

Model 1849

Forma Laminar Airflow Workstation Class 100

Operating and Maintenance Manual 7011849 Rev. 3



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A printed copy of the operating manual is available from Technical Services.

MANUAL NO. 7011849

3	29120	9/25/12	Added note for online warranty	ccs
2	25419/HD-1601	5/19/09	Corrected motor run capacitor connection on electrical schematic	ccs
1	25439/HD-1597	3/27/09	Added required UL info	ccs
0	24531	3/26/08	Removed obsolete Model 1851	ccs
REV	ECR/ECN	DATE	DESCRIPTION	By



Important Read this instruction manual. Failure to read, understand and follow the instructions in this manual may result in damage to the unit, injury to operating personnel, and poor equipment performance. s

Caution All internal adjustments and maintenance must be performed by qualified service personnel. s

Warning Lamps, thermometers, and thermoregulators contain mercury. Do not put in trash. Recycle or dispose as hazardous waste. s

Material in this manual is for information purposes only. The contents and the product it describes are subject to change without notice. Thermo Scientific makes no representations or warranties with respect to this manual. In no event shall Thermo be held liable for any damages, direct or incidental, arising out of or related to the use of this manual.

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Important operating and/or maintenance instructions. Read the accompanying text carefully.



Potential electrical hazards. Only qualified persons should perform procedures associated with this symbol.



Equipment being maintained or serviced must be turned off and locked off to prevent possible injury.



Hot surface(s) present which may cause burns to unprotected skin, or to materials which may be damaged by elevated temperatures.



Potential biological hazards. Proper protective equipment and procedures must be used when following instructions associated with this symbol. Reference O.S.H.A. Regulation 1910-1030.



Skin damage and/or eye injury can result from the light produced by ultra violet light sources installed in this equipment. Never work in this unit with the ultra violet light operating.



Marking of electrical and electronic equipment, which applies to electrical and electronic equipment falling under the Directive 2002/96/EC (WEEE) and the equipment that has been put on the market after 13 August 2005.

This product is required to comply with the European Union's Waste Electrical & Electronic Equipment (WEEE) Directive 2002/96/EC. It is marked with the WEEE symbol. Thermo Scientific has contracted with one or more recycling/disposal companies in each EU Member State European Country, and this product should be disposed of or recycled through them. Further information on Thermo's compliance with this directive, the recyclers in your country and information on Thermo products will be available at www.thermofisher.com.

- 4 Always use the proper protective equipment (clothing, gloves, goggles, etc.)
- 4 Always dissipate extreme cold or heat and wear protective clothing.
- 4 Always follow good hygiene practices.
- 4 Each individual is responsible for his or her own safety.

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Our **Sales Support** staff can provide information on pricing and give you quotations. We can take your order and provide delivery information on major equipment items or make arrangements to have your local sales representative contact you. Our products are listed on the Internet and we can be contacted through our Internet home page.

Our **Service Support** staff can supply technical information about proper setup, operation or troubleshooting of your equipment. We can fill your needs for spare or replacement parts or provide you with on-site service. We can also provide you with a quotation on our Extended Warranty for your Thermo Scientific products.

Whatever Thermo Scientific products you need or use, we will be happy to discuss your applications. If you are experiencing technical problems, working together, we will help you locate the problem and, chances are, correct it yourself...over the telephone without a service call.

When more extensive service is necessary, we will assist you with direct factory trained technicians or a qualified service organization for on-the-spot repair. If your service need is covered by the warranty, we will arrange for the unit to be repaired at our expense and to your satisfaction.

Regardless of your needs, our professional telephone technicians are available to assist you Monday through Friday from 8:00 a.m. to 6:00 p.m. Eastern Time. Please contact us by telephone or fax. If you wish to write, our mailing address is:

Thermo Scientific
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401 Millcreek Road, Box 649
Marietta, OH 45750

International customers, please contact your local Thermo Scientific distributor.

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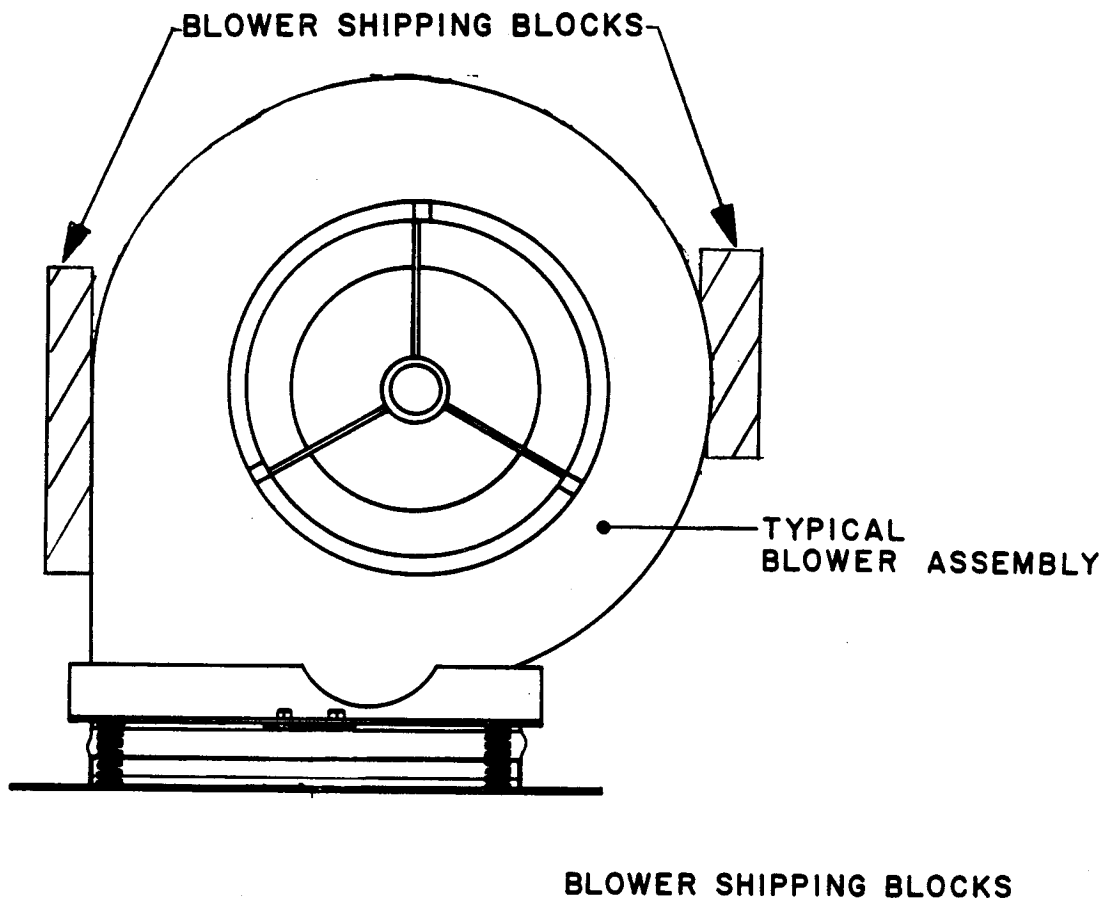
Section 1 Introduction

The horizontal laminar flow clean cabinet provides a particulate-free work environment for the performance of sterile and/or dust sensitive procedures. The unit is recommended for use in sterile apparatus assembly, media preparation sterility testing, sterile filling and related industrial and biomedical procedure.

The cabinet provides product protection only. The operator/technician is exposed to any particulate, aerosol or gas released from the work procedures. Therefore, procedures involving viable agents, work involving drugs, or chemicals that produce a toxic, allergic or carcinogenic response in humans should not be performed within this unit.

The operator/technician is responsible for decontamination if hazardous material is spilled on or in the equipment.

Consult an institutional bio-safety officer or an industrial hygienist before beginning any procedure that might endanger the operator or contaminate the environment.



IMPORTANT.

**SHIPPING BLOCKS MUST BE
REMOVED BEFORE INITIAL USE!**

Section 2 Installation and Start-Up

Before putting the unit into operation, remove the cardboard shipping block from the front and back of the blower (see illustration on previous page). Remove the prefilter and the prefilter grille to gain access for block removal.

Installing the Feet

The packing list includes eight white rubber “stick-on” feet. Install these feet before placing the unit in its final location.

Location and Leveling

Locate the cabinet on a level surface in an area of minimum temperature change. The cabinet should be placed away from personnel traffic, air-conditioning or heating ductwork, and/or laboratory windows and doors. Proper cabinet location is essential as drafts can disrupt critical airflow characteristics and allow room contaminants to enter or escape the cabinet work area.

Place the cabinet on an existing table or counter. The depth of the table or table must be at least 36 inches to accommodate the unit.

Warning The cabinet weighs approximately 475 lbs. Use proper equipment when moving this unit. s

Allow a 6” minimum clearance between the top of the cabinet and the laboratory ceiling to ensure an adequate air supply to the blower.

Place a bubble-type level on the work surface and ensure the cabinet is level.

Optional Stand

If the optional stand is to be used, adjust the leg levelers to obtain the correct height (30”-36”) for the work surface. Make sure all four levelers are in full contact with the floor.

Power Connection

Connect the power cord to a grounded dedicated power source. Refer to the electrical data plate mounted on the unit, or the electrical schematic, for exact electrical specifications.

The power cord is the mains disconnect. Make sure the outlet is accessible at all times.

General Recommendations

- Keep the activity in the room to a minimum when the cabinet is in use.
- Keep all laboratory doors closed to prevent drafts that will disturb critical airflow characteristics.
- Segregate clean and dirty materials.
- Do not place anything on the intake grille.
- The operator should work at a normal pace, avoiding rapid arm movements.
- Practice good aseptic technique to ensure safe use of the cabinet.
- To increase the life of the HEPA filters, check the pre-filters regularly and replace them as necessary. See Section 6.

Cabinet Wipedown

Before operating the cabinet, allow the unit to run for about 30 minutes. Then turn the blowers off and wipe the entire interior surface with a laboratory detergent/disinfectant to remove any remaining surface dirt.

Start-Up Procedure

1. Turn the cabinet lights on.
2. Check the intake grille to ensure that it is not blocked.
3. Turn on the blower on and allow the unit to warm up for 15 minutes before use.
4. Wash your hands and lower arms with germicidal detergent.
5. Disinfect the entire work area.
6. Place everything needed inside the cabinet.

Cabinet Shutdown

1. Surface decontaminate all surfaces with the appropriate disinfectant and enclose all equipment that has been in direct contact with the bedding.
2. Allow the cabinet to run for at least five minutes with no activity to allow time for all airborne contaminants to be purged from the work area.
3. Remove all equipment.
4. Wipe down all interior surfaces with the appropriate disinfectant to the work being performed.

Caution Before using any cleaning or decontamination method not recommended by the manufacturer, check with the manufacturer that the proposed method will not damage the unit. s

Section 3 Operation

The controls and indicating devices are described below.

Blower Switch

The blower switch controls the power to the blower motor.

Light Switch

The light switch controls power to the fluorescent lamps in the work area or the optional ultra-violet lamp.

Static Pressure Gauge (In. W.G.)

The optional static pressure gauge measures the air pressure differential across the filters, providing an indication of filter “loading”. As the filters become dirty, the resistance to air passage increases, and the reading on the static pressure gauge increases accordingly. When the reading increases by 50%, check the cabinet airflow with a thermoanemometer. The filters should be replaced if they are shown to be inefficient due to loading.

Note Static pressure gauge should not be used as a direct measure of airflow. s

Blower Speed Control

Note The blower speed is set at the factory and should only be changed by a qualified technician. s

The blower speed control is located beside the blower switch on the control panel. The speed control is used to adjust the air velocity from the blower motor. A clockwise turn of the adjustment screw increases the air velocity.

Reset Button

The Reset button is an in-line circuit breaker. If an overload condition occurs, the circuit breaker will trip. The Reset button will protrude from the panel. Depressing the button will reset the circuit breaker.

Ultra-Violet Light (optional)

Warning Potential eye damage may result from viewing the light produced by ultraviolet light sources installed in this equipment. Never work in this unit with the ultraviolet light operating. s

Cabinets may be equipped with an optional ultraviolet germicidal light. These bulbs lose their effectiveness over a period of time and should be replaced about every 6 months. A 115V (1A maximum) electrical outlet for connecting optional ultra-violet light is located beside Reset button.

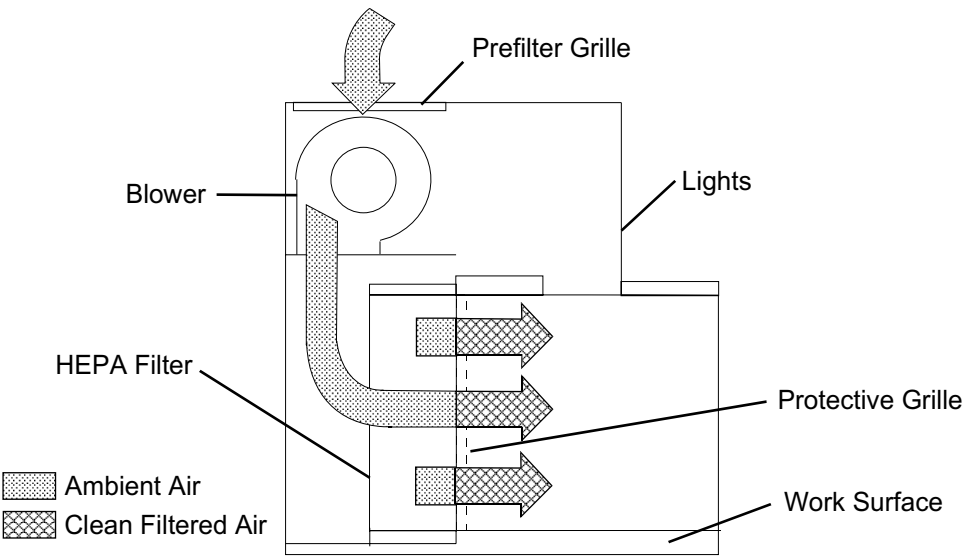


Figure 3-1. Side View

Section 4 Testing Procedures

A list of certification companies is included on the Thermo website, or call the Technical Services department. See Page iii.

Note As shipment stress can affect the integrity of the cabinet, certification by specialized service personnel is necessary after installation. s

Certification is recommended:

- ~ Annually
- ~ If cabinet is moved
- ~ After replacing HEPA filter
- ~ After any inside cabinet service work is done

HEPA Filter Leak Test (DOP Test)

1. Place the DOP aerosol generator so that DOP is introduced into the openings under the pre-filter.
2. Turn on a photometer and calibrate in accordance with the manufacturer's instructions.
3. Scan the downstream sides and the perimeter of each HEPA filter by passing the photometer probe in slightly overlapping strokes over the entire filter surface, with the nozzle of the probe not more than one inch from the surface. Scan the entire periphery of the filter plus the junction between the filter and the filter mounting frame. Scanning should be done at a traverse rate of not more than two inches per second or ten feet per minute.

Note DOP penetration must not exceed 0.01% as measured by a linear photometer. s

Air Velocity Profile Test

Note A drop in line voltage will cause a corresponding drop in airflow. Check the voltage to the unit before airflow measurement. If low voltage is a problem, this must be corrected in the building system. s

Airflow measurements should be taken by using a thermoanometer mounted on a support stand. The measurements should be taken following a lateral pattern six inches inside the front opening and six inches from the solid cabinet surfaces with six inch centers. These readings should fall in the range of 70-110 LFPM (linear feet per minute) with an average of about 90 LFPM.

If the airflow readings do not average about 90 LFPM, adjust the blower speed control to attain this value. As the filters load with particulate, airflow will begin to drop. If adjustment of the speed control cannot compensate for the filter loading (the control is turned up to full and at least 80 LFPM cannot be obtained), then the filters must be changed.

LAMINAR AIR WORK STATION TEST REPORT FORM

MODEL (S): 1849, 1851

S/N: _____ TRANSFER TO S/N: _____

HEPA FILTER LEAK TEST: Aerosol penetration shall not exceed 0.01% [] Yes

Filter scanned by: _____ Repairs made by: _____ # of holes _____
 Supply filter size: 30 x 48 x 6
 Manufacturer: DONALDSON Resistance (s): _____ @ _____ CFM or LFM
 or _____

GROUND CONTINUITY RESISTANCE:

(0.1 ohms max.) Cabinet: _____ Ohms Receptacle: _____ Ohms

GROUND LEAKAGE TEST:

(500 ma max.)

	Cabinet	Receptacles
Normal, neutral open, switches on		
Reverse, neutral open, switches on		
Normal, neutral closed, switches on		
Reverse, neutral closed, switches on		

POLARITY: Meets N.E.C. [] Yes [] N/A

TEST VOLTAGE: 120 or 220 (circle one) FLA: _____

VELOCITY PROFILE: 6.0 Inches from cage sides with successive points 11.5 inches apart.
 6.0 Inches from cage top or bottom with successive points 8.25 inches apart.
 6.0 Inches from protective grille on a parallel plane

TOTAL SUM _____ + 12 = Average air flow velocity _____ LFPM.

ACCEPTABLE AIR FLOW RANGE: 85 - 95 in linear feet per minute.

TESTED BY: _____ DATE: _____

(LAW1849; Rev. 4, 03/31/87 - Form Approval B&M 4-3-98)

Section 5 Routine Maintenance

Routine maintenance procedures follow.

Check Static Pressure Gauge “Zero”

In order to provide an accurate reading, the indicating needle of the static pressure gauge should be precisely at zero when the cabinet is completely shut off. If the cabinet is connected to a central exhaust system, the exhaust system must also be shut off.

Upon initial start-up or after the HEPA filter has been replaced, the static pressure gauge should read (or be set to) zero when the cabinet is not operating. When the cabinet is restarted and proper airflow balance has been achieved, the gauge reading should be recorded. This reading will serve as a baseline of subsequent filter loading. If the reading increases by approximately 50%, the airflow balance should be checked again. The filters will likely need replacing.

Replace the Pre-Filter

The pre-filter is used to extend the effective life of the HEPA filter. The pre-filter should be replaced three times a year, depending upon environmental conditions. The pre-filter is located behind the grille on the back wall of the cabinet.

Caution It is not necessary to decontaminate the cabinet before replacing the pre-filter. Do not turn the cabinet off. Allow it to run during the replacement procedure. Wear gloves to prevent personal injury. Handle pre-filters by the edges only. Broken edges of the metal filter grid are very sharp.

1. Remove the pre-filter by lifting it upward to disengage from the retaining lip. Then pull out and down to remove. Discard.
2. Install the new fiberglass pre-filter by inserting under the lip on the top edge of the opening, and pressing it into position. Slide it down until it is seated on the ledge behind the lip.

Replace Fluorescent Light Bulb

1. Turn the unit off and disconnect from the power source.
2. Remove the pre-filter and grille from the top of the unit.
3. Remove the tie wrap securing the line cord to control panel, located on the rear interior wall of blower compartment.
4. Remove screws securing control panel.
5. Slide the control panel.
6. Grasp the fluorescent light bulb on the right end by the socket, and gently push it to the left and pull out.
7. Replace with the new bulb.

Section 6 Service

Warning Before service is performed on the cabinet, decontaminate the unit! s

Warning De-energize all potential sources of energy to this unit and lockout/tagout their controls. (O.S.H.A. Regulation, Section 1910-147.) s

Replace the Supply HEPA Filter

1. Remove the pre-filter and the plastic egg crate grille.
2. Remove the 8 screws securing the blower motor assembly and remove the tie wrap on the back wall. Remove the blower motor.
3. Remove the screws securing the motor mount assembly and lift the entire assembly out of the unit.
4. Carefully remove the wooden drive wedges holding the HEPA filter in place and lift the filter out of the top of the unit.
5. With a vacuum cleaner, vacuum all the filter seating surfaces.
6. Slide the replacement filter in place and verify that the gasket seal is evenly distributed.
7. Set the longer wedge back into the cabinet with the straight side against the back of the filter. Next set the shorter drive wedge into position with its straight side facing the back of the hood. Drive the wedge a little at a time on each side of the cabinet until the filter is sealed. The neoprene gasket seal should be compressed at least 50%.

Caution Recertify the cabinet after filter replacement. s

Replace the Blower and/or Motor

Note Access to the blower is through the pre-filter grille. s

1. Loosen the set bolt on the blower shaft wheel from inside the left side of the scroll (as viewed from the back).
2. Remove the (3) bolts and washers securing the motor to the scroll on the right side of the blower assembly.
3. Disconnect the green ground wire.
4. Disconnect the wiring at the junction box. Note the wiring configuration.
5. Remove the blower motor, and replace it with the new motor. Align the blower wheel, and tighten.
6. Connect the wiring in the same configuration as the old blower motor.
7. Re-install the pre-filter grille and pre-filter.

Replace the Blower Speed Control

1. Remove the pre-filter grille and prefilter. Locate the blower speed control mounted on the front (right side).
2. Locate the blower speed control mounted on the side of the blower chamber below the power switch.
3. Remove the nut from the blower speed adjustment control.
4. Unsolder the wiring to the control. Note the wiring configuration.
5. Remove the speed control potentiometer.
6. Install the new blower speed control by reversing the above procedure.
7. Re-install the pre-filter and the pre-filter grille.

Section 7 Troubleshooting

Warning Before service is performed on the cabinet, decontaminate the unit! s

Warning Service is only to be performed by qualified service personnel. s

Problem: Air flow in the cabinet work area and through the exhaust filter is inadequate.

Possible Causes:

1. Unit not plugged in.
2. Blower motor overheated due to low electrical voltage. Step up voltage or increase the speed control.
3. Blower motor overheated due to excessive heat load in work area. Diminish heat load in work area.
4. Blower motor or speed control is defective. Replace the speed control.
5. Defective motor bearings or blower motor. Replace the bearings or the blower motor.
6. If the static pressure gauge reading has increased approximately 50% from its initial readings, the filter has likely loaded with dirt and the speed control must be adjusted. If proper airflow cannot be reached by adjusting the speed control, decontaminate the cabinet and replace all HEPA filters.

Problem: Static pressure gauge does not work.

Possible Causes:

1. Verify that the hose is tightly attached to a high pressure port of the gauge and to the cabinet (front top right of the service box). If properly tightened, the static pressure gauge is likely defective and should be replaced.

Problem: Noisy fan or motor operation.

Possible Causes:

1. Debris in the blower housing. Remove the access panel and inspect motor and blower assembly. Remove any debris.
2. Overheated speed control due to excessive heat load in the work area. Determine and decrease source of the heat load.
3. Defective speed control. Replace the speed control.
4. Motor failure or motor out of balance. Balance or replace the motor.

Problem: Fluorescent lights are not working.

Possible Causes:

1. Plug and socket at the ends are improperly connected. Check to see that the bulb pins contact both sockets.
2. Light bulb improperly grounded. Have a qualified electrician trace the source of the bad ground and correct it.
3. Defective or burned-out bulb. Replace the fluorescent bulb.
4. Ballast failure. Replace the defective ballast.

Section 8 Specifications

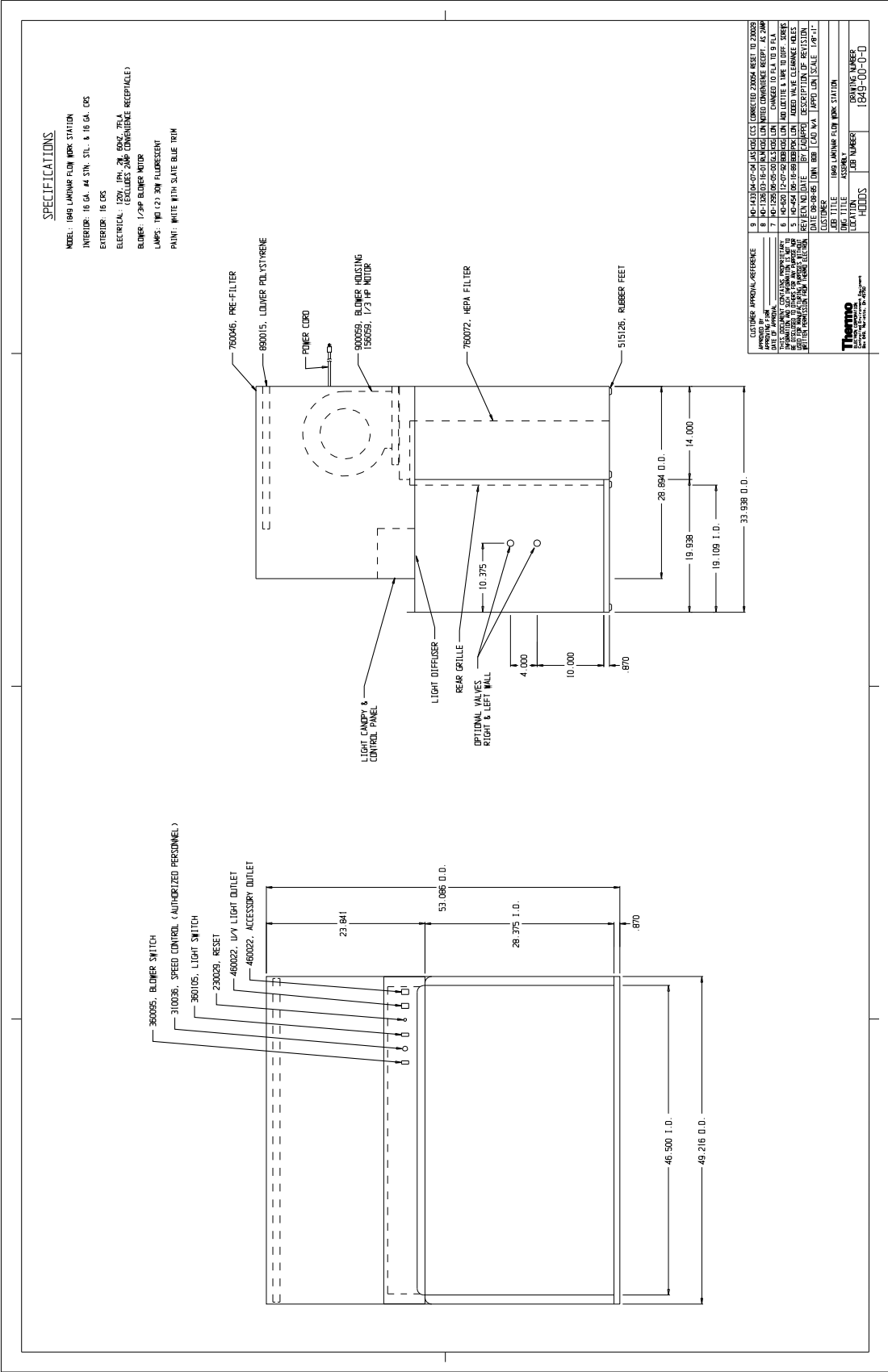
Interior Dimensions .46.5"W x 28.4"H x 19.1" F-B
.....(118.1cm x 72.1cm x 48.5cm)
Exterior Dimensions .49.2"W x 53.1"H x 34.0" F-B
.....(125.0cm x 134.9cm x 86.4cm)
Electrical115V, 60Hz, 9.0 FLA
Shipping Weight400 lbs. (181kg)

The workstation is designed to be electrically safe in the following environmental conditions:

- Indoors
- Altitude: Up to 2,000 meters
- Temperature: 5°C to 43°C
- Humidity: 80% RH at or below 31°C, decreasing linearly to 50% RH at 40°C
- Mains Supply Fluctuations: $\pm 10\%$ of nominal.
- Installation Category II ¹
- Pollution Degree 2 ²
- Class of Equipment I

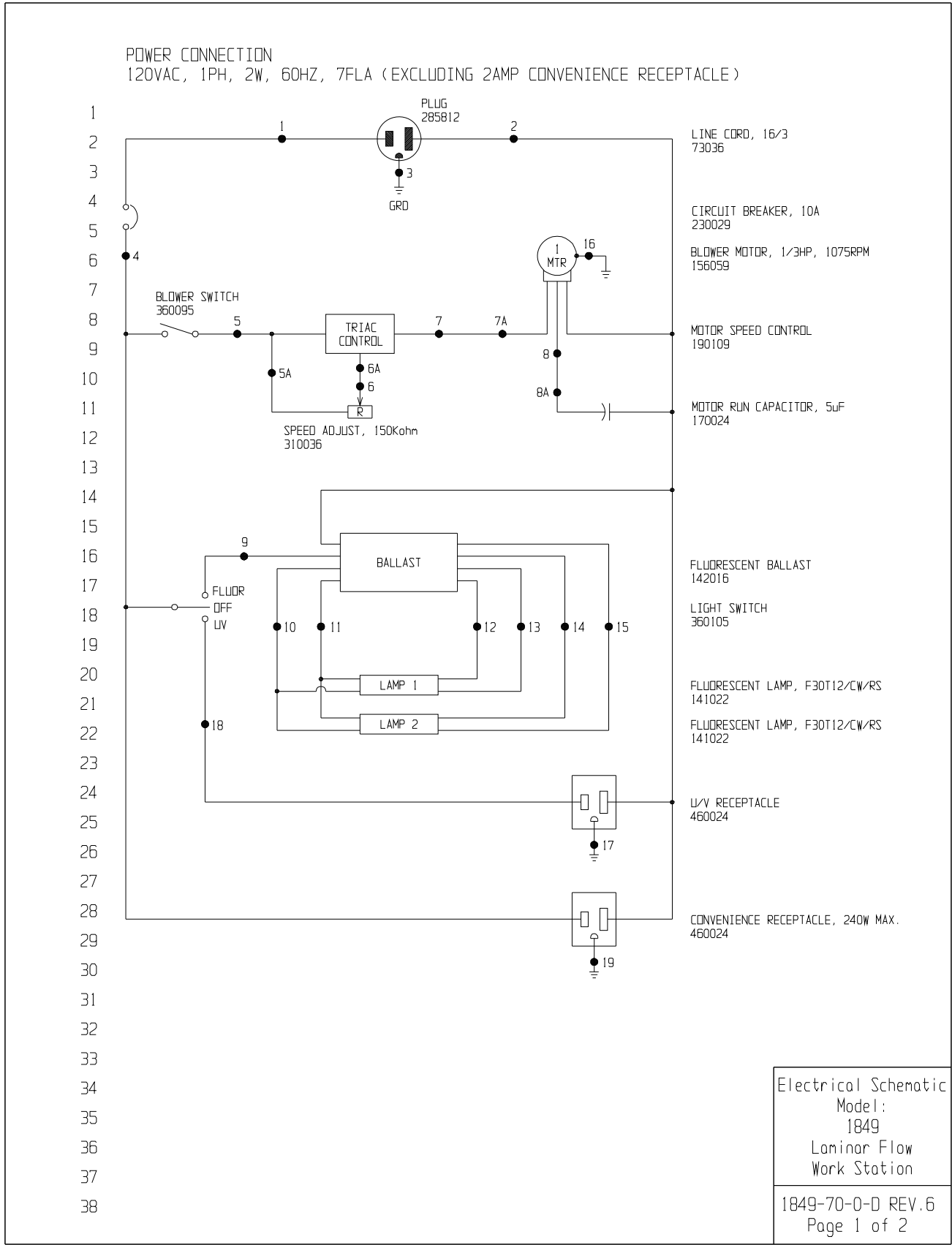
¹ Installation category (overvoltage category) defines the level of transient overvoltage which the instrument is designed to withstand safely. It depends on the nature of the electricity supply and its overvoltage protection means. For example, in CAT II which is the category used for instruments in installations supplied from a supply comparable to public mains such as hospital and research laboratories and most industrial laboratories, the expected transient overvoltage is 2500V for a 230V supply and 1500V for a 120V supply.

² Pollution degree describes the amount of conductive pollution present in the operating environment. Pollution degree 2 assumes that normally only non-conductive pollution such as dust occurs with the exception of occasional conductivity caused by condensation.



Section 9 Parts List

Qty	Stock #	Description
2	141022	Lamp, Fluorescent (F3012CW/RS)
1	142016	Lamp Fixture, F30-T12
1	170024	Motor Capacitor, 5 MFD, 370V
1	190109	Triac Motor Speed Control
1	156059	Blower Motor, 1/3 HP
1	900052	Blower Boot
1	900059	Blower
1	230029	Circuit Breaker 10 Amp
1	285812	Plug, Hospital Grade, 15A, 3-Wire
12 ft	73036	Line Cord 16/3
2	460024	Outlet, 3W, Snap-in
1	760072	Supply Filter, HEPA, 30 x 48 x 6
1	760046	Pre-filter, 21.4 x 48.6 x 1



Electrical Schematic
Model:
1849
Laminar Flow
Work Station
1849-70-0-D REV.6
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WIRE REFERENCE CHART

WIRE NO.	GAUGE	COLOR
1	16	BLACK
2	16	WHITE
3	16	GREEN
4	16	BROWN
5	16	BLACK
5A	16	BLACK
6	20	ORANGE
6A	16	ORANGE
7	16	RED
7A	16	BLACK
8	16	BROWN
8A	16	RED
9	16	BLACK
10	20	YELLOW
11	20	YELLOW
12	20	RED
13	20	RED
14	20	BLUE
15	20	BLUE
16	16	GREEN
17	16	GREEN
18	16	YELLOW
19	16	GREEN

NOTES:				6		HD-1601	04-03-09	JAS	JAS	CCS	CORRECT RUN CAP CONNECTION	Electrical Schematic Model: 1849 Laminar Flow Work Station
⊗ Denotes Terminal Strip Connection	Parts List Reference Number			5		SI-9779	09-18-07	CLK	SAG	LDN	CHGD 2ND RECEPT. TO 460024	
N/A Last Relay Number	○ Assembly			4		SI-9779	03-01-07	CLK	SAG	LDN	RECEPT. 460024 WAS 460022	
N/A Last Terminal Number	○ Panel			3		HD-1295	04-24-00	GLS	KDG	LDN	CHANGED 9FLA TO 7FLA	
19 Last Wire Number	○ Refrigeration			2		HD-246	09-02-87	BOB	N/A	LDN	REV. BLOWER MOTOR STK. NO.	
	□ Wiring					REV ECR NO. DATE		BY CAD		APPD DESCRIPTION OF REVISION		1849-70-0-D REV.6 Page 1 of 2
						DATE 08-06-65		DWN RTT		CAD JAS APPD LDN SCALE NTS		
						CUSTOMER						
						JOB TITLE		1849 LAMINAR FLOW WORK STATION				
						DWG TITLE		ELECTRICAL SCHEMATIC				
						LOCATION		JOB NUMBER		DRAWING NUMBER		
						H000S01				1849-70-0-D		

THERMO FISHER SCIENTIFIC LAMINAR FLOW EQUIPMENT WARRANTY USA

The Warranty Period starts two weeks from the date your equipment is shipped from our facility. This allows shipping time so the warranty will go into effect at approximately the same time your equipment is delivered. The warranty protection extends to any subsequent owner.

During the first thirty-six (36) months, component parts proven to be non-conforming in material or workmanship will be repaired or replaced at Thermo's expense, including labor. Installation, calibration and certification is not covered by this warranty agreement. The Technical Services Department must be contacted for warranty determination and direction prior to performance of any repairs. Expendable items, glass, filters and gaskets are excluded from this warranty.

Replacement or repair of component parts or equipment under this warranty shall not extend the warranty to either the equipment or to the component part beyond the original warranty period. The Technical Services Department must give prior approval for return of any component or equipment. At Thermo's option, all non-conforming parts must be returned to Thermo postage paid and replacement parts are shipped FOB destination.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL, OR IMPLIED. NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY.

Thermo shall not be liable for any indirect or consequential damages including, without limitation, damages to lost profits or loss of products.

Your local Thermo Sales Office is ready to help with comprehensive site preparation information before your equipment arrives. Printed instruction manuals carefully detail equipment installation, operation and preventive maintenance.

If equipment service is required, please call your Technical Services Department at 1-800-438-4851 (USA and Canada) or 1-740-373-4763. We're ready to answer your questions on equipment warranty, operation, maintenance, service, and special applications. Outside the USA, contract your local distributor for warranty information.



Rev. 5 4/09

THERMO FISHER SCIENTIFIC LAMINAR FLOW EQUIPMENT WARRANTY INTERNATIONAL

The Warranty Period starts two months from the date your equipment is shipped from our facility. This allows shipping time so the warranty will go into effect at approximately the same time your equipment is delivered. The warranty protection extends to any subsequent owner.

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THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL, OR IMPLIED. NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY. Thermo shall not be liable for any indirect or consequential damages including, without limitation, damages to lost profits or loss of products.

Your local Thermo Sales Office is ready to help with comprehensive site preparation information before your equipment arrives. Printed instruction manuals carefully detail equipment installation, operation and preventive maintenance.

If equipment service is required, please call your Technical Services Department at 1-888-213-1790 (USA or Canada) or 1-740-373-4763. We're ready to answer your questions on equipment warranty, operation, maintenance, service, and special applications. Outside the USA, contract your local distributor for warranty information.



Rev. 4 2/07

Locating a Certification Company

Biological safety cabinet certification consists of a series of tests designed to verify that the cabinet is performing within operating parameters established by the manufacturer.

To assure that a biological safety cabinet is operating as intended, each cabinet should be field-tested at the time of installation and at least annually thereafter. Cabinets should be re-certified whenever HEPA filters are changed, internal maintenance is performed, or is relocated.

Three industry-related organizations maintain lists of companies and individuals who are active in the certification industry. You may contact these organizations at the addresses listed below.

NSF International (NSF) and International Air Filtration Certifiers Association (IAFCA) sponsor certifier accreditation programs. Accredited certifiers have demonstrated proficiency at testing biological safety cabinets by successfully completing written and/or practical examinations.

Biohazard Cabinet Field Certifier Program
NSF International
PO Box 130140
789 N. Dixboro Rd
Ann Arbor, MI 48113-0140
Telephone (734) 769-8010 Or (800) NSF-MARK
Fax (734) 769-0109
<http://www.nsf.org/Certified/Biohazard-Certifier>

IAFCA
PO Box 12155
Columbus, OH 43212
Telephone (888) 679-1904
Fax (614) 486-1108
<http://www.iafca.com/certifier.html>

The Controlled Environment Testing Association (CETA) is a trade association devoted to promoting and developing quality assurance within the controlled environment testing industry. A list of active members is available by contacting the organization.

Controlled Environment Testing Association
1500 Sunday Drive
Suite 102
Raleigh, NC 27607
Telephone (919) 787-5181
Fax (919) 787-4916
http://www.cetainternational.org/members/corp_indiv.htm

For your convenience we have included a partial list of agencies that perform certification on our website. If you do not find someone listed in your area, please contact Thermo's Technical Services department for additional references.

Thermo Scientific
Controlled Environment Equipment
401 Millcreek Road
Marietta, Ohio 45750
United States

www.thermofisher.com