



A.P. BUCK, INC.

# Buck Bio-Culture™ Model B30120 Instruction Manual

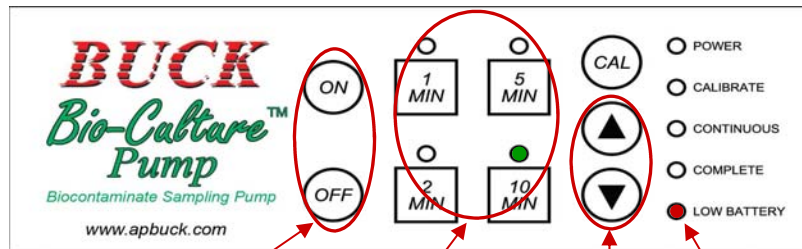


**30-120LPM Constant Flow  
Bioaerosol Sampling Pump**

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# Bio-Culture™ Quick Guide



**POWER ON**  
Hold ON 4 seconds to place pump into “continuous” run. Hold OFF for 2 seconds to shut pump off.

Push one of the fixed sample time buttons after power on.

Flow adjust (in Cal Mode) up or down.

Status LEDs confirm all pump functions



For greatest accuracy, the Bio-Culture™ Pump should be calibrated once per day. Calibration is performed (as shown above) with a specially made calibration head.

The Bio-Culture™ Pump is a controlled flow device specially designed to accommodate the natural backpressure inherent 90mm agar dish/dishes.

## **Product Description**

The Buck Bio-Culture™ Model B30120 is a bioaerosol sampling pump designed to draw air into a standard Petri dish.

A microprocessor controls the Bio-Culture™'s flowrate and provides preset timing routines for sample collection. The pump is capable of flow rates from 30 to 120 Liters Per Minute (LPM). The flows are adjustable from the keypad in (CAL) Calibration Mode. The calibrated flow rate will be maintained at a constant flow throughout the collection period.

Four timing routines are selectable from the keypad and continuous flow is achieved by pressing the ON key for 4 seconds. The OFF key manually stops the pump from sampling.

The pump uses nickel cadmium (NiCad) rechargeable batteries and will operate up to five hours on a fully charged pack.

The standard battery charger supplied with the pump charges the batteries in 8 hours. An optional FastOne™ (APB-601900) charger is also available and can charge the pump in two and half hours. A/C powered operation can be conducted with the supplied Standard Charger .

## **Product Features**

- **30-120LPM Adjustable Constant Flow Range**
- **6-8 hours continuous operation at 100 - 120LPM**
- **Small and lightweight**
- **Battery powered, rechargeable with standard charger or optional FastOne™, One Hour charger.**
- **Tripod Mount on bottom of unit**
- **Convenient timers for 1, 2, 5, or 10 minute samples or continuous run for longer samples**
- **End-of-Sample audible and visual indicators**
- **Easy keypad calibration with optional Calibration Head and sampling media in-line for greatest accuracy**

## **Audible Alert ON/OFF**

The arrow keys will turn off the audible “beep” in areas where sound is not appropriate. With the pump power ON, press the Down Arrow Key for 4 (four) seconds or until **two** beeps acknowledge the disabling of the beeper. Press the Up Arrow Key for 4 (four) seconds or until **three** beeps signify the audible beeper is ON.

## **Low Battery Warning**

When sampling pressing the down arrow key will light up the LED’s, located on the right side of the unit, based on the battery charge. If all 5 LEDs light up the batteries are 100%. If 4 are lit it is at 80%, 3 lit = 60%, etc. The low battery LED will begin flashing when there is only enough power to collect a 10 minute sample.


## **Sample Timing Lock-Out**

Once the Red low battery warning LED stops blinking and becomes Solid Red, none of the timing keys will function and a new sampling cannot be started. At this time the pump must be recharged or plugged into the charger to continue sampling.

## **Tripod Mount**

A connector located on the bottom of the unit provides easy connection to most standard tripods.

## **Specifications**

- Model: Bio-Culture™ Model B30120
- Flow Range 30 to 120LPM
- Accuracy ± 5% at Set Point
- Run Time 7 hours at 120LPM
- Size 4.5”H x 6”W x 5.25D  
(10.2cm H x 15.2cm W x 13.3cm D)
- Weight 42oz (1191g)
- Battery Voltage 4.8VDC Nickel Cadmium rechargeable  
(120 or 230VAC standard charger included)
- Compatibility: 90mm Agar Petri Dish
- Recharge Time 8 hours with Standard Charger  
2 1/2 hour with optional FastOne™ Charger
- Marks 

Prices and Specifications subject to change without notice.

## **Operating Instructions – Model B30120**

### **How to Handle Microbiological Media (Agar Petri Dish):**

1. Agar dish must be kept refrigerated or on ice until ready to use.
2. The dish must be allowed to warm up to room temperature before taking a sample (approximately 20 minutes).
3. Do not remove the lid from the dish at anytime except during sampling.
4. The dish must be shipped back to the lab on ice with overnight priority.
5. Adequate packing material must be sent to protect the dish. The weight of the icepack can crush the dish during shipping.
6. Dish must not come into direct contact with the ice, as the tests will be invalid if the media freezes.
7. If there is any delay in sending the agar dish to the lab, they should be refrigerated until ready for overnight delivery.

A good practice is to have a chain of custody form accompany the dish including the date collected and the date sent to the laboratory.

### **Sampling Recommendations:**

1. Wear latex gloves during sampling process.
2. Use the pencil torch to sterilize sampling head.
3. Place lid of agar dish in a sterile bag during sampling.
4. Include an outside sample for a control.

### **Bio-Culture™ Calibration NIST Traceable**

The Bio-Culture™ Pump should be calibrated with an agar plate installed. The Bio-Culture™ Pump is a controlled flow device specially designed to accommodate the natural backpressure inherent 90mm agar plates/dishes.

1. Replace sampling head with the Bio-Culture Calibrator which includes attached head and pressure gauge with flow chart on the side.
2. Push “ON”, then press the “CAL” for 2 seconds to put pump into calibration mode. Adjust the flowrate using the ▲ and ▼ keys to the desired mm of water pressure per minute. Correlate with the calibration chart on the side of the calibrator head. Fine adjustments are possible. Allow pump to stabilize.
3. When flowrate is achieved, push “CAL” to accept setting, then turn pump off.

### NIST Traceable Calibrator Chart

Calibration and Verification of Bio-Culture	
Flow Rate LPM	mm of Water Pressure
150	5.6
120	3.8
100	2.7
90	2.2
60	1.1
30	0.30

4. Verify the flow at anytime with the Calibrator by selecting a 1, 2, 5 or 10 minute timing routing. Press the OFF key to stop. If the verify flow was accurate entering “Cal” is not necessary. Entering the “Cal” mode erases the previous setting for a new flow rate

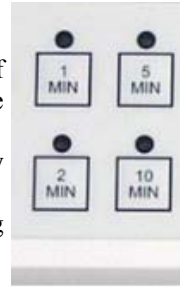
#### Sampling Procedure:

1. Before beginning, ensure the battery is fully charged and that the “Low Battery” LED is not on. For greatest accuracy, the pump should be calibrated once a day.
2. Sterilize sampling head with included pencil torch. Allow to cool.
3. Allow covered agar dish to reach room temperature before use.
4. Unscrew the sample head, remove cover from dish and position within the mounts. Then replace the head back on securely.
5. Calibrate pump: see above for instructions
6. Push the “ON” button to power up the Buck Bio-Culture™ Pump and either: (a) continue to hold the “ON” button for four seconds to put pump in “Continuous” mode, or (b) push one of the programmed time keys (1, 2, 5, or 10 minutes) for an automatic timed sample.
7. At the end of programmed sample period, pump will automatically shut off and “Complete” LED will be lit; under “Continuous” mode, push and hold “OFF” button for 2 seconds to shut off pump.
8. Unscrew the head and remove the Agar Dish.
9. Replace and secure the Agar lid on the dish with masking tape or laboratory film and write sample number on the bottom of the dish.
10. Record all appropriate information on a Chain of Custody report.
11. Send dish with ice pack to an appropriate laboratory for analysis. (avoiding use of electrical, packing, transparent and duct tape).

## Timing Routines

### Sampling

1. Place the Agar dish firmly into the mounts of the Bio-Culture™ pump. Tightly screw on the sampling head.
2. Turn on the pump by pressing the **ON** Key (the green “**POWER**” LED is Lighted).
3. Start the sampling by pressing one of the timing keys (1,2,5 or 10 minutes) and LED will light.



The Bio-Culture will automatically run to the calibrated flow for the selected time.

### End of Sampling

At the conclusion of the sampling, the pump will stop. The “**COMPLETE**” LED will light and the timer LED will be flashing to indicate which timing routine was selected.

### Auto Power Off for Battery Conservation

The Bio-Culture™ turns off 5 minutes after being turned **ON** if no keys have been pressed. The pump automatically turns off approximately 30 minutes after any sampling routine if no other key is pressed.

## Battery Charging



**Wall Charger** (APB-603900) The standard wall charger supplied will charge the batteries in approximately 8 hours or run the pump when battery is low.

**FastOne™ Charger** (APB-601900-Optional) The FastOne Charger will charge the Pump’s batteries in approximately 2 1/2 hours. This charger uses a “negative delta voltage” technique which provides a fully charged pack before going to a trickle mode. LED lights on the charger indicate the status of the charging.



## Parts and Accessories

**BUCK Bio-Culture™ Pump**, Model B30120 (APB-708000) complete with standard 120VAC adapter/charger, pencil torch, tripod, carrying case and instruction manual

**BUCK Bio-Culture™ Pump**, (APB-708200) complete with standard 230VAC adapter/charger and instruction manual

**BUCK Standard Charger**, (APB-603900) supplied, 120VAC Designed to charge the Bio-Culture™ Pump Battery Pack (6 hours charge time)

**BUCK Standard Charger**, (APB-603910) supplied, 230VAC Designed to charge the Bio-Culture™ Pump Battery Pack (8 hours charge time)

**BUCK FastOne™ Charger** (APB-601900) optional, 90-240VAC Single Station Automatic Charger, will charge battery in approximately 2 1/2 hrs.

**BUCK Bio-Culture™ Rechargeable NiCad Battery Pack 2400mAh** (APB-107012) The pack of four cells can easily be changed by opening the case and lifting the pack off the Velcro strip, unplugging the connector and installing the new pack

**Tripod for Bio-Culture™ support** (APB-104102) supports Bio-Culture™ for breathing zone and other elevated samples

**Bio-Culture™ Pump Calibration Head** (APB-708500)

**Pencil Torch** (MIC-G1215) used to sterilize the sampling head of the **Bio-Culture™ Pump** (included)

Bio-Culture and FastOne are trademarks of A.P. Buck, Inc.



## CONVERSION TABLE

To correlate the CFUs (Colony Forming Units) present on the agar plate to the most probable number (MPN) of micro-organisms per cubic meter of air sampled, the following formula is used:

$$Pr = N [1/N + 1/(N-1) + 1/(N-2) + \dots + 1/(N-r+1)]$$

**Where:** Pr = most probable number of micro-organisms in the volume of air sampled, N = number of holes on Microflow sampling head, R = number of CFUs on the agar plates after incubation.

r	Pr	r	Pr	r	Pr	r	Pr	r	Pr	r	Pr	r	Pr	r	Pr	r	Pr	r	Pr	r	Pr
1	1	46	49	91	104	136	168	181	245	226	342	271	473	316	674	361	1129				
2	2	47	50	92	105	137	170	182	247	227	345	272	477	317	680	362	1149				
3	3	48	51	93	106	138	171	183	249	228	347	273	480	318	686	363	1170				
4	4	49	52	94	108	139	173	184	251	229	350	274	484	319	693	364	1192				
5	5	50	54	95	109	140	174	185	253	230	352	275	487	320	699	365	1216				
6	6	51	55	96	110	141	176	186	255	231	355	276	491	321	705	366	1242				
7	7	52	56	97	112	142	178	187	257	232	358	277	495	322	712	367	1269				
8	8	53	57	98	113	143	179	188	259	233	360	278	498	323	718	368	1298				
9	9	54	58	99	115	144	181	189	261	234	363	279	502	324	725	369	1330				
10	10	55	59	100	116	145	182	190	263	235	365	280	506	325	732	370	1364				
11	11	56	60	101	117	146	184	191	265	236	368	281	510	326	738	371	1402				
12	12	57	62	102	119	147	186	192	267	237	371	282	514	327	745	372	1444				
13	13	58	63	103	120	148	187	193	269	238	373	283	517	328	753	373	1492				
14	14	59	64	104	121	149	189	194	271	229	376	284	521	329	760	374	1546				
15	15	60	65	105	123	150	190	195	273	240	379	285	525	330	767	375	1609				
16	16	61	66	106	124	151	192	196	275	241	381	286	529	331	775	376	1685				
17	17	62	68	107	125	152	194	197	277	242	384	287	533	332	783	377	1780				
18	18	63	69	108	127	153	195	198	279	243	387	288	537	333	791	378	1907				

## DISINFECTING OF THE UNIT

Bio-Culture must be cleaned after each cycle to avoid cross contamination which would modify the reliability of the sampling.

Switch off the unit. Clean the surface of Bio-culture using a sterile cloth wet with a suitable disinfectant. After drying, the unit is ready for a new sampling cycle.

The sampling head can be autoclaved in an autoclavable bag, following the standard procedure of sterilization (i.e. 134 °C, 18 minutes for hospitals applications).

Between two samplings, dispense or spray a disinfectant on both faces of the sampling head. Let dry at room temperature. After drying the sampling head is ready to use.

**SAMPLING HEAD FIRE DISINFECTING** \* Due to Government Regulations, Pencil Torchs are shipped empty.

The BIO-CULTURE kit is equipped with a pencil torch to disinfect the head. Disinfect always the head between two samplings to avoid a cross-contamination.



To switch on the pencil torch rotate the control-valve clockwise  
When the gas goes out from the head, bring the fire to light the pencil.

### ATTENTION

**Quickly pass the fire on the interior part of the sampling head.  
Do not stop the fire on a specific point of the head, it can be damaged**

To switch off the pencil torch rotate the control-valve counter-clockwise .

## Service Information

You **must** obtain an RMA number prior to returning any product. Obtain your RMA number by calling **A.P. Buck, Inc. Customer Service at 1-800-330-BUCK or 407-851-8602.** To expedite service and repairs, have your Customer ID handy and visit our website, [www.apbuck.com](http://www.apbuck.com), and request an RMA# online.

Please ensure that all products returned to A.P. Buck, Inc. contain no hazardous materials. Any obviously contaminated product received will be returned to the customer. All products scheduled for service must be received within 30 days of the RMA number issuance date. Unauthorized products will be returned to the customer.

For all work not covered under warranty, A.P. Buck, Inc. will repair any instrument for the cost of parts and labor as quoted. If major components must be replaced, A.P. Buck, Inc. will notify the customer before proceeding with repairs.

When returning any instrument for service, please include a Purchase Order marked: "Repair-Cost Not To Exceed \$250.00 Without Customer Authorization". Please provide the following information with your instrument:

Company Name:

Address:

Telephone:

Fax:

Contact Name:

Serial Number(s):

Date of Purchase:

Service Required or Description of Problem:

## TECHNICAL SUPPORT SERVICES

Technical Assistance: Phone: (407) 851-8602

Fax: (407) 851-8910

[apbuck@apbuck.com](mailto:apbuck@apbuck.com)

[www.apbuck.com](http://www.apbuck.com)

Hours:

Monday - Friday 8:00 AM to 4:30 PM (EST)

## **WARRANTY**

The seller warrants to the Purchaser that any equipment manufactured by it and bearing its name dish to be free from defects in material or workmanship, under proper and normal use and service, as follows: if, at any time within 1 (one) year from the date of sale, the Purchaser notifies the Seller that in his opinion, the equipment is defective, and returns the equipment to the Seller's originating factory prepaid, and the Seller's inspection finds the equipment to be defective in material or workmanship, the Seller will promptly correct it by either, at its option, repairing any defective part or material or replacing it free of charge and return shipped lowest cost transportation prepaid (if Purchaser requests premium transportation, Purchaser will be billed for transportation costs). If inspection by the Seller does not disclose any defect in material or workmanship, the Seller's regular charges will apply. This warranty shall be effective only if installation and maintenance is in accordance with our instructions and written notice of a defect is given to the Seller within such period. This warranty is exclusive and is in lieu of any other warranties, written, oral or implied; specifically without limitation, there is no warranty of merchantability or fitness for any purpose. The liability of the Seller shall be limited to the repair or the replacement of materials or parts as above set forth.

## **LIMITATION OF LIABILITY**

The seller shall not be liable for any claim for consequential loss or damage arising or alleged to have arisen from any delay in delivery, malfunction or failure of the equipment. The Seller's liability for any other loss or damage arising out of or connected with the manufacture, sale or use of the equipment sold, including damage due to negligence, shall not in any event exceed the price of the equipment supplied by us.

A.P. Buck, Inc. reserves the right to make changes at any time, without notice, in prices, colors, materials, specifications and models, and to discontinue models.

Seller makes no warranty for merchantability of purpose.

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NOTES

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MAN-BIO-CULTURE  
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