

# F&J SPECIALTY PRODUCTS, INC.

*The Nucleus of Quality Air Monitoring Programs*

## ELITE DIGITAL LIGHT (EDL) LOW VOLUME AIR SAMPLERS

100 — 120 VAC

### Digital Flow Meter Electronics



DF-EDL-HP



DF-EDL-28B



DF-EDL-300W-HT



DF-EDL-22

### Global Air Sampler Electronics



GAS-EDL-HP



GAS-EDL-28B



GAS-EDL-300W-HT



GAS-EDL-22

Rev: 12 March 2020

# ELITE DIGITAL LIGHT (EDL) AIR SAMPLER Model DF-EDL-HP

## NOTABLE FEATURES:

- State-of-the-Art Electronics
- Lightweight: ~16 lbs. (7.26 kg)
- Powerful: Flow rate to 170 LPM
- Very low maintenance
- Automatic Flow Control
- Operator selectable Ambient or Reference flow T and P Conditions
- Auto shut-off on time or volume
- RS232 Communication port
- Brushless motor
- Easily replaceable HEPA filters
- Optional Vertical Mount for Filter Holders



“Lightweight: ~ 16 lbs.”

## GENERAL DESCRIPTION:

F&J Model DF-EDL-HP is a powerful small foot print light weight AC/DC powered air sampling system operable from (1) line power or (2) an optional 24VDC external power source. This powerful air sampler is the lightest weight low volume air sampler available having similar flow rate capacity.

The DF-EDL-HP air sampler is well suited for various types of air sampling applications such as REMP, plant emissions and work area monitoring programs. The unit is also equipped with two replaceable HEPA filters that filter the cooling air. It can be utilized in remote air sampling applications powered from solar panels or wind turbines.

The F&J Digital Flowmeter technology provides maximum flexibility, flow rate normalization, automatic flow control and opportunities for control by a PC device through the RS232 communication port.

The typical operating flow range is 20 - 170 SLPM (0.7 – 6 SCFM). The actual flow range implemented will depend on the filter(s) utilized by the customer.

### Typical Maximum Flow Rates for Various Filter Media Combinations

Filter Media	Flow Rate (SCFM)	Flow Rate (SLPM)	Media D.P. (“Hg)	Media D.P. (“H <sub>2</sub> O)
FP47	3.49	98	3.22	43.78
FP47M	5.47	155	2.13	28.96
FP47M2	8.43	238	1.31	17.81
FP47 & TE2C	2.76	78.11	3.55	48.26
FP47M & TE3C	4.28	121	2.85	38.75
FP47M2 & TE1C	5.36	151.69	1.79	24.34
FP20M	5.40	152.82	1.80	24.47
FP20M & TE2C	3.83	108.39	2.95	40.11
FP20M & TE3C	4.22	119.43	2.67	36.30
FP40M	11	310	0.77	10.47

# DF-EDL-HP ELITE DIGITAL LIGHT Low Volume Air Samplers

## SPECIFICATIONS:

**Pump Type:** Centrifugal blower

**Maximum Flowrate:**

155 LPM - Typical w/47 mm FP47M glass fiber media

230+ LPM – Free air flow capacity

**Power Source:**

Line Power; 100VAC to 120VAC

External DC Source – 24VDC (option)

**Maximum Current Draw:** 4 A maximum on line power  
10 A maximum on 24 VDC

**Filter Holder Fitting:**

3/8 FNPT quick disconnect

**Handle:** Durable plastic

**Weight:** 16 lbs. (7.26 kg)

**Installation Category:** Pollution Degree 2

**Enclosure Rating:** IPX2

**Dimensions:** 12.5" × 11" × 14" (32 × 28 × 36 cm)

**Average dB:** 74.6

**Operating Temperature Range:**

14°F to 122°F (-10°C to 50°C)

**Display:** Bright LED (6 character, 1.2 cm H)

**Elapsed Time:** DD:HH:MM up to 168 hours

**Flow Control:**

Adjustable from keypad between 20-180 LPM

**Flow Accuracy:** ±4.0% of Full Scale

**Factory Settable Reference T and P**

Classical STP	0°C, 1 ATM
Normal T and P	20°C, 1 ATM
Modified Normal T and P	70°F, 1 ATM
Standard Ambient T and P	25°C, 1 ATM

## OPTIONS:

- Data Storage Device (P/N: 232FCDS D)
- Secure Digital Card (P/N: 372239)
- Flash card Reader (P/N: SDDR-199-A20)
- 24VDC External power connector (P/N: 24VDCOPT)
- DC voltage booster to enable operation from 12VDC (P/N: 24VDCOPT-B)

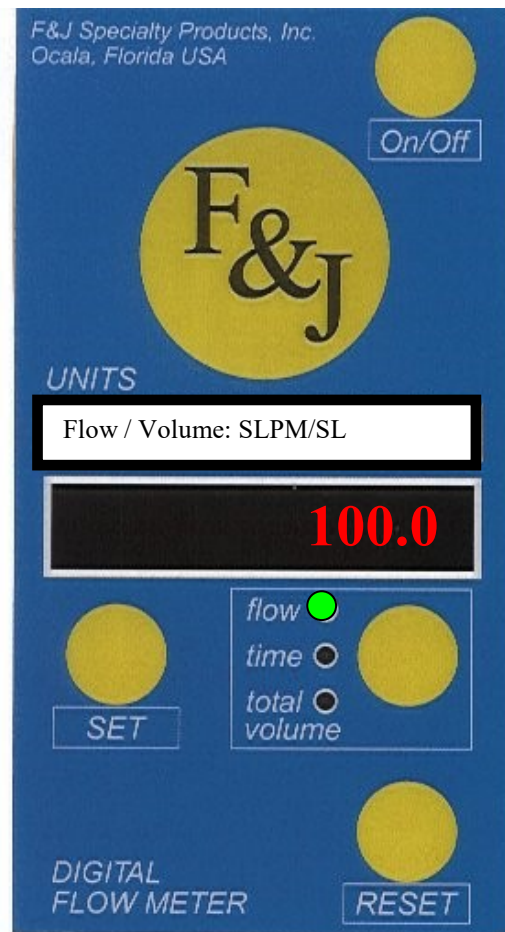
## Standard Combination Filter Holders Available:

FILTER HOLDER MODEL	CHARCOAL CARTRIDGE DIMENSIONS	PARTICULATE PAPER DIAMETER
FJ-05P	F&J Model B	2" or 50 mm
FJ-21P	F&J Model C	2" or 50 mm
FJ-35P	F&J Model B	47 mm
FJ-46P	F&J Model C	47 mm
FJ-51P	F&J Model M	2" or 50 mm
FJ-53P	F&J Model M	47 mm

## Available Engineering Units for Flow and Volume:

- sccm / scc
- SLPM / SLP
- SCFM / SCF
- SCMH / SCM
- SCMM/SCM

## Digital Flowmeter Keypad/Display



## ELITE DIGITAL LIGHT (EDL) AIR SAMPLER Model DF-EDL-28B

### NOTABLE FEATURES:

- Precision machined DP flow sensor
- State-of-the-Art electronics
- Flow rate and volume measurements corrected to factory settable Reference Temperature and Pressure
- Automatic electronic flow control
- Display in English or various metric units
- RS-232 communication port
- Flow rate accuracy:  $\pm 4.0\%$  Full Scale
- Auto zero calibration feature of flow sensor
- Auto shut off on time or volume
- Brushless Motor
- Maintenance free vacuum system
- 100 – 120 VAC; 50/60 Hz, 1PH



### GENERAL DESCRIPTION:

F&J Model DF-EDL-28B is a powerful small foot print light weight AC/DC powered air sampling system operable from a line power source. This powerful air sampler is light weight for a low volume air sampler available having similar flow rate capacity. The pump is mounted on a base plate within a weather resistant aluminum environmental enclosure having four rubber feet. Handles are provided on the enclosure to facilitate transportation. The enclosure rating is IPX3.

The DF-EDL-28B air sampler is well suited for various types of air sampling applications such as REMP, plant emissions and work area monitoring programs. It can also be utilized in remote air sampling applications powered from batteries charged by solar panels or wind turbines with an optional DC external power connector.

This unit is designed for continuous indoor or outdoor use. This unit can be adapted for tripod mounting if desired. Please consult the product specifications for the design temperature range and the installation category.

The typical operating flow range is 1 to 5 CFM (28 – 142 LPM). Actual flow range implemented will depend the filter(s) utilized by the customer.

## SPECIFICATIONS

<b>PUMP TYPE:</b>	Centrifugal blower
<b>MAXIMUM CAPACITY:</b>	6.0 CFM (170 LPM) @ 0" Hg Pressure drop
<b>ULTIMATE VACUUM:</b>	40" H <sub>2</sub> O (100mb) @ sea level
<b>POWER REQUIREMENTS:</b>	100-120VAC; 50/60Hz; 7 amperes, single phase
<b>CIRCUIT BREAKER PROTECTION:</b>	10 amperes
<b>ELECTRICAL CORD:</b>	All temperature, 3 wire, 14 gauge
<b>THERMAL OVERLOAD PROTECTION:</b>	Furnished as an integral part of the motor
<b>DIMENSIONS:</b>	19"L × 12.5"W × 13" H (48×30.5×33 cm)
<b>WEIGHT:</b>	19.8 lbs. (9 kg)
<b>INSTALLATION CATEGORY:</b>	Pollution Degree 3
<b>ENCLOSURE RATING:</b>	IPX3

## ELECTRONIC SPECIFICATIONS:

<b>AIR FLOW</b>	± 4.0% of full scale
<b>TEMPERATURE</b>	± 0.9°F (0.5°C)
<b>BAROMETRIC PRESSURE</b>	1% over measured range
<b>OPERATING TEMPERATURE:</b>	0° - 122°F (-17° - 50°C)
<b>STORAGE TEMPERATURE RANGE;</b>	-20° - 150°F (-29° - 65°C)
<b>CALIBRATION:</b>	Operator calibration-verification 1 per year
<b>COMMUNICATIONS INTERFACE:</b>	Single RS-232
<b>DISPLAY:</b>	Bright LED (6 character, 1.2 cm H)

## ON-BOARD CALCULATIONS:

Flow calculation from differential pressure value using best fit curve method

Flow correction to factory settable reference temperature and pressure

Auto-zero correction utilizing electro-pneumatic method to compensate for offset and drift (automatic, once every minute)

## OPTIONS:

- Data Storage Device (P/N: 232FCDS)
- Secure Digital Card (P/N: 372239)
- Flash Card Reader (P/N: SDDR-199-A20)

## COMBINATION FILTER HOLDERS AVAILABLE:

Durable plastic combination filter holders for F&J Model B, C or M charcoal cartridges and 47 mm, 2" or 50 mm diameter particulate filter paper are available. All models have quick disconnect function.

FILTER HOLDER MODEL	CHARCOAL CARTRIDGE DIMENSIONS	PARTICULATE PAPER DI- AMETER
FJ-05P	F&J Model B	2" or 50 mm
FJ-21P	F&J Model C	2" or 50 mm
FJ-35P	F&J Model B	47 mm
FJ-46P	F&J Model C	47 mm
FJ-51P	F&J Model M	2" or 50 mm
FJ-53P	F&J Model M	47 mm

## ELITE DIGITAL LIGHT (EDL) AIR SAMPLER Model DF-EDL-300W-HT

### NOTABLE FEATURES:

- State-of-the-Art Electronics
- Lightweight: ~18 lbs. (8.2 kg)
- Powerful: Flow rate to 300 LPM
- Very low maintenance
- Automatic Flow Control
- Operator selectable Ambient or Reference flow T and P Conditions
- Auto shut-off on time or volume
- RS232 Communication port
- Brushless motor
- Operation in high ambient temperatures



### GENERAL DESCRIPTION:

F&J Model DF-EDL-300W-HT is a powerful small foot print light weight AC/DC powered air sampling system operable from (1) line power or (2) an optional 24VDC external power source. This powerful air sampler is the lightest weight low volume air sampler available having similar flow rate capacity.

The DF-EDL-300W-HT air sampler is well suited for various types of air sampling application such as REMP, plant emissions and work area monitoring programs. It can also be utilized in remote air sampling applications powered from solar panels or wind turbines.

The F&J Digital Flowmeter technology provides maximum flexibility, flow rate normalization, automatic flow control and opportunities for control by a PC device through the RS232 communication port.

The typical operating flow range is 30 - 300 SLPM (1.1 – 10.6 SCFM). Actual flow range implemented will depend the filter(s) utilized by the customer.

### Typical Maximum Flow Rates for Various Filter Media Combinations

Filter Media	Flow Rate (SCFM)	Flow Rate (SLPM)	Media D.P.(“Hg)	Media D.P.(“H <sub>2</sub> O)
FP47	4.91	140	6.2	84.0
FP47M	7.91	224	4.3	58.8
FP47M2	10.4	296	3.0	40.2
FP47 & TE2C	3.71	105	6.9	93.5
FP47M & TE2C	5.47	155	6.1	83.0
FP47M & TE3C	5.90	167	6.6	90.0
FP47M2 & TE1C	7.81	221.1	3.8	51.40
FP20M	8.25	233.7	3.6	48.9
FP20M & TE2C	5.68	160.8	5.7	77.8
FP20M & TE3C	6.69	189.5	4.8	64.8
FP40M	10.47	390	1.9	25.09

# DF-EDL-300W-HT ELITE DIGITAL LIGHT Low Volume Air Samplers

## SPECIFICATIONS:

**Pump Type:** Centrifugal blower

**Maximum Flowrate:**

250 LPM - Typical FP47M glass fiber filter media  
300+ LPM – Free air flow capacity

**Power Source:**

Line Power; 100VAC to 120VAC  
Optional External DC Source – 24VDC (option)

**Maximum Current Draw:** 16 A maximum

**Filter Holder Fitting:**

3/8 FNPT quick disconnect

**Handle:** Durable plastic

**Weight:** 18 lbs. (8.2 kg)

**Installation Category:** Pollution Degree 2

**Enclosure Rating:** IPX2

**Dimensions:** 10" × 11" × 14" (26 × 28 × 36 cm)

**Operating Temperature Range:**

14°F to 122°F (-10°C to 50°C)

**Display:** Bright LED (6 character, 1,2 cm H)

**Elapsed Time:** DD:HH:MM up to 168 hours

**Flow Control:**

Adjustable from keypad between 30-270 LPM

**Flow Accuracy:** ±4.0% of Full Scale

**Factory Settable Reference T and P**

Classical STP	0°C, 1 ATM
Normal T and P	20°C, 1 ATM
Modified Normal T and P	70°F, 1 ATM
Standard Ambient T and P	25°C, 1 ATM

## OPTIONS:

- Data Storage Device (P/N: 232FCDS)
- Secure Digital Card (P/N: 372239)
- Flash card Reader (P/N: SDDR-199-A20)
- 24VDC External power connector (P/N: 24VDCOPT)
- Ruggedized Cellular Phone System (P/N: CASRPS-DFM)

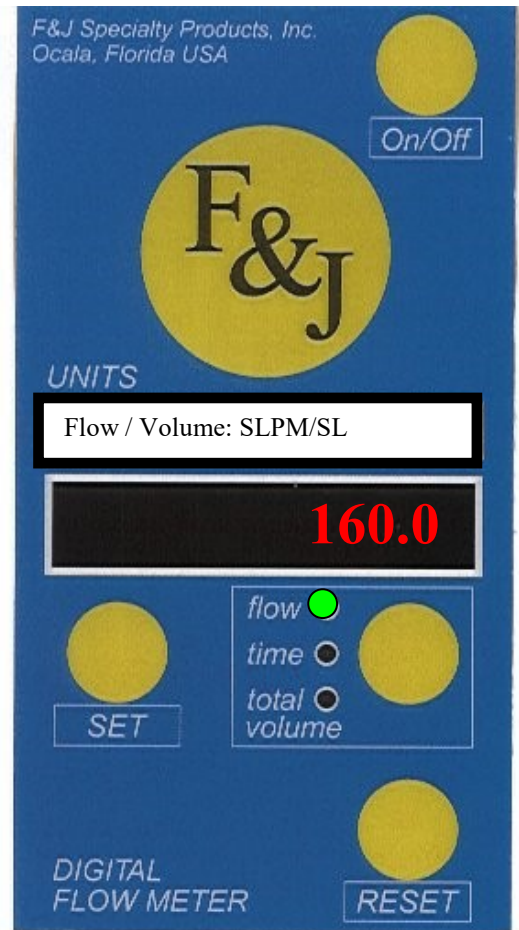
## Standard Combination Filter Holders Available:

FILTER HOLDER MODEL	CHARCOAL CARTRIDGE DIMENSIONS	PARTICULATE PAPER DIAMETER
FJ-05P	F&J Model B	2" or 50 mm
FJ-21P	F&J Model C	2" or 50 mm
FJ-35P	F&J Model B	47 mm
FJ-46P	F&J Model C	47 mm
FJ-51P	F&J Model M	2" or 50 mm
FJ-53P	F&J Model M	47 mm

## Available Engineering Units for Flow and Volume:

sccm / scc  
SLPM / SLP  
SCFM / SCF  
SCMH / SCM  
SCMM/SCM

## Digital Flowmeter Keypad/Display



# ELITE DIGITAL LIGHT (EDL) AIR SAMPLER

## Model DF-EDL-22

### NOTABLE FEATURES:

- Bright LED Display
- Flowrate and volume totalizations displayed are corrected to a factory settable reference Temperature and Pressure (4 options available)
  1. Classical STP 0°C, 1 Atm
  2. Normal T and P 20°C, 1 Atm
  3. Modified Normal T and P 21.1°C (70°F), 1 Atm or
  4. Standard Ambient T and P 25°C, 1 Atm
- Reference or ambient flow conditions are operator selectable
- Elapsed time meter
- RS232 Data export in ASCII format in comma delimited text string at various operator selectable download frequencies
- Storage of elapsed time and volume in the event of power outage
- Detection of zero flow condition after return of power to pause elapsed time until flow returns
- Auto shut-off on time or volume
- Selectable engineering units for flow and volume (to be set at factory)

<u>FLOW</u>	<u>VOLUME</u>
sccm	scc
SLPM	SL
SCMH	SCM



Full view illustrating the exterior gooseneck sampling system

### GENERAL DESCRIPTION:

The DF-EDL-22 environmental air sampling system with digital flowmeter is a low-volume air sampler consisting of brushless centrifugal blower with automatic electronic flow control. The vacuum air movement system is mounted on a removable base plate, which can be secured within the GFCI protected aluminum environmental weatherhouse, Model WH-3 having an enclosure rating of IPX3. The digital flowmeter has a large bright LED display.

The DF-EDL-22 environmental air sampling system is designed for continuous outdoor use. Please consult the product specifications for the design temperature range and the installation category. The standard product displays flow rate, elapsed time and totalized volume by operator selection.

The typical operating range is 0.5 to 4 CFM (14 – 115 LPM). Actual flow range implemented will depend the filter(s) utilized by the customer.

### Optional Features:

- Detection of zero flow condition to actuate a relay that provides an audible or visual alarm locally
- FlashCard Datalogger system to capture and store real-time data from the RS232 port.
 

Data Storage Device:	P/N: 232FCDS
Secure Digital Card:	P/N: 372239
FlashCard Reader:	P/N: SDDR-199-A20
- 24VDC External power connector



## SPECIFICATIONS:

<b>PUMP TYPE:</b>	Centrifugal blower
<b>MAXIMUM CAPACITY:</b>	6 CFM (180 LPM) at 0" Hg Pressure drop.
<b>ULTIMATE VACUUM:</b>	20"Hg (635 mm) Hg at sea level.
<b>POWER REQUIREMENTS:</b>	100-120VAC; 50/60 Hz @ 7 amperes; single phase
<b>CIRCUIT BREAKER PROTECTION:</b>	10 Amperes
<b>ELECTRICAL CORD:</b>	All-temperature, 3-wire, 14 gauge
<b>AIRFLOW REGULATOR:</b>	Electronic
<b>HANDLES:</b>	2-steel, on base plate
<b>DIMENSIONS:</b>	32"L × 26"W × 48 ¼" with Legs (81,3 × 66,0 × 122,6 cm)
<b>WEIGHT:</b>	82 lbs. (37.3 kg)
<b>OPERATING TEMPERATURE RANGE:</b>	32°-104° F (0°- 40° C)
<b>INSTALLATION CATEGORY:</b>	Pollution Degree 3
<b>ENCLOSURE RATING:</b>	IPX3
<b>VOLUME TOTALIZER:</b>	Volume totalizations corrected to a Reference T and P. Units for volume are factory set.

## ELECTRONIC SPECIFICATIONS:

### MEASUREMENT ACCURACY:

Air flow	+/- 4.0% of full scale
Temperature	+/- 2° F (1.1° C)
Barometric Pressure	2 % over measured range

**CALIBRATION:** Factory calibration 1 per year or Calibration Verification on-site

**COMMUNICATIONS INTERFACE:** RS-232

### ON-BOARD CALCULATIONS:

- Flow calculation from differential pressure value using best-fit curve method.
- Flow correction for standard temperature and pressure
- Auto-zero correction utilizing electro-pneumatic method to compensate for offset and drift (automatic, once every minute).

## OPTIONS:

**SAMPLING HEAD:** External gooseneck sampling head mounted to weatherhouse

**COMBINATION FILTER HOLDER:** Durable plastic or aluminum combination filter holders for F&J Model B, C or M charcoal cartridges and 47 mm, 2" or 50 mm diameter particulate filter paper are available. All models have quick-disconnect function.

## STANDARD COMBINATION FILTER HOLDERS:

(PLASTIC)			(ALUMINUM)
FILTER HOLDER MODEL	CHARCOAL CARTRIDGE DIMENSIONS	PARTICULATE PAPER DIAMETER	FILTER HOLDER MODEL
FJ-05P	F&J Model B	2" or 50 mm	FJ-05
FJ-21P	F&J Model C	2" or 50 mm	FJ-21
FJ-35P	F&J Model B	47 mm	FJ-35
FJ-46P	F&J Model C	47 mm	FJ-46
FJ-51P	F&J Model M	2" or 50 mm	FJ-51
FJ-53P	F&J Model M	47 mm	FJ-53

## ELITE DIGITAL LIGHT (EDL) AIR SAMPLER Model GAS-EDL-HP

### NOTABLE FEATURES:

- State-of-the-Art Electronics
- Lightweight: ~16 lbs. (7.26 kg)
- Powerful: Flow rate to 170 LPM
- Very low maintenance
- Automatic Flow Control
- Precision machined DP flow sensor
- Vacuum Fluorescent Display (VFD) 4 line x 24 character
- Flow rate accuracy:  $\pm 3\%$  Full Scale
- Auto zero calibration feature of flow sensor
- Multiple operator selectable data storage and transmission frequency rates
- Operator selectable engineering units and reference temperature and pressure valves
- Optional Isokinetic Sampling mode configuration
- Auto shut-off on time or volume
- Dual RS232 Communication port
- Brushless motor
- Easily replaceable HEPA filters
- Optional Vertical Mount for Filter Holders
- Optional 24VDC input for external DC power operation



“Lightweight: ~ 16 lbs.”

### GENERAL DESCRIPTION:

F&J Model GAS-EDL-HP is a powerful small foot print light weight AC/DC powered air sampling system operable from (1) line power or (2) an optional 24VDC external power source. This powerful air sampler is the lightest weight low volume air sampler available having similar flow rate capacity.

The GAS-EDL-HP air sampler is well suited for various types of air sampling applications such as REMP, plant emissions and work area monitoring programs. The unit is also equipped with two replaceable HEPA filters that filter the cooling air. It can be utilized in remote air sampling applications powered from solar panels or wind turbines. The Global Air Sampler software provides the ultimate in end user customization including operator selectable alarm settings, reference T and P values and engineering units.

The F&J Digital Flowmeter technology provides maximum flexibility, flow rate normalization, automatic flow control and opportunities for control by a PC device through the RS232 or USB communication ports.

The typical operating flow range is 20 - 170 SLPM (0.7 – 6 SCFM). The actual flow range implemented will depend on the filter(s) utilized by the customer.

# GAS-EDL-HP ELITE DIGITAL LIGHT Low Volume Air Samplers

**Pump Type:** Centrifugal blower

**Maximum Flowrate:**

140 LPM - Typical w/47 mm FP47M glass fiber media  
170+ LPM – Free air flow capacity

**Power Source:**

Line Power; 100VAC to 120VAC  
External DC Source – 24VDC (option)

**Maximum Current Draw:** 4 A maximum on line power  
10 A maximum on 24 VDC

**Filter Holder Fitting:**

3/8 FNPT quick disconnect

**Handle:** Durable plastic

**Weight:** 16 lbs. (7.26 kg)

**Installation Category:** Pollution Degree 2

**Enclosure Rating:** IPX2

**Dimensions:** 12.5" × 11" × 14" (32 × 28 × 36 cm)

**Average dB:** 74.6

**Operating Temperature Range:**

14°F to 122°F (-10°C to 50°C)

**Operator Selectable Features**

Language Options: English

Sampling Mode: Volumetric Flow or Mass Flow

Gas Type: Air, O<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub>, CO, CO<sub>2</sub>, C<sub>3</sub>H<sub>6</sub>, He, NH<sub>3</sub>

Engineering Units

Volumetric Flow: sccm, SLPM, SCFM, sm<sup>3</sup>/min, sm<sup>3</sup>/hr

Mass Flow: kg/hr, g/min, 1 lbs/hr

Temperature: °C, °F

Pressure: In Hg, mm Hg, bar, mbar, atm, kPa, hPa

Reference T and P

Reference T: 0°C, 15°C, 20°C, 21.1°C (70°F), 25°C

Reference P: 101.325 kPa (760 mm Hg), 100 kPa (1 bar)

RS232 Data Output Frequency: 1 sec, 1 min, 10 min, 20 min, 30 min, 1 hr

Data Storage Frequency: 1 min, 10 min, 20 min, 30 min, 1 hr

Operating Mode: Continuous, Periodic

Periodic Sampling Options: 1 hr. (12 five minute periods), or weekly (24 one hour periods for 7 days)

Ending Mode: By time, By volume

Operator Selectable Passwords: 2 levels

Date and Time Setup: Input of real time and date

**Standard Combination Filter Holders Available:**

FILTER HOLDER MODEL	CHARCOAL CARTRIDGE DIMENSIONS	PARTICULATE PAPER DIAMETER
FJ-05P	F&J Model B	2" or 50 mm
FJ-21P	F&J Model C	2" or 50 mm
FJ-35P	F&J Model B	47 mm
FJ-46P	F&J Model C	47 mm
FJ-51P	F&J Model M	2" or 50 mm
FJ-53P	F&J Model M	47 mm

**Flow Control:**

Adjustable from keypad between 20-170 LPM

**Flow Accuracy:** ±3.0% of Full Scale

**Communication Interface:** Dual RS-232

**Optional Items:**

- \* Air Sampler Data Acquisition Program  
P/N: GASdaq
- \* Isokinetic sampling mode configuration  
P/N: ISOKOPT
- \* Configuration for external 24 VDC input

## **ELITE DIGITAL LIGHT (EDL) AIR SAMPLER Model GAS-EDL-28B**

### **NOTABLE FEATURES:**

- Precision machined DP flow sensor
- State-of-the-Art electronics
- Vacuum fluorescent display; 4 line × 24 characters
- Flow rate and volume measurements corrected to operator selectable Reference Temperature and Pressure
- Electronic flow control
- Display in English or various metric units
- Dual RS-232 communication ports
- Flow rate accuracy:  $\pm 3.0\%$  Full Scale
- Auto zero calibration feature of flow sensor
- Various operator selectable sampling modes
- Display of Multiple on-board calculations
- Wide temperature range electronics



### **GENERAL DESCRIPTION:**

The Model GAS-EDL-28B Global Air Sampling System is a microprocessor controlled low volume air sampler. The pump is mounted on a base plate within a weather resistant aluminum environmental enclosure having four rubber feet. Handles are provided on the enclosure to facilitate transportation. The enclosure rating is IPX3.

The GAS-EDL-28B utilizes a bright VFD that has four (4) lines by 24 characters and utilizes wide temperature range electronic components for use in extreme ambient conditions.

This unit is designed for continuous indoor or outdoor use. This unit can be adapted for tripod mounting if desired. Please consult the product specifications for the design temperature range and the installation category.

Higher flow rates achieved depending on filter media used. With greater differential pressure drops lower the flow rates.

The typical operating flow range is 1.0 to 9.5 CFM (30 – 270 LPM). Actual flow range implemented will depend the filter(s) utilized by the customer.

# GAS-EDL-28B ELITE DIGITAL LIGHT Low Volume Air Samplers

<b>Pump Type:</b>	Centrifugal blower
<b>Maximum Flow Rate:</b>	140 LPM – Typical w/47 mm FP47M glass fiber media 170+ LPM – Free air flow capacity
<b>POWER REQUIREMENTS:</b>	100-120VAC; 50/60Hz; single phase 5 amps
<b>CIRCUIT BREAKER PROTECTION:</b>	Fused 5 amps
<b>ELECTRICAL CORD:</b>	All temperature, 3 wire, 14 gauge
<b>THERMAL OVERLOAD PROTECTION:</b>	Furnished as an integral part of the motor
<b>DIMENSIONS:</b>	19”L × 12.5”W × 13” H (48×30.5×33 cm)
<b>WEIGHT:</b>	29 lbs. (13.2 kg)
<b>INSTALLATION CATEGORY:</b>	Pollution Degree 3
<b>ENCLOSURE RATING:</b>	IPX3

## **ELECTRONIC SPECIFICATIONS:**

<b>AIR FLOW</b>	± 3.0% of full scale
<b>TEMPERATURE</b>	± 0.9°F (0.5°C)
<b>BAROMETRIC PRESSURE</b>	1% over measured range
<b>OPERATING TEMPERATURE:</b>	0° - 122°F (-17° - 50°C)
<b>STORAGE TEMPERATURE RANGE;</b>	-20° - 150°F (-29° - 65°C)
<b>CALIBRATION:</b>	Operator calibration-verification 1 per year
<b>COMMUNICATIONS INTERFACE:</b>	Dual RS-232
<b>DISPLAY:</b>	VFD, 4×24 characters
<b>DATA STORAGE:</b>	

Simultaneous data storage of all measured parameters in non-volatile memory; time and date stamp on records. Data storage for continuous sampling:

Optional reporting of all stored data and/or summary record for host computer or local printer via RS-232 serial link

## **ON-BOARD CALCULATIONS:**

Flow calculation from differential pressure value using best fit curve method

Flow correction for operator selectable reference temperature and pressure

Auto-zero correction utilizing electro-pneumatic method to compensate for offset and drift (automatic, once every minute)

Minimum and maximum values of measured parameters

## **COMBINATION FILTER HOLDERS AVAILABLE:**

Durable plastic combination filter holders for F&J Model B, C or M charcoal cartridges and 47 mm, 2” or 50 mm diameter particulate filter paper are available. All models have quick disconnect function.

<b>FILTER HOLDER MODEL</b>	<b>CHARCOAL CARTRIDGE DIMENSIONS</b>	<b>PARTICULATE PAPER DIAMETER</b>
FJ-05P	F&J Model B	2” or 50 mm
FJ-21P	F&J Model C	2” or 50 mm
FJ-35P	F&J Model B	47 mm
FJ-46P	F&J Model C	47 mm
FJ-51P	F&J Model M	2” or 50 mm
FJ-53P	F&J Model M	47 mm

## ELITE DIGITAL LIGHT (EDL) AIR SAMPLER Model GAS-EDL-300W-HT (High Ambient Temperature Operation)

### NOTABLE FEATURES:

- State-of-the-Art Electronics
- Lightweight: ~15 lbs. (6,8 kg)
- Powerful: Flow rate to 250 LPM\*
- Very low maintenance
- Automatic Flow Control
- Precision machined DP flow sensor
- Vacuum Fluorescent Display (VFD);  
4 line × 24 characters
- Dual RS-232 communication ports
- Flow rate accuracy:  $\pm 3.0\%$  Full Scale
- Auto zero calibration feature of flow sensor
- Multiple operator selectable data storage and data transmission frequency rates
- Wide temperature range electronics
- Brushless motor
- High ambient temperature rating to 140°F (60°C)



Shown with optional Filter Holder

\* Depending on filter paper dimensions and air flow resistance

### GENERAL DESCRIPTION:

F&J Model GAS-EDL-30W is a powerful small foot print light weight AC/DC powered air sampling system operable from (1) line power or (2) a 24VDC external power source. This powerful air sampler is the lightest weight low volume air sampler available.

The GAS-EDL-30W air sampler is well suited for various types of air sampling application such as REMP, plant emissions and work area monitoring programs. It can also be utilized in remote air sampling applications powered from solar panels or wind turbines. The Global Air Sampler software provides the ultimate in end user customization including operator selectable alarm settings, Reference T and P values and engineering units.

The F&J technology provides maximum flexibility, data integrity automatic flow control and opportunities for control by a PC device through the RS232 communication port.

The typical operating flow range is 30 - 300 SLPM (1.1 – 10.6 SCFM). Actual flow range implemented will depend the filter(s) utilized by the customer.

# GAS-EDL-300W-HT ELITE DIGITAL LIGHT Low Volume Air Samplers

**Pump Type:** Centrifugal blower

**Maximum Flowrate:**

290 LPM - Typical w/8"X10" 5211810 glass fiber media

300+ LPM – Free air flow capacity

**Power Source:**

Line Power; 100VAC to 120VAC  
External DC Source – 24VDC

**Current Draw:** 14 A maximum

**Filter Holder Fitting:**

3/8 FNPT quick disconnect

**Handle:** Durable plastic

**Weight:** 15 lbs. (6,8 kg)

**Dimensions:** 10" × 11" × 14"  
(26 × 28 × 36 cm)

**Operating Temperature Range:**

14°F to 122°F (-10°C to 50°C)

**Display:** VFD, 4×24 characters

**Flow Control:**

Adjustable from keypad between 30-270 LPM

**Flow Accuracy:** ±3.0% of Full Scale

**Communication Interface:** Dual RS-232

**Standard Combination Filter Holders Available:**

FILTER HOLDER MODEL	CHARCOAL CARTRIDGE DIMENSIONS	PARTICULATE PAPER DIAMETER
FJ-05P	F&J Model B	2" or 50 mm
FJ-21P	F&J Model C	2" or 50 mm
FJ-35P	F&J Model B	47 mm
FJ-46P	F&J Model C	47 mm
FJ-51P	F&J Model M	2" or 50 mm
FJ-53P	F&J Model M	47 mm

**Typical Maximum Flow Rates for Various Filter Medium (Media)**

Filter Media	Flow Rate (SCFM)	Flow Rate (SLPM)	Media D.P. ("Hg)	Media D.P. ("H <sub>2</sub> O)
FP47	4.91	140	6.2	84.0
FP47M	7.91	224	4.3	58.8
FP47M2	10.4	296	3.0	40.2
FP47 & TE2C	3.71	105	6.9	93.5
FP47M & TE2C	5.47	155	6.1	83.0
FP47M & TE3C	5.90	167	6.6	90.0
FP47M2 & TE1C	7.81	221.1	3.8	51.40
FP20M	8.25	233.7	3.6	48.9
FP20M & TE2C	5.68	160.8	5.7	77.8
FP20M & TE3C	6.69	189.5	4.8	64.8
FP40M	10.47	390	1.9	25.09

**Operator Selectable Features**

Language Options: English, French

Sampling Mode: Volumetric Flow or Mass Flow

Gas Type: Air, O<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub>, CO, CO<sub>2</sub>, C<sub>3</sub>H<sub>6</sub>, He, NH<sub>3</sub>

**Engineering Units**

Volumetric Flow: sccm, SLPM, SCFM, sm<sup>3</sup>/min, sm<sup>3</sup>/hr

Mass Flow: kg/hr, g/min, 1 lbs/hr

Temperature: °C, °F

Pressure: In Hg, mm Hg, bar, mbar, atm, kPa, hPa

**Reference T and P**

Reference T: 0°C, 15°C, 20°C, 21.1°C (70°F), 25°C

Reference P: 101.325 kPa (760 mm Hg), 100 kPa (1 bar)

RS232 Data Output Frequency: 1 sec, 1 min, 10 min, 20 min, 30 min, 1 hr

Data Storage Frequency: 1 min, 10 min, 20 min, 30 min, 1 hr

Operating Mode: Continuous, Periodic

Periodic Sampling Options: 1 hr. (12 five minute periods), or weekly (24 one hour periods for 7 days)

Ending Mode: By time, By volume

Operator Selectable Passwords: 2 levels

Date and Time Setup: Input of real time and date

**Optional Items:**

- \* Air Sampler Data Acquisition Program  
P/N: GASdaq
- \* Isokinetic sampling mode configuration  
P/N: ISOKOPT
- Ruggedized Cellular Phone System (P/N: CASRPS)

## **ELITE DIGITAL LIGHT (EDL) AIR SAMPLER Model GAS-EDL-22**

### **NOTABLE FEATURES:**

- State-of-the-Art Electronics
- Powerful: Flow rate to 170 LPM\*
- Very low maintenance
- Automatic Flow Control
- Precision machined DP flow sensor
- Vacuum Fluorescent Display (VFD); 4 line × 24 characters
- Dual RS-232 communication ports
- Flow rate accuracy:  $\pm 3.0\%$  Full Scale
- Auto zero calibration feature of flow sensor
- Multiple operator selectable data storage and data transmission frequency rates
- Wide temperature range electronics
- Brushless motor

\* Dependent upon filter paper dimensions and air flow resistance



### **GENERAL DESCRIPTION:**

F&J Model GAS-EDL-22 is a powerful small foot print light weight AC/DC powered air sampling system operable from (1) line power or (2) an optional 24VDC external power source.

The GAS-EDL-22 air sampler is a microprocessor controlled low volume REMP air sampling system consisting of a low maintenance brushless motor vacuum system. The air sampler component is very light (~ 15 lbs.) and requires no maintenance. It can also be utilized in remote air sampling applications powered from solar panels or wind turbines. The Global Air Sampler software provides the ultimate in end user customization including operator selectable alarm settings, Reference T and P values and engineering units. A feature rich data acquisition program is included in the price.

The F&J technology provides maximum flexibility, data integrity automatic flow control and opportunities for control by a PC device through the RS232 communication port.

The typical operating flow range is 20 - 170 SLPM (0.7 – 6 SCFM). Actual flow range implemented will depend the filter(s) utilized by the customer.



# GAS-EDL-22 ELITE DIGITAL LIGHT Low Volume Air Samplers

**Pump Type:** Centrifugal blower

**Maximum Flowrate:**

140 LPM - Typical w/47 mm FP47M glass fiber media  
170+ LPM – Free air flow capacity

**Power Source:**

Line Power; 100VAC to 120VAC  
External DC Source – 24VDC

**Current Draw:**

4 A maximum on line power  
10 A maximum on 24 VDC

**Filter Holder Fitting:**

3/8 FNPT quick disconnect

**Weight:**

~ 82 lbs. (37.3 kg)

**Dimensions:**

32" × 26" × 48¼"  
(81,3 × 66 × 122,6 cm)

**Operating Temperature Range:**

14°F to 122°F (-10°C to 50°C)

**Display:**

VFD, 4×24 characters

**Flow Control:**

Adjustable from keypad between 20-180 LPM

**Flow Accuracy:**

±3.0% of Full Scale

**Communication Interface:** Dual RS-232

**Operator Selectable Features**

Language Options: English, French

Sampling Mode: Volumetric Flow or Mass Flow

Gas Type: Air, O<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub>, CO, CO<sub>2</sub>, C<sub>3</sub>H<sub>6</sub>, He, NH<sub>3</sub>

Engineering Units

Volumetric Flow: sccm, SLPM, SCFM, sm<sup>3</sup>/min, sm<sup>3</sup>/hr

Mass Flow: kg/hr, g/min, 1 lbs/hr

Temperature: °C, °F

Pressure: In Hg, mm Hg, bar, mbar, atm, kPa, hPa

Reference T and P

Reference T: 0°C, 15°C, 20°C, 21.1°C (70°F), 25°C

Reference P: 101.325 kPa (760 mm Hg), 100 kPa (1 bar)

RS232 Data Output Frequency: 1 sec, 1 min, 10 min, 20 min, 30 min, 1 hr

Data Storage Frequency: 1 min, 10 min, 20 min, 30 min, 1 hr

Operating Mode: Continuous, Periodic

Periodic Sampling Options: 1 hr. (12 five minute periods), or weekly (24 one hour periods for 7 days)

Ending Mode: By time, By volume

Operator Selectable Passwords: 2 levels

Date and Time Setup: Input of real time and date

**Standard Combination Filter Holders Available:**

FILTER HOLDER MODEL	CHARCOAL CARTRIDGE DIMENSIONS	PARTICULATE PAPER DIAMETER
FJ-05P	F&J Model B	2" or 50 mm
FJ-21P	F&J Model C	2" or 50 mm
FJ-35P	F&J Model B	47 mm
FJ-46P	F&J Model C	47 mm
FJ-51P	F&J Model M	2" or 50 mm
FJ-53P	F&J Model M	47 mm

**Optional Items:**

- \* Air Sampler Data Acquisition Program  
P/N: GASdaq
- Ruggedized Cellular Phone System (P/N: CASRPS)

## Digital Flow Meter Air Sampler Features

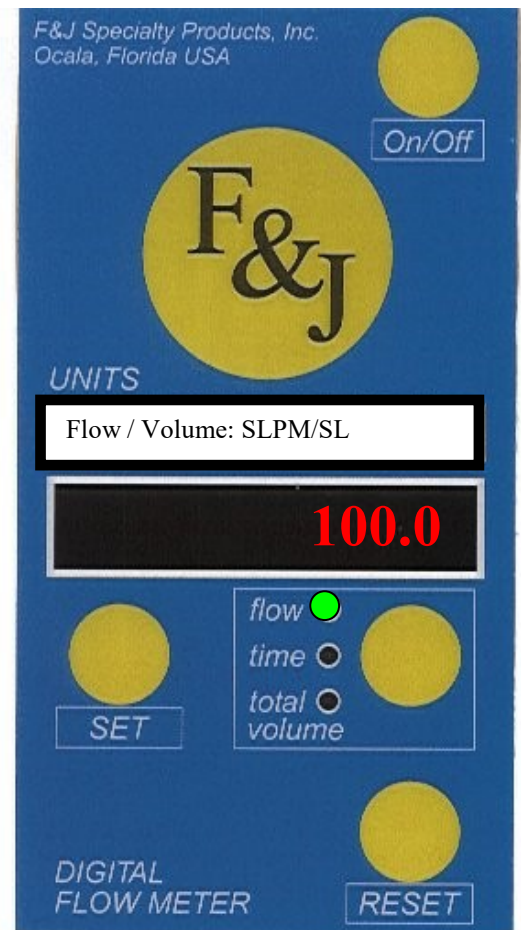
### Operator Selectable Options:

Shut off Type	
On Time	0 min to 168 hours
On Volume	0 to $9.99 \times 10^{99}$
RS232 Output Frequency	1/sec, 1/min, 1/6min, 1/hr
Automatic Flow Control:	Operator selectable within the instrument's operating flow range
Selection of Reference T and P or Ambient flow reporting conditions	

### Factory Settable Options:

Flow/Volume units	sccm/scc, SLPM/SL, SCFM/SCF, sm <sup>3</sup> /hr, sm <sup>3</sup> /min
Temperature units	°C, °F
Pressure units	in.Hg, mmHg, kPa
Reference Temperature	0°C, 20°C, 70°F, 25°C
Reference Pressure	29.92 inHg (760 mmHg)
Display Dimming Function	On or Off
Auto Shut-off Function	On or Off
Flow Control	On or Off
Sampling Mode	Volumetric
Gas Type	Air
Language Options for Label	English, French

### Digital Flowmeter Keypad/Display

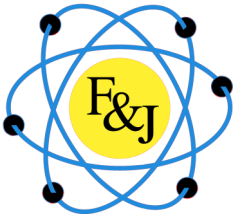


## Global Air Sampler Features

### Operator Selectable Features in Setup Mode

Language Options:	English
Sampling Mode:	Volumetric Flow, Mass Flow, or Isokinetic Flow *
Gas Type:	Air, O <sub>2</sub> , N <sub>2</sub> , H <sub>2</sub> , CO, CO <sub>2</sub> , C <sub>3</sub> H <sub>6</sub> , He, NH <sub>3</sub>
Engineering Units	
Volumetric Flow:	sccm, SLPM, SCFM, sm <sup>3</sup> /min, sm <sup>3</sup> /hr
Mass Flow:	kg/hr, g/min, 1lbs/hr
Temperature:	°C, °F
Pressure:	In. Hg, mm Hg, bar, mbar, atm, kPa, hPa
Reference T and P	
Reference T:	0°C, 15°C, 20°C, 21.1°C (70°F), 25°C
Reference P:	101.325 kPa (760 mm Hg), 100 kPa (1bar)
Data Output Frequency:	1 sec, 1 min, 10 min, 20 min, 30 min, 1 hr
Data Storage Frequency:	1 min, 10 min, 20 min, 30 min, 1 hr
Operating Mode:	Continuous or Periodic
Periodic Sampling Options:	1 hr. (12 five minute periods), or weekly (24 one hour periods for each of the 7 days)
Ending Mode:	By time, By volume
Operator Selectable Passwords:	2 levels
Date and Time Setup	Input of real time and date
Alarm Settings	<ul style="list-style-type: none"> <li>• Flow (<math>\pm 10\%</math>, <math>\pm 15\%</math>, <math>\pm 20\%</math>),</li> <li>• Temperature (high and low),</li> <li>• Inlet pressure drop (dust loading) and</li> <li>• Inlet pressure to flow sensor (high and low)</li> </ul>
Optional Communication Ports	RS485, Ethernet, Ruggedize cellular phone
Automatic Flow Control	EDL only; Oilless carbon vane pumps use mechanical regulators

\* Requires optional isokinetic functions to be installed to receive data from F&J GAS-100/100E Duct Flow Monitor.



## F&J SPECIALTY PRODUCTS, INC.

*The Nucleus of Quality Air Monitoring Programs*

### PRODUCT PROFILE

#### Air Sampling Systems

- High Volume Air Samplers
  - Portable Grab Samplers
  - Environmental Systems
  - Enzyme Dust Samplers
  - PM10 Systems
- Continuous Air Samplers
  - Environmental Systems
  - Portable
  - Fixed Station
- Personal Air Samplers
- Emergency Response DC Powered Air Sampling Systems

#### Filter Paper

- Glass Fiber
- Cellulose
- Membrane
- Quartz

#### Filter Holders

- Open face
- In-Line
- PAS Filter Holders
- Materials
  - Plastic
  - Aluminum
  - Stainless Steel

#### Radon Detection Devices

- 2-Day Passive Charcoal Canisters
- 7-Day Passive Charcoal Canisters
- Continuous Radon Monitors

#### Tritium Detection Systems

- Portable and Fixed Station Collection Systems utilizing Silica Gel or Molecular Sieve Absorbents
- Continuous Tritium Monitors

#### New Products

- Global Air Sampling Systems
- Digital Flowmeter Air Samplers
- C-14 Collection Systems
- ELITE DIGITAL LIGHT (EDL) Air Samplers
- Isokinetic Air Sampling Systems
- MEGA High Volume Air Samplers
- ULTRA High Volume (CTBTO) Air Samplers

#### Radioiodine Collection Cartridges

- TEDA Impregnated Charcoal
- Silver Zeolite
- Custom Cartridges
- Bulk Silver Zeolite

#### Air Flow Calibrators

- World Calibrator Series
- Compact Digital V.2 Series
- Mini-Calibrator