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Supplement of

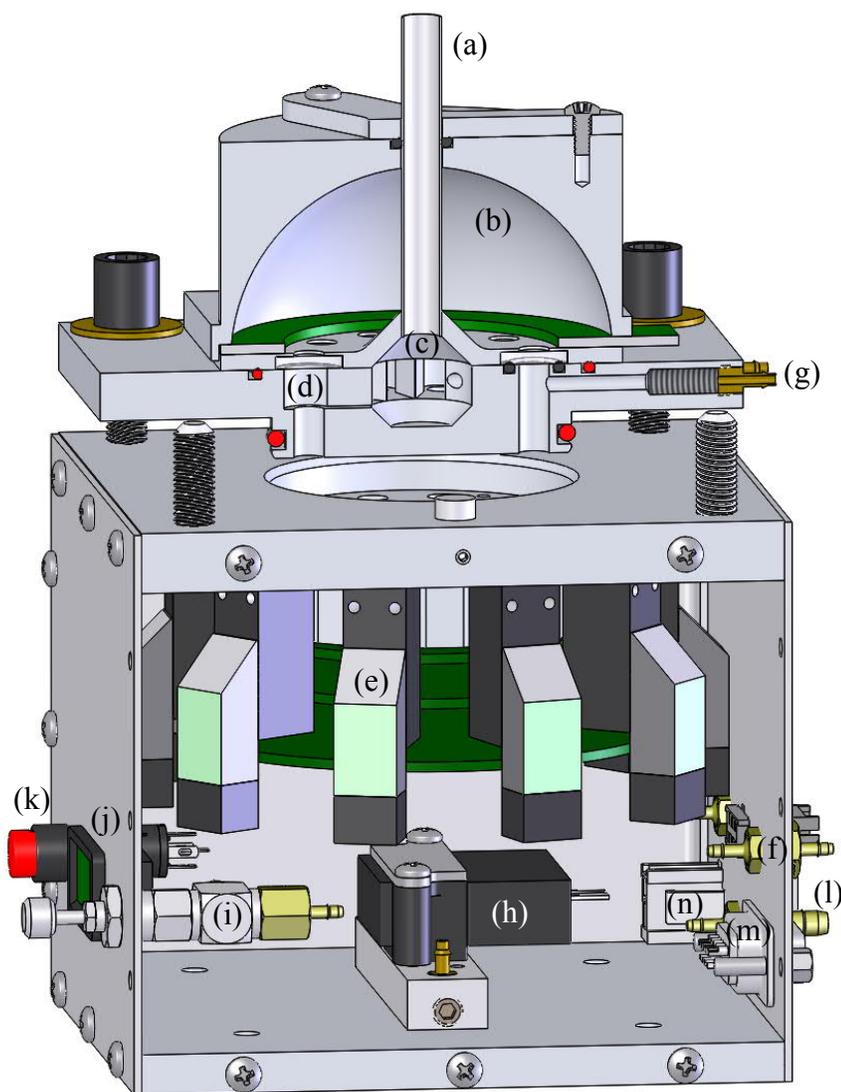
Continuous light absorption photometer for long-term studies

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Supplemental Material



5 Figure S1: Annotated diagram of CLAP construction. Sample air enters through the inlet tube (a), which passes through the center of
the integrating hemisphere (b) of the light source. Sample air is decelerated in the manifold (c), passes through one of eight channels
(d), and then through the filter (not shown) that is squeezed between the top and bottom halves. After passing through the filter, the
flow goes through one of eight solenoid valves (e) that selects the active sampling spot, and then out a bulkhead connector on the back
panel (f). An external tube (not shown) directs the sample air to a port on the upper half (g) and then through one of two reference
spots on the filter. After passing through the reference spot and its associated solenoid valve, air goes through a mass flowmeter (h)
10 and flow control valve (i) before exiting the back panel of the instrument (l). In addition to the flow control valve, the front panel
contains a meter (j) for displaying the flow rate and a combined pushbutton and indicator lamp (k). Connectors on the back panel are
provided for RS232 data output (m) and 24 V DC power (n).

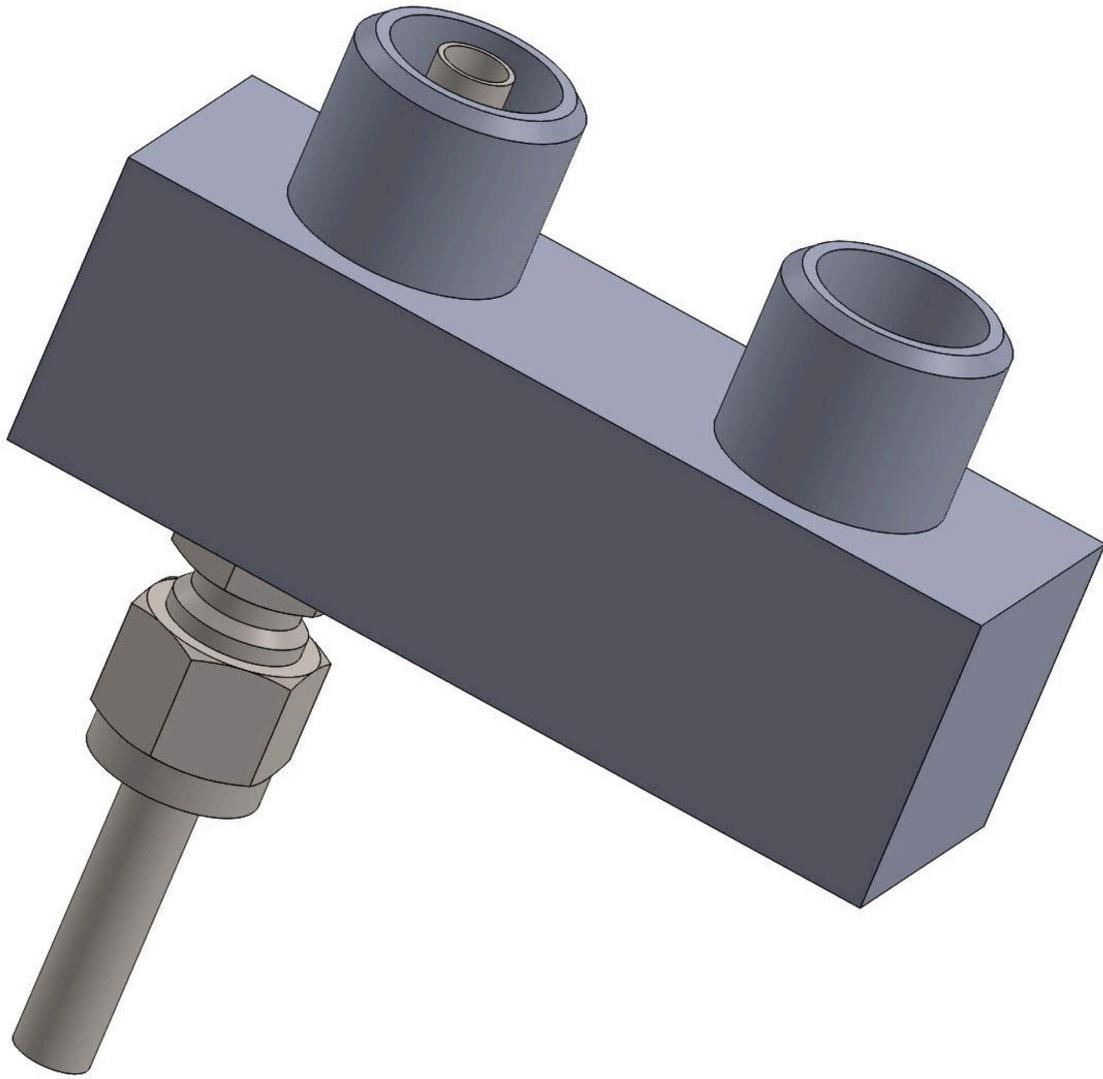


Figure S2: Modified blower block for TSI integrating nephelometer showing sampling port for CLAP. A ¼ inch stainless steel tube is inserted into a bored-out Swagelok male connector to provide a sample of air exiting the nephelometer.