(a) Off-axis parabola
WG345
WG320
Dichroic
Custom interference filter
Mirror
F/3.1 lens
Optical fiber bundle
Bandpass filter

(b) BBCES Aerosol Inlet:
Aerosol sample
DMA
Two-position valve
Dilution 5 lpm
CPC
OPC
MFC
MFC
MFC
He cylinder
CO₂ cylinder
Zero Air cylinder
NO₂ in N₂ cylinder

(c) NOAA Shared Aerosol Inlet:
2 lpm Impactor with 1 μm cutpoint
Silica gel dryer
NO₃ scrubber
Thermodenuder Bypass
Two-position valve
Thermodenuder #1
Thermodenuder #2
Thermodenuder #3
1 lpm Mixing volume
To BBCES Aerosol Inlet

Dilution 40–80 lpm
AMS
SP2
AMS
Other Instruments

2 vlpm

WG345
WG320
Diode laser 974 nm
Aerosol, He, or CO₂ flow
To MFC and pump

BBCES (360–385 nm)
22.1 mm inner diameter, 101.5 cm long cavity
99.97% reflective at 365 nm

BBCES (400–720 nm)
22.1 mm inner diameter, 101.5 cm long cavity
99.90–99.98% reflective at 400–720 nm

Fiber-coupling

Xenon plasma

Dilution

NO₃ scrubber

Thermodenuder #1
Thermodenuder #2
Thermodenuder #3

SP2

He cylinder
Zero Air cylinder
NO₂ in N₂ cylinder

Fiber-coupling

WG345
WG320

Custom interference filter

Mirror

F/3.1 lens

Optical fiber bundle

Bandpass filter

BBCES (360–385 nm)

22.1 mm inner diameter, 101.5 cm long cavity
99.97% reflective at 365 nm

BBCES (400–720 nm)

22.1 mm inner diameter, 101.5 cm long cavity
99.90–99.98% reflective at 400–720 nm

F/3.1 lens

Optical fiber bundle

Bandpass filter

He cylinder
Zero Air cylinder
NO₂ in N₂ cylinder

2 vlpm Impactor with 1 μm cutpoint
Silica gel dryer
NO₃ scrubber

Thermodenuder Bypass
Two-position valve
Thermodenuder #1
Thermodenuder #2
Thermodenuder #3

1 lpm Mixing volume
To BBCES Aerosol Inlet

Dilution

AMS

Other Instruments