CMDL aerosol data file Format Specifications *[v2.31]*

revisions:	TAK	930527	[1.0]	draft
	TAK	930607	[1.2]	added bm_ file
	TAK	930609	[1.3]	now comma separated. a__ file collapsed (no mvc's)
	TAK	930622	[1.31]	added ft_
	TAK	930812	[1.4]	added RH_sample and dp_neph_imp_hPa to end of am_ file.
	TAK	931222	[1.41]	added hourly average file specs
	TAK	940224	[1.44]	format of hourly file changed: DOY rounded to 2 decimal places, flags bit 4:1 reworded
	TAK	940518	[1.5]	adapted from WSA format document, updated naming conventions for clarity
	TAK	940608	[1.6]	added meteorological data file format specifications and naming convention
	TAK	940715	[1.7]	added fields 29-32 to am_ file.
	TAK	940726	[1.8]	revised "averaged" state files, added geometric means
	TAK	941007	[1.9]	Instances of Bap have been replaced with Bap_G
	TAK	941130	[2.0]	Add Bbsp_Bkg to nc_, redefine fields 8-11 in nm_. Due to TSI neph online.
	TAK	950615	[2.1]	added "lm_" filetype
	JAO	960423	[2.2]	added wind sector flag to FLAGS field
	JAO	960703	[2.3]	revised "me_" format
	JAO	970505	[2.31]	corrected minor errors in nm_ field descriptions

1. This document describes the format used to store aerosol data files for internal use at CMDL. There are three basic types of files: ambient aerosol, ambient meteorology, and sampling system state.

2. Separate data and header files are used for each type of data. The data fields for ambient data are identical for all stations (although truncated records may be used for stations with limited instrumentation), while different data fields may be used in the sampling system state files from the various stations. There may even be several different types of sampling system state files for some sites.

3. All data files are plain ASCII text, in comma-separated, fixed-length fields. The end of a record is denoted by a linefeed character (ASCII hex 10), which optionally may be preceded by a carriage return.

4. The first line in the header file identifies the parameter in each data field. Subsequent lines in the header files contain instrument and sampling system specifications (model/serial number, wavelengths, particle size ranges), along with a time-stamp indicating when the specifications became effective.

5. Basic aerosol data file record format: (stations with minimal instrumentation may truncate the records at the point where no additional data are available). Leading plus signs are replaced with a blank. This is the common format for the basic measurements obtained at a high time resolution. Missing value codes are always positive.

Naming Convention

File names consist of content, status, time codes, and station identifiers. The general format is:

```
<FC><s><timecode>.<STN>
```

<FC> is a two character (with the exception of "volumes") File Code that indicates the general content.

File-Code	General content
`a_`	aerosol data
`ad`	aerosol digital data
`af`	aerosol filter data
`am`	aerosol monitor data
`b_`	UPS data
`bm`	UPS monitor records
`ft`	Filter sample time records
`lm`	CLAP monitor records
`m_`	general monitor info
`me`	ambient meteorological data
`nc`	neph calibration results
`ne`	neph state errors
`nm`	neph monitor data
`ns`	neph state data
`ss`	seconds and samples per sample period
`volumes`	Weekly cumulative filter volume records

<s> is a one character Status Code indicating the processing state of the file

Status-Code	Data form
`_`	as high-resolution (usually minute) data
`h`	as hourly averages
`d`	as daily averages
`m`	as monthly averages
`A`	"generic" average-formatted file
`t`	as 2-hour averages
`w`	as weekly averages

<timecode> is a string indicating time interval of contents

Timecode	Data Time Interval
`X`	the most recently processed data (usually one day)
`cum`	"cumulative", variable interval
`head`	no time interval - this is a header file
`<yr>w<wk>`	one week of year <yr> beginning with week <wk>
`<yr>Q<q>`	one quarter of year <yr> beginning with quarter <q>
`<yr>`	year <yr>
`<yr>d<doy>`	one day of year <yr> beginning with DOY <doy>
`<yr>m<mn>`	one month of year <yr> beginning with month <mn>

<STN> is the three character station identifier (source of the data).

Station ID	Station location
bnd	Bondville, Illinois, USA
brw	Barrow, Alaska, USA
cpo	Cheeka Peak, Washington, USA
kpo	K’puszta Observatory, Hungary
lar	Laramie, Wyoming, USA
mlo	Mauna Loa Observatory, Hawaii, USA
nwr	Ward, Colorado, USA
p-3	P3 flight
smo	American Samoa
spo	South Pole Observatory
wsa	Sable Island, Nova Scotia, Canada

Field Separator

All files currently have a comma as the field separator.

Field definition

Each File Code, Status Code combination has a specific format, as described below:

File: `a__<timecode>.<STN>`

Col #	Name	Format and Missing Value Code (mvc)	Description	Scanf info.
1	Station_ID	WSA	3-character ID code	%3s
2	Year	1993	Year	%4d
3	StartTime_UTC	123.12345	DOY and FRACTIONAL_DOY (January 1 = 1)	%9.5f
4	Flags	0011	4-character code representing system status.	%4s
5	CN_control	±9.999e-99	Aerosol number concentration (cm^{-3}) at ambient T&P, measured with CNC on "control" inlet	%10.3e
6	CN_ambient	±9.999e-99	Aerosol number concentration (cm^{-3}) at ambient T&P, measured with CNC on "ambient" inlet	%10.3e
7	Bap_G	±9.999e-99	Aerosol light absorption coefficient (m^{-1}), reported at ambient T&P, green channel.	%10.3e
8	Bsp_B	±9.999e-99	Aerosol total light scattering coefficient (m^{-1}), reported at ambient T&P, blue channel.	%10.3e
9	Bsp_G	±9.999e-99	Aerosol total light scattering coefficient (m^{-1}), reported at ambient T&P, green channel.	%10.3e
10	Bsp_R	±9.999e-99	Aerosol total light scattering coefficient (m^{-1}), reported at ambient T&P, red channel.	%10.3e
11	Bbsp_B -or- Bsp_NIR	±9.999e-99	Aerosol backwards-hemispheric light scattering coefficient (m^{-1}), reported at ambient T&P, blue channel. For stations equipped with 4-wavelength nephelometers, this field is aerosol total light scattering coefficient (m^{-1}), reported at ambient T&P, near infrared channel.	%10.3e
12	Bbsp_G	±9.999e-99	Aerosol backwards-hemispheric light scattering coefficient (m^{-1}), reported at ambient T&P, green channel.	%10.3e
13	Bbsp_R	±9.999e-99	Aerosol backwards-hemispheric light scattering coefficient (m^{-1}), reported at ambient T&P, red channel.	%10.3e
14	Neph_RH	±999	Relative Humidity (percent) inside nephelometer	%4d
15	Neph_T	±99.9	Temperature (deg C) inside nephelometer	%5.1f
16	Neph_P	±9999.9	Pressure (hPa) inside nephelometer	%7.1f
17	WS	±99.9	local wind speed ($m\ s^{-1}$)	%5.1f
18	WD	±999	local wind direction (degrees True)	%4d

File: `ad_<timecode>.<STN>`

Col #	Name	Format and Missing Value Code (mvc)	Description	Scanf info
1	Station_ID	WSA	3-character ID code	%3s
2	Year	1993	Year	%4d
3	Time_UTC	123.12345	DOY and FRACTIONAL_DOY (January 1 = 1)	%9.5f
4	Flags	0011	4-character code representing system status.	%4s
5	Analyzers_ON	0	1=analyzers ON, 0 = analyzers OFF	%1d
6	Active_Filter	9	Valid filters are 1-8. If more than one filter is active at any one time, or if no filters are active, this field is set to zero.	%1d
7	Filter_Error	999	0=no filter error Otherwise, this field contains the decimal value of a byte composed of the status of each filter. Each filter is a bit (1=filter on, 0=filter off), and are organized such that position 0 (LSB) = filter 1, position 1 = filter 2, up to position 7 respectively.	%3d
8	Unused1	0	unused digital input	%1d
9	Unused2	0	unused digital input	%1d
10	Unused3	0	unused digital input	%1d
11	Unused4	0	unused digital input	%1d

File: `af_<timecode>.<STN>`

Col #	Name	Format and Missing Value Code (mvc)	Description	Scanf info
1	Station_ID	WSA	3-character ID code	%3s
2	Year	1993	Year	%4d
3	StartTime_UTC	123.12345	DOY and FRACTIONAL_DOY (January 1 = 1)	%9.5f
4	F_Monitor	(string of variable length)	String indicating filter change, and cumulative filter volume information. This string may contain embedded commas, spaces and/or tabs.	%s

File: `am_<timecode>.<STN>`

Col #	Name	Format and Missing Value Code (mvc)	Description	Scanf info
1	Station_ID	WSA	3-character ID code	%3s
2	Year	1993	Year	%4d
3	StartTime_UTC	123.12345	DOY and FRACTIONAL_DOY (January 1 = 1)	%9.5f
4	Q_filter_lpm	±99.99	Instantaneous air quantity through active filter (lpm)	%6.2f
5	Q_analyzer_lpm	±99.99	Instantaneous air quantity through analyzer (lpm)	%6.2f
6	Q_3_lpm	±99.99	Instantaneous air quantity through spare line	%6.2f
7	Q_4_lpm	±99.99	Instantaneous air quantity through spare line	%6.2f
8	Q_bypass_lpm	±99.99	Instantaneous air quantity through bypass line.	%6.2f
9	Q_CNdrier_lpm	±99.99	Instantaneous air quantity through CN drier line.	%6.2f
10	Q_CN_lpm	±99.99	Instantaneous air quantity through CN.	%6.2f
11	T_sample_degC	±99.9	Temperature of current air sample. (deg C)	%5.1f
12	T_stack_degC	±99.9	Temperature of air through stack. (deg C)	%5.1f
13	T_pumpbox_degC	±99.9	Temperature inside pumpbox. (deg C)	%5.1f
14	T_heater_deg C	±99.9	Temperature of heating tape. (deg C)	%5.1f
15	T_uMAC_degC	±99.9	Temperature measured at μMAC panel. (deg C)	%5.1f
16	dP_Pitot_hPa	±9.999	ΔPressure across stack. (hPa)	%6.3f
17	dP_Purge_hPa	±999.9	ΔPressure across purge line. (hPa)	%6.1f
18	dP_F1_hPa	±999.9	ΔPressure across filter 1. (hPa)	%6.1f
19	dP_F2_hPa	±999.9	ΔPressure across filter 2. (hPa)	%6.1f
20	dP_F3_hPa	±999.9	ΔPressure across filter 3. (hPa)	%6.1f
21	dP_F4_hPa	±999.9	ΔPressure across filter 4. (hPa)	%6.1f
22	dP_F5_hPa	±999.9	ΔPressure across filter 5. (hPa)	%6.1f
23	dP_F6_hPa	±999.9	ΔPressure across filter 6. (hPa)	%6.1f
24	dP_F7_hPa	±999.9	ΔPressure across filter 7. (hPa)	%6.1f
25	dP_F8_hPa	±999.9	ΔPressure across filter 8. (hPa)	%6.1f
26	V_uMAC_V	±9.999	Line voltage supplying power to μMAC. (volts)	%6.3f
27	RH_sample	±999.9	Relative humidity of sample	%6.1f
28	dP_neph_im_hPa	±999.9	ΔPressure across neph impactor valve (hPa)	%6.1f
29	dP_spare1	±999.9	ΔPressure spare1 (hPa)	%6.1f
30	dP_spare2	±999.9	ΔPressure spare2 (hPa)	%6.1f
31	T_rack	±99.9	Temperature inside the rack. (deg C)	%5.1f
32	P_station	±9999.9	station pressure (hPa)	%7.1f

File: `b__<timecode>.<STN>`

Col #	Name	Format and Missing Value Code (mvc)	Description	Scanf info
1	Station_ID	WSA	3-character ID code	%3s
2	Year	1993	Year	%4d
3	StartTime_UTC	123.12345	DOY and FRACTIONAL_DOY (January 1 = 1)	%9.5f

4	AC_Volts_In	±999	AC Voltage supplying UPS	%4d
5	AC_Volts_Out	±999	AC Voltage UPS is supplying as output	%4d
6	AC_Amps_Out	±999.9	AC Amps UPS is currently supplying	%6.1f
7	Batt_DC_amp	±999.9	DC Amps of UPS Battery	%6.1f
8	Batt_DC_V	±999.9	DC Voltage of UPS Battery	%6.1f
9	Frequency	±999.9	Frequency of line supplying UPS power (Hz)	%6.1f
10	UPS_Temp	±999	Temperature inside UPS (deg C)	%4d

File: `bm_<timecode>.<STN>`

Col #	Name	Format and Missing Value Code (mvc)	Description	Scanf info
1	Station_ID	WSA	3-character ID code	%3s
2	Year	1993	Year	%4d
3	StartTime_UTC	123.12345	DOY and FRACTIONAL_DOY (January 1 = 1)	%9.5f
4	B_Monitor	(string of variable length)	String containing an event report generated by the UPS program. This string may contain embedded spaces.	%s

File: `ft_<timecode>.<STN>`

Col #	Name	Format and Missing Value Code (mvc)	Description	Scanf info
1	Station_ID	WSA	3-character ID code	%3s
2	EndYear	1993	End Year of sample period	%4d
3	EndTime_UTC	123.12345	DOY and FRACTIONAL_DOY (January 1 = 1) Endtime of sample period	%9.5f
4	StartYear	1993	Start Year of sample period	%4d
5	StartTime_UTC	123.12345	DOY and FRACTIONAL_DOY StartTime of sample period	%9.5f
6	Cum_sec	999999	Seconds elapsed during sampling period.	%6d
7	Filter	9	Filter that is being sampled this period	%1d

File: `lm_<timecode>.<STN>`

Col #	Name	Format and Missing Value Code (mvc)	Description	Scanf info
1	Station_ID	WSA	3-character ID code	%3s
2	Year	1993	Year	%4d

3	StartTime_UTC	123.12345	DOY and FRACTIONAL_DOY (January 1 = 1)	%9.5f
4	Q_clap_slpm	±9.99	CLAP flow rate	%5.2f
5	Tr	9.999	Transmittance	%5.3f
6	I_sample	9999999	Sample Intensity	%7d
7	I_ref	9999999	Reference Intensity	%7d

File: `m__<timecode>.<STN>`

Col #	Name	Format and Missing Value Code (mvc)	Description	Scanf info
1	Station_ID	WSA	3-character ID code	%3s
2	Year	1993	Year	%4d
3	StartTime_UTC	123.12345	DOY and FRACTIONAL_DOY (January 1 = 1)	%9.5f
4	M_Monitor	(string of variable length)	General system monitor notes and records. This string may contain embedded spaces and/or commas.	%s

File: `me_<timecode>.<STN>`

Col #	Name	Format and Missing Value Code (mvc)	Description	Scanf info
1	Station_ID	WSA	3-character ID code.	%3s
2	Year	1993	Year	%4d
3	StartTime_UTC	123.12345	DOY and FRACTIONAL_DOY (January 1 = 1)	%9.5f
4	T_ambient	±99.9	local temperature (deg C)	%5.1f
5	RH_ambient	±999.9	local relative humidity (%)	%6.1f
6	P_ambient	±9999.9	local pressure (hPa)	%7.1f
7	WS	±99.9	local wind speed (m s^{-1})	%5.1f
8	WD	±999	local wind direction (degrees True)	%4d
9	Visibility	±999.9	local visibility (km)	%6.1f
10	Weather	99	2-digit code for current weather, "TI" value Type Intensity 0 none -- 1 unknown very light 2 drizzle light 3 rain moderate 4 snow heavy 5 hail very heavy 6 freezing unknown 7 freezing drizzle 8 freezing rain	%2d
11	Cloud_base_m	9999	height of lowest layer of cloud, in meters above ground level	%4d
12	Opacity_layer1	99	opacity of lowest layer of cloud, in 10th's	%2d
13	Opacity_total	99	opacity of total cloud cover, in 10th's	%2d

14	Fog1	999	frequency of fog with LWC>0.05 g/m3 (%)	%3d
15	Fog2	999	frequency of fog with LWC>0.15 g/m3 (%)	%3d
16	Solar_flux	9999	broadband solar irradiance, W/m2	%4d

File: `nc_<timecode>.<STN>`

Col #	Name	Format and Missing Value Code (mvc)	Description	Scanf info
1	Station_ID	WSA	3-character ID code	%3s
2	Year	1993	Year	%4d
3	EndTime_UTC	123.12345	DOY and FRACTIONAL_DOY (January 1 = 1) of the end of the calibration.	%9.5f
4	Bsp_B_bkg	±9.999e-99	Background blue (m^{-1})	%10.3e
5	Bsp_G_bkg	±9.999e-99	Background green (m^{-1})	%10.3e
6	Bsp_R_bkg	±9.999e-99	Background red (m^{-1})	%10.3e
7	Bbsp_B_bkg	±9.999e-99	Backscatter Background blue (m^{-1})	%10.3e
8	Bbsp_G_bkg	±9.999e-99	Backscatter Background green (m^{-1})	%10.3e
9	Bbsp_R_bkg	±9.999e-99	Backscatter Background red (m^{-1})	%10.3e

File: `ne_<timecode>.<STN>`

Col #	Name	Format and Missing Value Code (mvc)	Description	Scanf info
1	Station_ID	WSA	3-character ID code	%3s
2	Year	1993	Year	%4d
3	StartTime_UTC	123.12345	DOY and FRACTIONAL_DOY (January 1 = 1)	%9.5f
4	State	9999	Code representing nephelometer system state	%4s
5	Code	9999999999999999	16 digit code indicating nephelometer status (4 digits on TSI nephelometers)	%16s

File: `nm_<timecode>.<STN>`

Col #	Name	Format and Missing Value Code (mvc)	Description	Scanf info
1	Station_ID	WSA	3-character ID code	%3s
2	Year	1993	Year	%4d

3	StartTime_UTC	123.12345	DOY and FRACTIONAL_DOY (January 1 = 1)	%9.5f
4	Press_hPa	±9999.9	Pressure inside nephelometer. (hPa)	%7.1f
5	Temp_K	±999.9	Temperature inside nephelometer (K)	%5.1f
6	Ref_green	±9.999e-99	Nephelometer Green Reference (Hz)	%10.3e
7	Lamp_neph_V	±9.999e-99	Voltage supplying nephelometer lamp (V)	%10.3e
8	Lamp_I_A	±9.9	Current supplying nephelometer lamp (A)	%4.1f
9	Neph_RH	±99.9	Relative Humidity (%) inside neph	%5.1f
10	T_inlet	±999.9	Temperature of inlet air (K)	%6.1f
11	Aux_BNC_in	999	BNC Auxiliary input (mV)	%4d

...before format v2.0, these fields are:

8	Bkg_blue_1_m	±9.999e-99	Background blue (m^{-1})	%10.3e
9	Bkg_green_1_m	±9.99e9-99	Background green (m^{-1})	%10.3e
10	Bkg_red_1_m	±9.99e9-99	Background red (m^{-1})	%10.3e

File: `ns_<timecode>.<STN>`

[same format as ***`ne_<timecode>.<STN>`****]*

File: `ss_<timecode>.<STN>`

Col #	Name	Format and Missing Value Code (mvc)	Description	Scanf info
1	Station_ID	WSA	3-character ID code	%3s
2	Year	1993	Year	%4d
3	StartTime_UTC	123.12345	DOY and FRACTIONAL_DOY (January 1 = 1)	%9.5f
4	seconds	±999	Elapsed seconds this sampling period	%4d
5	samples	±999	Number of samples taken this sampling period	%4d

File: `volumes<timecode>.<STN>`

Col #	Name	Format and Missing Value Code (mvc)	Description	Scanf info
1	Station_ID	WSA	3-character ID code	%3s
2	Year	1993	Year	%4d
3	StartTime_UTC	123.12345	DOY and FRACTIONAL_DOY (January 1 = 1)	%9.5f
4	Volume_info	(string)	Sampling volume information. (may contain embedded tabs, spaces, and/or commas)	%s

File: `a_[Ahmd]<timecode>.<STN>` ***[average format]***

Averages reported in fields 5 through 22 are by default the geometric average, and a corresponding geometric standard deviation. If the corresponding "N" in field 44 through 58 is negative, the average and standard deviation for that measurement is arithmetic, not geometric.

Col #	Name	Format and Missing Value Code (mvc)	Description	Scanf info
1	Station_ID	WSA	3-character ID code	%3s
2	Year	1993	Year	%4d
3	StartTime_UTC	123.12	Integer part is Day of Year, 1 = January 1. Fractional part is time at the start of the averaging interval, UTC.	%6.2f
4	Flags	0011	4-character code representing system status.	%4s
5	CN_control	±9.999e-99	Aerosol number concentration (cm^{-3}) at ambient T&P, measured with CNC on "control" inlet	%10.3e
6	CN_ambient (default size)	±9.999e-99	Aerosol number concentration (cm^{-3}) at ambient T&P, measured with CNC on "ambient" inlet	%10.3e
7	Bap_G (default size)	±9.999e-99	Aerosol light absorption coefficient (m^{-1}), reported at ambient T&P, green channel.	%10.3e
8	Bsp_B (default size)	±9.999e-99	Aerosol total light scattering coefficient (m^{-1}), reported at ambient T&P, blue channel.	%10.3e
9	Bsp_G (default size)	±9.999e-99	Aerosol total light scattering coefficient (m^{-1}), reported at ambient T&P, green channel.	%10.3e
10	Bsp_R (default size)	±9.999e-99	Aerosol total light scattering coefficient (m^{-1}), reported at ambient T&P, red channel.	%10.3e
11	Bbsp_B -or- Bsp_NIR (default size)	±9.999e-99	Aerosol backwards-hemispheric light scattering coefficient (m^{-1}), reported at ambient T&P, blue channel. For stations equipped with 4-wavelength nephelometers, this field is aerosol total light scattering coefficient (m^{-1}), reported at ambient T&P, near infrared channel.	%10.3e
12	Bbsp_G (default size)	±9.999e-99	Aerosol backwards-hemispheric light scattering coefficient (m^{-1}), reported at ambient T&P, green channel.	%10.3e
13	Bbsp_R (default size)	±9.999e-99	Aerosol backwards-hemispheric light scattering coefficient (m^{-1}), reported at ambient T&P, red channel.	%10.3e
14	Neph_RH	±999	Relative Humidity (percent) inside nephelometer	%4d
15	CN_ambient, (alternate size)	±9.999e-99	Aerosol number concentration (cm^{-3}) at ambient T&P, measured with CNC on "ambient" inlet	%10.3e
16	Bap_G, (alternate size)	±9.999e-99	Aerosol light absorption coefficient (m^{-1}), reported at ambient T&P, green channel.	%10.3e
17	Bsp_B, (alternate size)	±9.999e-99	Aerosol total light scattering coefficient (m^{-1}), reported at ambient T&P, blue channel.	%10.3e
18	Bsp_G, (alternate size)	±9.999e-99	Aerosol total light scattering coefficient (m^{-1}), reported at ambient T&P, green channel.	%10.3e
19	Bsp_R, (alternate size)	±9.999e-99	Aerosol total light scattering coefficient (m^{-1}), reported at ambient T&P, red channel.	%10.3e

20	Bbsp_B -or- Bsp_NIR, (alternate size)	±9.999e-99	Aerosol backwards-hemispheric light scattering coefficient (m^{-1}), reported at ambient T&P, blue channel. For stations equipped with 4-wavelength nephelometers, this field is aerosol total light scattering coefficient (m^{-1}), reported at ambient T&P, near infrared channel.	%10.3e
21	Bbsp_G, (alternate size)	±9.999e-99	Aerosol backwards-hemispheric light scattering coefficient (m^{-1}), reported at ambient T&P, green channel.	%10.3e
22	Bbsp_R, (alternate size)	±9.999e-99	Aerosol backwards-hemispheric light scattering coefficient (m^{-1}), reported at ambient T&P, red channel.	%10.3e
23	SD_CN_control	±9.999e-99	Standard deviation of CN_control data this period	%10.3e
24	SD_CN_ambient	±9.999e-99	Standard deviation of CN_ambient data this period	%10.3e
25	SD_Bap_G	±9.999e-99	Standard deviation of Bap_G data this period	%10.3e
26	SD_Bsp_B	±9.999e-99	Standard deviation of Bsp_B data this period	%10.3e
27	SD_Bsp_G	±9.999e-99	Standard deviation of Bsp_G data this period	%10.3e
28	SD_Bsp_R	±9.999e-99	Standard deviation of Bsp_R data this period	%10.3e
29	SD_Bbsp_B -or- SD_Bsp_NIR	±9.999e-99	Standard deviation of Bbsp_B or Bsp_NIR data this period	%10.3e
30	SD_Bbsp_G	±9.999e-99	Standard deviation of Bbsp_G data this period	%10.3e
31	SD_Bbsp_R	±9.999e-99	Standard deviation of Bbsp_R data this period	%10.3e
32	SD_Neph_RH	±999	Standard deviation of Neph_RH data this period	%4d
33	SD_CN_ambient, (alternate size)	±9.999e-99	Standard deviation of CN_ambient (alternate size) data this period	%10.3e
34	SD_Bap, (alternate size)	±9.999e-99	Standard deviation of Bap (alternate size) data this period	%10.3e
35	SD_Bsp_B, (alternate size)	±9.999e-99	Standard deviation of Bsp_B (alternate size) data this period	%10.3e
36	SD_Bsp_G, (alternate size)	±9.999e-99	Standard deviation of Bsp_G (alternate size) data this period	%10.3e
37	SD_Bsp_R, (alternate size)	±9.999e-99	Standard deviation of Bsp_R (alternate size) data this period	%10.3e
38	SD_Bbsp_B -or- SD_Bsp_NIR, (alternate size)	±9.999e-99	Standard deviation of Bbsp_B or Bsp_NIR (alternate size) data this period	%10.3e
39	SD_Bbsp_G, (alternate size)	±9.999e-99	Standard deviation of Bbsp_G (alternate size) data this period	%10.3e
40	SD_Bbsp_R, (alternate size)	±9.999e-99	Standard deviation of Bbsp_R (alternate size) data this period	%10.3e
41	N_CN_control	±99999	Number of data points used in computation	%6d
42	N_CN_ambient	±99999	Number of data points used in computation	%6d
43	N_Bap_G	±99999	Number of data points used in computation	%6d
44	N_Bsp_B	±99999	Number of data points used in computation	%6d
45	N_Bsp_G	±99999	Number of data points used in computation	%6d
46	N_Bsp_R	±99999	Number of data points used in computation	%6d
47	N_Bbsp_B -or- N_Bsp_NIR	±99999	Number of data points used in computation	%6d
48	N_Bbsp_G	±99999	Number of data points used in computation	%6d

49	N_Bbsp_R	±99999	Number of data points used in computation	%6d
50	N_Neph_RH	±99999	Number of data points used in computation	%6d
51	N_CN_ambient, (alternate size)	±99999	Number of data points used in computation	%6d
52	N_Bap_G, (alternate size)	±99999	Number of data points used in computation	%6d
53	N_Bsp_B, (alternate size)	±99999	Number of data points used in computation	%6d
54	N_Bsp_G, (alternate size)	±99999	Number of data points used in computation	%6d
55	N_Bsp_R, (alternate size)	±99999	Number of data points used in computation	%6d
56	N_Bbsp_B -or- N_Bsp_NIR, (alternate size)	±99999	Number of data points used in computation	%6d
57	N_Bbsp_G, (alternate size)	±99999	Number of data points used in computation	%6d
58	N_Bbsp_R, (alternate size)	±99999	Number of data points used in computation	%6d

FLAGS Field Specification

Char./ Bit Pos.	Description	Bit set	Bit clear
1	Not used	"0" used as placeholder	
2	Not used	"0" used as placeholder	
3	Sampling configuration, 4-bit hex digit (0-F)	Set	Clear
3:3	Not used		Always
3:2	Not used		Always
3:1	Not used		Always
3:0	Analyzer impactor state	Alternate size range (valve closed)	Default size range (valve open)
4	Sampling conditions, 4-bit hex digit (0-F)	Set	Clear
4:3	Not used		Always
4:2	Wind sector control	Wind speed or direction indicate local pollution is likely	Local pollution absent
4:1	Manual contamination check	Local pollution present	Local pollution absent
4:0	Automatic contamination controller	Local pollution present	Local pollution absent

Characters 3 and 4 should never be greater than "9" to ensure program compatibility.

The default size range is defined to be the total from 0-10μm. The alternate size range is from 0-1μm.