic reed switch | inches | N/A | Up to 1 in./hr: ±1%  1 to 2 in./hr: +0, -2.5%  2 to 3 in./hr: +0, -3.5% | N/A | 8” diameter  funnel, 0.254 mm/tip |
| **Radiation (PAR)** | LI-COR LI190SB | Silicon PV detector (400-  700 nm) | Mmoles m-2 (total  flux) | N/A | N/A | 0.15% per °C max. | Sensitivity: 5  µA per 1000 µmoles s-1  m-2 |
| **Soil temperature** | Campbell Scientific 109 | Aluminum- housed thermistor | C | -50° to +70°C | (Tolerance) ±0.2°C over 0° to 70°C range | < ±0.2°C over 0° to 70°C  range increasing to  ±5°C at -50°C | 24”  installation depth |
| **Wind direction**  **---**  **Wind Speed** | MetOne 034B (until 8/14/14) | Mechanical vane  ---  Mechanical  propeller | Degrees  ---  m/s | 356° electrical  ---  0 to 50 m/s | ±4°  ---  ±0.11 m/s (@<10.1 m/s) or ±1.1% (@>10.1 m/s | N/A | Replaced with model below due to intermittent  outages |
| **Wind direction**  **---**  **Wind Speed** | RM Young 05103-45/5 | Mechanical vane  ---  Mechanical  propeller | Degrees  ---  m/s | 355° electrical  ---  0 to 100 m/s | ±3°  ---  ±0.3 m/s or 1% of reading | N/A | N/A |