

MDP Tower Measurements

Measurement	Sensor	Tower Top	Profile Boom
CO ₂ and H ₂ O concentration & flux	LI-COR - LI7200 gas analyzer	20 Hz	⊙
CO ₂ and H ₂ O concentration (storage/profile)	LI-COR - LI840A	1 Hz	1 Hz
CO ₂ atmospheric isotopes (storage/profile)	PICARRO - G2131-i isotopic CO ₂ analyzer	1 Hz	1 Hz
H ₂ O atmospheric isotopes (storage/profile)	PICARRO - I2130-i isotopic H ₂ O analyzer	1 Hz	1 Hz
3D wind speed, direction & sonic temperature	Campbell Scientific CSAT-3 3-D Sonic Anemometer	20 Hz	⊙
3D wind attitude & motion reference	Xsens North America Inc. MTI-300-2A5G4 Attitude Heading Reference System	40 Hz	⊙
2D wind speed & direction	Gill - Wind Observer II; Extreme Weather Wind Observer; RM Young 05108-45 Wind Monitor-HD Alpine (buoy); Honeywell HMR 3330 (buoy)	⊙	1 Hz
Phenology images	Stardot NetCam SC CAM-SEC5IR-B	15 min	15 min
Air temperature	Thermometrics Climate RTD 100 Ω Probe, housed within a Met One 076B fan aspirated radiation shield	1 Hz	1 Hz
Relative humidity	Vaisala HUMICAP Humidity and Temperature Probe - HMP 155	1 Hz	1 Hz
Photosynthetically Active Radiation (PAR)	Kipp & Zonen PQS 1 PAR Quantum Sensor (additional downward-facing sensor at tower top)	1 Hz	1 Hz

MDP Field Measurements

Measurement	Sensor	Frequency
Barometric pressure	Vaisala - BAROCAP Digital Barometer PTB330	1 Hz
Precipitation/Secondary	Met One 372 tipping bucket (non-heated) and 379 tipping bucket (heated)	On event

MDP Soil Measurements

Measurement	Sensor	Frequency
Soil heat flux plate	Hukseflux HFP01SC: Self-Calibrating Heat Flux Sensor	0.1 Hz
Soil moisture and temperature	Acclima TDR-315L	0.1 Hz
Soil CO ₂ Flux	LI-8100A Respiration Chamber	1 Hz
PAR - quantum line	Licor LI-191-01 Quantum Line Sensor	1 Hz

MDP Aquatic Measurements

Measurement	Sensor	Frequency
Water Grab Sampling	Teledyne Isco 6712 Full-size Portable Sampler	NA
Water Temperature	PRT Thermometrics Aquatic RTD Sensor P/N R032-00000048	1 Hz
Conductivity	YSI EXO2 Sonde	1 min
pH	YSI EXO2 Sonde	1 min
Disolved Oxygen	YSI EXO2 Sonde	1 min
fDOM	YSI EXO2 Sonde	1 min
Chlorophyll	YSI EXO2 Sonde	1 min
Water Level	Level Troll 500	1 min
PAR	Kipp & Zonen PQS 1	1 Hz