

LOS RIOS COMMUNITY COLLEGE DISTRICT

PURCHASING: (916) 568-3071 • FAX: (916) 568-3145
 ACCOUNTING OPS: (916) 568-3065 • FAX: (916) 286-3636

PURCHASE ORDER NO 0001085177

PLEASE SEE REVERSE SIDE FOR TERMS AND CONDITIONS.

Date	Revision	Page
01/25/2016		1
Payment Terms	Freight Terms	Ship Via
NET 30	Shipping Point	Best Metho
Reference:	Location / Dept	
1007502 ZWERENZ K ROUILLER S	04EDCA103 SCI AH	

Supplier: 0000001927
 FISHER SCIENTIFIC
 4500 TURNBERRY DR
 HANOVER PARK IL 60133

Phone: (800) 766-7000
 Fax: (800) 926-1166

email:

Ship To: EL DORADO CENTER
 RECEIVING
 6699 CAMPUS DR
 PLACERVILLE CA 95667
 United States

Bill To: 1919 Spanos Court
 Sacramento CA 95825-3981
 United States

Tax Exempt? N

Line-Sch	Item/Description	Quantity	UOM	PO Price	Extended Amt	Due Date
1- 1	THERMOCYCLER, PROFLEX 2X32 WELL PCR SYSTEM CAT#4484073	1.00	EA	5,500.00	5,500.00	01/25/2016
2- 1	RXN TUBES WITH CAPS MICROAMP CAT# N8010540	1.00	EA	124.00	124.00	01/25/2016

PER QUOTE# 5321-3331-61

Sub Total Amount	5,624.00
Sales Tax Amount	421.80
Total PO Amount	6,045.80

BU	Acct	Fd	Org	Prog	Sub	Proj	Amount	BYear
GENFD	6492	12	FL.VI.CTEF	12050	00000	482F	6,045.80	2016

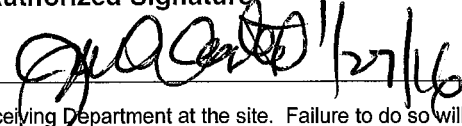
0001007502KIRKLINK22-JAN-2016

Verification of this purchase order can be made using the Los Rios Community College District web site listed below. If you have any questions, please contact the Purchasing Office at (916) 568-3071.

<http://www.losrios.edu/purchasing/povalidation>

All shipments, invoices, and correspondence must be identified with our Purchase Order Number. Overshipments will not be accepted unless authorized by Buyer prior to shipment.

Authorized Signature



Notice to vendor: You are responsible for delivering goods and delivery documents to the Receiving Department at the site. Failure to do so will delay payment processing. Vendor is responsible for obtaining verification of delivery by authorized Receiving Room personnel. Receipt of goods by other parties and failure to obtain authorized signatures may also delay payment. NOTE: PAYMENT TERMS NET 30 MATERIAL SAFETY DATA SHEETS (MSDS) must be provided with the delivery of product as required by law.

LOS RIOS COMMUNITY COLLEGE DISTRICT

American River College • Cosumnes River College • Folsom Lake College • Sacramento City College

PURCHASE ORDER TERMS AND CONDITIONS

1. **APPLICABLE LAW:** The contract resulting from this order shall be governed by the laws of the State of California
2. **COMPLETION OF ORDERS:** LRCCD reserves the right to withhold payment until order is completed.
3. **DISCOUNTS:** Please show cash payment discount offered on your invoice in connection with any discount offered, time will be computed from date of delivery of the supplies or equipment, or from date correct invoices are received in the office specified by LRCCD if the latter date is later than the date of delivery. Payment is deemed to be made for the purpose of earning discount, on the date payment is mailed or on behalf of LRCCD.
4. **INVOICES:** Invoices shall be prepared and submitted in duplicate unless otherwise specified. Invoices shall contain Purchase order number, date, description of items, sizes and quantities, unit prices, extended totals, place and date of delivery. Invoices or vouchers not on printed bill heads shall be signed by the CONTRACTOR or person furnishing the supplies or services. Every invoice shall be properly itemized. If LRCCD has not received billing for product or services within a one year period LRCCD will not be held responsible for satisfying the debt.
5. **CHANGES:** No change or modification in terms, quantities, or specifications may be made without express authorization in writing from the LRCCD Purchasing Office and signed by the parties hereto, and no oral understanding or agreement not incorporated herein shall be binding on any of the parties hereto. If unit cost of any item exceeds the amount shown by 10% or \$250.00 whichever is less do not ship. Contact LRCCD Purchasing at the phone number provided.
6. **BILL OF LADING:** If Bill of Lading is applicable to this order, send originals to "Ship to" address and duplicate Bill of Lading with invoices to "Bill to" address. All correspondence, invoices, bills of lading, shipping memos, packages, etc., must show purchase order number. If factory shipment, advise factory to comply.
7. **TRANSPORTATION CHARGES:** Invoices for prepaid transportation charges must be supported by original receipted expense bills.
8. **FOB POINT AND FREIGHT CHARGES:** Unless otherwise specified on this order, all items shall be delivered FOB Destination. No charge for delivery, drayage, express, parcel post, packing, cartage, insurance, license fees, permits, or for any other purpose will be paid by LRCCD unless expressly included and itemized in the order. Unless otherwise shown, on "FOB Shipping Point" transactions, CONTRACTOR shall arrange for lowest cost transportation, prepay and add freight to invoice and furnish supporting freight bills if the amount exceeds \$50.00. On "FOB Shipping Point" transactions, should any shipments under this purchase order be received by LRCCD in a damaged condition and any related freight loss and damage claims filed against the carrier or carriers be wholly or partially declined with the inference that damage was the result of the act of the shipper such as inadequate packaging or loading or some inherent defect in the equipment and/or material, CONTRACTOR on request of LRCCD shall at CONTRACTOR's own expense assist LRCCD in establishing carrier liability by supplying evidence that the equipment and/or materials was properly constructed, manufactured, packaged, and secured to withstand normal transportation conditions. Shipments that are California intrastate in nature and where freight is to be borne by LRCCD shall be tendered to carriers with written instructions that rate and charges may not exceed the lowest lawful rates on file with the California Public Utilities Commission.
9. **PATENT INDEMNITY:** The CONTRACTOR shall hold LRCCD, its officers, agents and employees harmless from alleged liability of any nature or kind, including costs and attorney fees and expenses, for infringement or use of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, article or appliance furnished or used in connection with the contract or purchase order.
10. **TAXES:** Certain articles sold to LRCCD are exempt from certain Federal excise taxes. LRCCD will reimburse the CONTRACTOR for, or pay directly, all California State and local sales and use taxes applicable to this purchase.
11. **EQUAL OPPORTUNITY EMPLOYER:** The acceptance of this purchase order by a supplier of goods and services is a certification that such supplier complies with all provisions of executive order 11246 and is an equal opportunity employer.
12. **GENERAL SAFETY ORDERS:** All materials, supplies and services sold to LRCCD shall conform to the general safety orders of the State of California. All materials, except as otherwise specified, must be new and of the best quality of their respective kinds.
13. **INDEMNIFICATION:** CONTRACTOR shall indemnify, defend and hold harmless LRCCD, its trustees, officers, agents, employees and volunteers, from any and all claims, demands, suits, causes of action, damages, penalties, breaches of this agreement, infringement of patent rights, costs, expenses, violations of employee occupational health and safety laws, attorney fees, losses or liability, property damage, personal injuries to or death of persons, arising out of, alleged to have arisen out of, or relating in any way to CONTRACTOR's work to be performed under this agreement, except if caused solely by the negligence of LRCCD.
14. **TERMINATION:** LRCCD may terminate this agreement and be relieved of the payment of any consideration to CONTRACTOR should CONTRACTOR fail to perform the covenants herein contained at the time and in the manner herein provided. In the event of such termination LRCCD may proceed with the work in any manner deemed proper by LRCCD. The cost to LRCCD shall be deducted from any sum due the CONTRACTOR under this agreement and the balance if any, shall be paid the CONTRACTOR upon demand.
15. **ASSIGNMENT:** Without the written consent of LRCCD, this agreement is not assignable by CONTRACTOR either in whole or in part.
16. **PUBLIC WORKS PROJECTS:** CONTRACTOR must comply with Public Contract Code.
17. **CA LABOR CODE:** Pursuant to Section 1700, and following, the CONTRACTOR shall pay not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations. Copies of such prevailing rate of per diem wages are on file at the Business Office of the Los Rios Community College District, 1919 Spanos Court, Sacramento, CA 95825. Those copies shall be made available to any interested party upon request. The CONTRACTOR shall forfeit, as penalty to the LRCCD, Fifty Dollars (\$50.00) for each calendar day or portion thereof, for each workman paid less than the stipulated prevailing rates for any work done under the contract by him/her or by any subcontractor under him, in violation of the provisions of such Labor Code.
18. **NOTICE:** Your employees may be exposed to hazardous substances during the course of their work while on LRCCD property. For additional information on the hazardous substances that your employees may be exposed to contact the LRCCD General Services Department at (916) 568-3048.
19. **INSURANCE:** CONTRACTOR shall, at all times, maintain in full force and effect the following insurance: Workers' Compensation, Commercial General Liability, Auto Liability, and Professional Liability if licensed professional. Policy limits for each shall be at least \$1,000,000 AND \$3,000,000 AGGREGATE for bodily injury, personal injury and property damage. Any combination of General Liability and Excess Coverage can be combined to meet the Aggregate. LRCCD shall be named as an additional insured on CONTRACTOR's policies. The CONTRACTOR shall provide a certificate of insurance and required endorsements to comply with this section at least 15 days prior to commencement of work under this contract. The certificate shall state that LRCCD will be given 30 days notice of any material change or cancellation in coverage.
20. **DISQUALIFIED EMPLOYEES:** CONTRACTOR shall ensure that persons who perform services on LRCCD property have not been convicted of any felony, or any controlled substance offense or any sex offense as those terms are defined by Education Code section 87008-87010. If LRCCD determines that any person employed by CONTRACTOR to work on LRCCD property is incompetent, unfaithful, intemperate, disorderly, abusive or is otherwise unsatisfactory, CONTRACTOR shall cause that employee to be removed from working on LRCCD property immediately, and that person shall not be employed again on LRCCD property.
21. **WORK AUTHORIZATION:** Prior to LRCCD's acceptance of this Agreement, CONTRACTORS who are not U.S. citizens must provide verification of (a) work authorization status from the appropriate U.S. Department of State; (b) a copy of their U.S. visa; (c) the number of days present in the U.S.; and (d) tax treaty status. LRCCD shall not make any payments to CONTRACTOR unless CONTRACTOR holds the appropriate U.S. visa. CONTRACTOR is responsible for ensuring they are in possession of the appropriate visa.
22. **WARRANTY:** CONTRACTOR expressly warrants that all materials, goods, equipment, services, and/or labor shall conform to the requirements set forth or incorporated into this order and any applicable industry standards or requirements, shall be merchantable and free from defects in workmanship, materials and/or design (including latent defects), and shall perform as specified. CONTRACTOR further warrants that all materials, goods, equipment, services, and/or labor will be fit and sufficient for the particular purposes intended by LRCCD. Unless agreed upon otherwise between LRCCD and CONTRACTOR, the warranty period shall be the longer of: (a) any express warranty included in this service agreement; (b) one year after the materials, goods, equipment, services, and/or labor are accepted by LRCCD; or (c) any warranty period provided under any applicable California law.

Requisition

Supplier FISHER SCIENTIFIC
 9999 VETERANS MEMORIAL DRIVE
 HOUSTON TX 77038
 United States

Ship To: RECEIVING
 6699 CAMPUS DR
 PLACERVILLE CA 95667

F.I.C. BUSINESS SERVICES
 2016 JAN 21 P 3: 58

Business Unit: GENFD OPEN		Page 1
Req ID: 0001007502	Date: 11/17/2015	
Requisition Name: FISHER SCIENTIFIC		
Requester: Kimberly Zwerenz	Bldg# SCI AH	
Requester Signature		
Buyer: Suzanne Rouiller		
Approved:		

Line-Schd	Description	Quantity	UOM	Price	Extended Amt	Due Date
1-1	THERMOCYCLER, PROFLEX 2X32 WELL PCR SYSTEM CAT#4484073	1	EA	5,500.00	5,500.00	11/20/2015
2-1	RXN TUBES WITH CAPS MICROAMP CAT# N8010540	1	EA	124.00	124.00	11/20/2015

Total Requisition Amount: 5,624.00

PER ATTACHED QUOTE 5285-2586-36

MERCHANDISE TOTAL: \$5624.00
 SHIPPING 00.00
 TAX 421.80 ✓
 TOTAL \$6045.80

PROGRAM WANTS THIS PARTICULAR VENDOR AND THIS UNIT. FISHER IS THEIR DISTRIBUTOR

BU	Acct	Fd	Org	Prog	Sub	Proj	Amount
GENFD	6492	12	PL.VI.CTEF	12050	00000	482F	5,624.00

F.I.C. BUSINESS SERVICES
 2015 DEC 14 P 12: 52

Purchases Charged to Catagorical Programs, Grants or Special Project.

This purchase is in compliance with the requirement of 482F CTEF

For grants/special projects CTEF 482 F

Eligible Managers

Name: Ken Harrell

Approval Signature 	Approval Signature 	Approval Signature
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Sales Quotation

Quote Nbr	Creation Date	Due Date	Page
5321-3331-61	11/17/2015		1 of 1
Payment Terms		Delivery Terms	
NET 30 DAYS		DEST	
Valid To		Prepared By	
12/17/2015		DOWNEY, HEATH	
Customer Reference		Sales Representative	
QUOTE		HEATH DOWNEY	
To place an order	Ph: 800-766-7000	Fx: 800-926-1166	
Submitted To:		Customer Account: 479900-008	
HEATH DOWNEY HEATH.DOWNEY@THERMOFISHER.COM 530-559-2566		FOLSOM LAKE COLLEGE SCIENCE LAB 6699 CAMPUS DR PLACERVILLE CA 95667 ATTN: KIM ZWERENZ	



FISHER SCIENTIFIC COMPANY LLC
4500 TURNBERRY DRIVE
HANOVER PARK IL 60133-5491

PLEASE REFER TO THE QUOTE NUMBER ON ALL
CORRESPONDENCE

THANK YOU FOR YOUR INTEREST IN FISHER
SCIENTIFIC COMPANY LLC

FOR COMPLETE TERMS AND CONDITIONS VISIT
OUR WEBSITE AT
www.fishersci.com/salesterms

Nbr	Qty	UN	Catalog Number	Description	Unit Price	Extended Price
1	1	EA	44 840 73	PROFLEX 3X32-WELL PCR SYSTEM Vendor Catalog # 4484073 Hazardous Material This item is being sold as 1 per each List Price: 9,000.00 CDC: 050	5,500.00	5,500.00
2	1	EA	N8010540	MICROAMP RXN TUBES WITH CAP Vendor Catalog # N8010540 Hazardous Material Shelf Life 5Y This item is being sold as 1 per each List Price: 124.00 CDC: 050	124.00	124.00
MERCHANDISE TOTAL						5,624.00
Estimated Sales Tax						449.92
TOTAL						6,073.92

NOTES:

We now offer highly competitive financing with low monthly payments. Please contact your local sales representative for more information.

Tell us about your recent customer service experience by completing a short survey. This should take no longer than three minutes. Enter the link into your browser and enter the passcode: USA-PGH-CS2

<http://survey.medallia.com/fishersci>

LOS RIOS COMMUNITY COLLEGE DISTRICT
Sole Source Purchase Justification

Vendor: Fisher Scientific Requisition No: 1007502
Commodity/Service: Thermocycler
Estimated annual expenditure for the above commodity or service: \$: ~~5000.00~~ 5124.00

Pursuant to Purchasing Policy, Sole Source purchase requests & approvals must be performed in advance and shall be supported by written documentation. This form and appropriate supporting documentation fulfills that requirement.

Initial all entries below that apply to the proposed purchase. Attach support documentation justification memo as described below (More than one entry will apply to most sole source products/services for purchase requested).

1. SOLE SOURCE REQUEST IS FOR THE ORIGINAL MANUFACTURER OR PROVIDER, THERE ARE NO REGIONAL DISTRIBUTORS. (Attach the manufacturer's written certification that no regional distributors exist. Item no. 4 also must be completed). Fisher only distributor
2. SOLE SOURCE REQUEST IS FOR ONLY GREATER SACRAMENTO AREA DISTRIBUTOR OF THE ORIGINAL MANUFACTURER OR PROVIDER. (Attach the manufacturers — not the distributor's — written certification that identifies all regional distributors. Item no. 4 also must be completed).
3. THE PARTS/EQUIPMENT IS NOT INTERCHANGEABLE WITH SIMILAR PARTS OF ANOTHER MANUFACTURER. (Explain in separate memorandum).
4. THIS IS THE ONLY KNOWN ITEM OR SERVICE THAT WILL MEET THE SPECIALIZED NEEDS OF THIS DEPARTMENT OR PERFORM THE INTENDED FUNCTION. (Attach memorandum with details of specialized function or application).
5. THE PARTS/EQUIPMENT IS REQUIRED FROM THIS SOURCE TO PERMIT STANDARDIZATION. (Attach memorandum describing basis for standardization request).
6. CALIFORNIA MULTIPLE AWARD SCHEDULE (CMAS) PURCHASE CONTRACT NO: _____
7. "PIGGY-BACK"/UMBRELLA PURCHASE ON ANOTHER GOVERNMENT ENTITY'S CONTRACTS
8. NONE OF THE ABOVE APPLIES. A DETAILED EXPLANATION AND JUSTIFICATION FOR THIS SOLE SOURCE REQUEST IS CONTAINED IN ATTACHED MEMORANDUM.

The undersigned requests commodities and services to be procured from the vendor identified as the sole source supplier of the service or material described in this sole source justification and is authorized as a sole source for the service or material.

Kim Harrell
AUTHORIZED SIGNATURE DATE 12/17/15 12-22-15

SOLE SOURCE AUTHORIZATION: (PURCHASING USE ONLY)

APPROVED DISAPPROVED

By: _____ Date: _____ Guidelines Div. #: _____

LOS RIOS COMMUNITY COLLEGE DISTRICT
Sole Source Purchase Justification

Date:

12/17/15

To:

~~Proxida Haney~~

DO Purchasing

From:

Kim Zwerenz

Subject: Justification Requirements for Sole-Source Procurements

Requisition No. 1007502

Vendor Name: Fisher Scientific

SOLE-SOURCE ITEMS

Sole-source items are those items which perform a certain function for which no other items are known to exist. In a highly technological society, either patents or a clearly superior product may perform a function that limits you to a sole source. If it is economically advantageous and critical for its use in conjunction with instruction or operation to use such a product, then it is suggested that you do so. Justification for specifying such items is extremely important and should be clearly stipulated. Sole-source situations can be minimized by your using performance specifications and request for quotes (RFQ's).

Competitive bidding is not a thoroughly suitable purchase method for sole-source items. It is best to advertise for bids on an "approved equal" basis; if no bids are offered, proceed to negotiate a fair and reasonable price with the sole source. When only one bid is received, you may have a sole-source situation if you believe that no other competitive sources are available.

Sole-source acquisitions must be justified in sufficient detail to explain the basis for suspending the usual competitive procurement process.

The following represents factors that might justify sole source:

1. What capability does the proposed vendor have that is critical to the specific effort and make the vendor clearly unique compared to other vendors in the same general field?
2. What prior experience of a highly specialized nature does the proposed vendor have that is vital to the proposed effort?
3. What facilities, staffing, and/or equipment does the proposed vendor have that are specialized and vital to the commodities or services required?
4. Does the proposed vendor have a substantial investment that would have to be duplicated at the District's expense by another vendor entering the field?
5. If schedules are involved, why are they critical and why can the proposed vendor best meet them?

The enclosed form should be completed and submitted with your Requisition for justification.

LOS RIOS COMMUNITY COLLEGE DISTRICT

1919 Spanos Court, Sacramento, CA 95825

Phone (916) 568-3071 FAX (916) 568-3145

Purchasing Department

lrcddpurchase@losrios.edu



Sacramento City College

American River College

Cosumnes River College

Folsom Lake College

CONFLICT OF INTEREST STATEMENT

This is to certify that the undersigned employee(s) has/have no economic interests which may foreseeably be materially affected by having participated in the development of the specifications for service, equipment and/or material represented by the referenced requisition.

(Pursuant to District Regulation R-8323 and District Policy P-8611

This form must be signed and submitted with the Purchase Requisition (GS Form 127) for those transactions listed below.)

- ❖ Sole Source
- ❖ Professional Service Agreements
- ❖ Service Agreements (GS Form 78: Rev. 2/2012)
- ❖ Selection Committee Recommendations (formal process)

READ CAREFULLY BEFORE SIGNING:

Kim Zang 12/17/15

Employee/Date

Selection Committee Member/Date

1007502

Requisition Number

Selection Committee Member/Date

Selection Committee Member/Date

Selection Committee Member/Date

Selection Committee Member/Date

Selection Committee Member/Date

OFFICIAL USE ONLY:	
PURCHASE ORDER#	
BUYER/DATE:	

December 22, 2015

To whom it may concern:

We are requesting Proflex PCR Thermocycler because it allows us more versatility in the laboratory setting. This thermocycler can run 3 – 32 well samples independently from each other. In other words 3 groups can start their samples at three different times and/or run 3 different protocols with different start/stop times. No other manufacturer makes a 3 block instrument. With other thermocyclers the whole class would need to start at the same time and would not be able to have any experimental variability, which is not viable in the classroom setting.

Regards,

Kim Zwerenz

Folsom Lake College El Dorado Center

Kim Harell

2015 DEC 22 P 2:38
FOLDSOM LAKE COLLEGE
BUSINESS SERVICES



by Thermo Fisher Scientific

Dear valued customer,

Thank you for your interest in our Thermal Cyclers products, part numbers listed below.

Part Number Description

4484071 ProFlex™ 2x96 well Block Module
4484074 ProFlex™ 2xFlat Block Module
4483636 ProFlex™ Base Module
4483637 ProFlex™ 96 well Veriflex Block Module
4484072 ProFlex™ 2x384 Block Module
4483638 ProFlex™ 3x32 Block Module
4484075 ProFlex™ 96 well Veriflex PCR System
4484076 ProFlex™ 2x96 well System
4484078 ProFlex™ 2xFlat Block System
4484077 ProFlex™ 2x384 System
4484073 ProFlex™ 3x32 System

The above products are proprietary technology of Life Technologies, part of Thermo Fisher Scientific. We offer distribution rights to Fisher Scientific, also part of Thermo Fisher Scientific, to distribute thermal cycler products to the educational and diagnostic markets.

The Applied Biosystems® ProFlex™ PCR System is covered by at least the IP listed in Exhibit A

(Intellectual Property Summary) enclosed herein.

Should you have any questions, please let us know.

Sincerely,

Cain Murphy
Senior Product Manager
Endpoint PCR Instruments

Exhibit A: Intellectual Property Summary

US Intellectual Property Protection

1. Title: MULTI-BLOCK PCR THERMAL CYCLER DEVICE

U.S. Design Patent Application No: 29/438,754

Status: Pending

2. Title: THERMAL CYCLER DISPLAY SCREEN

U.S. Design Patent Application No: 29/445,006

Status: Pending

3. Title: MOBILE APPLICATION USER INTERFACE

U.S. Design Patent Application No: 29/451,376

Status: Pending

4. Title: MOBILE APPLICATION USER INTERFACE

U.S. Design Patent Application No: 29/457,089

Status: Pending

5. Title: APPARATUSES, SYSTEMS AND METHODS FOR PROVIDING THERMOCYCLER THERMAL UNIFORMITY

U.S. Provisional Utility Patent Application No: 61/878,464

Status: Pending

International Intellectual Property Protection

1. Title: THERMAL CYCLER DISPLAY SCREEN

Indian Design Registration Application No: 255624

Status: Pending

2. Title: THERMAL CYCLER DISPLAY SCREEN

Indian Design Registration Application No: 255625

Status: Pending

3. Title: THERMAL CYCLER DISPLAY SCREEN

Indian Design Registration Application No: 255626

Status: Pending

4. Title: THERMAL CYCLER DISPLAY SCREEN

Indian Design Registration Application No: 255627

Status: Pending

5. Title: THERMAL CYCLER DISPLAY SCREEN

Indian Design Registration Application No: 255628

Status: Pending

6. Title: THERMAL CYCLER DISPLAY SCREEN

Indian Design Registration Application No: 255629

Status: Pending

7. Title: THERMAL CYCLER DISPLAY SCREEN

Indian Design Registration Application No: 255630

Status: Pending

8. Title: THERMAL CYCLER DISPLAY SCREEN

Indian Design Registration Application No: 255631

Status: Pending

9. Title: THERMAL CYCLER DISPLAY SCREEN

EU Community Design Registration: 002286104 [0001]

Status: Issued

10. Title: THERMAL CYCLER DISPLAY SCREEN

EU Community Design Registration: 002286104 [0002]

Status: Issued

11. Title: THERMAL CYCLER DISPLAY SCREEN

EU Community Design Registration: 002286104 [0003]

Status: Issued

12. Title: THERMAL CYCLER DISPLAY SCREEN

EU Community Design Registration: 002286104 [0004]

Status: Issued

13. Title: THERMAL CYCLER DISPLAY SCREEN

EU Community Design Registration: 002286104 [0005]

Status: Issued

14. Title: THERMAL CYCLER DISPLAY SCREEN

Japanese Design Registration Application No: 2013-17830

Status: Pending

15. Title: THERMAL CYCLER DISPLAY SCREEN

Taiwan Design Registration Application No: 102305178

Status: Pending

16. Title: MOBILE APPLICATION USER INTERFACE

Indian Design Registration Application No: 257134

Status: Pending

17. Title: MOBILE APPLICATION USER INTERFACE

Indian Design Registration Application No: 257143

Status: Pending

18. Title: MOBILE APPLICATION USER INTERFACE

Indian Design Registration Application No: 257135

Status: Pending

19. Title: MOBILE APPLICATION USER INTERFACE

Indian Design Registration Application No: 257136

Status: Pending

20. Title: MOBILE APPLICATION USER INTERFACE

Indian Design Registration Application No: 257137

Status: Pending

21. Title: MOBILE APPLICATION USER INTERFACE

Indian Design Registration Application No: 257138

Status: Pending

22. Title: MOBILE APPLICATION USER INTERFACE

Indian Design Registration Application No: 257139

Status: Pending

23. Title: MOBILE APPLICATION USER INTERFACE

Indian Design Registration Application No: 257140

Status: Pending

24. Title: MOBILE APPLICATION USER INTERFACE

Indian Design Registration Application No: 257141

Status: Pending

25. Title: MOBILE APPLICATION USER INTERFACE

Indian Design Registration Application No: 257142

Status: Pending

26. Title: MOBILE APPLICATION USER INTERFACE

EU Community Design Registration: 002314013 [0001]

Status: Issued

27. Title: MOBILE APPLICATION USER INTERFACE
EU Community Design Registration: 002314013 [0002]
Status: Issued
28. Title: MOBILE APPLICATION USER INTERFACE
EU Community Design Registration: 002314013 [0003]
Status: Issued
29. Title: MOBILE APPLICATION USER INTERFACE
EU Community Design Registration: 002314013 [0004]
Status: Issued
30. Title: MOBILE APPLICATION USER INTERFACE
EU Community Design Registration: 002314013 [0005]
Status: Issued
31. Title: MOBILE APPLICATION USER INTERFACE
EU Community Design Registration: 002314013 [0006]
Status: Issued
32. Title: MOBILE APPLICATION USER INTERFACE
EU Community Design Registration: 002314013 [0007]
Status: Issued
33. Title: MOBILE APPLICATION USER INTERFACE
Taiwan Design Registration Application No: 102306215
Status: Pending
34. Title: MOBILE APPLICATION USER INTERFACE
Indian Design Registration Application No: 258512
Status: Pending

35. Title: MOBILE APPLICATION USER INTERFACE

Indian Design Registration Application No: 258513

Status: Pending

36. Title: MOBILE APPLICATION USER INTERFACE

Indian Design Registration Application No: 258514

Status: Pending

37. Title: MOBILE APPLICATION USER INTERFACE

Indian Design Registration Application No: 258515

Status: Pending

38. Title: MOBILE APPLICATION USER INTERFACE

EU Community Design Registration: 02352419 [0001]

Status: Issued

39. Title: MOBILE APPLICATION USER INTERFACE

EU Community Design Registration: 02352419 [0002]

Status: Issued

Plews, Jeanne

From: Harrell, Kim
Sent: Wednesday, December 02, 2015 11:57 AM
To: Pedro, Jason
Cc: Plews, Jeanne; Zwerenz, Kim
Subject: RE: over budget- FIXED!

Follow Up Flag: Follow up
Flag Status: Flagged



Perfect! I am signing the online requisition for processing as is! Thanks everyone!

Kim Harrell, PhD | Dean of Workforce Development, Kinesiology, Health, & Athletics

Folsom Lake College | 10 College Parkway | Folsom, CA 95630

p. 916.608.6686 | f. 916.608.6761 | harrelk@flc.losrios.edu | www.flc.losrios.edu

From: Pedro, Jason
Sent: Wednesday, December 02, 2015 11:13 AM
To: Harrell, Kim <HarrelK@flc.losrios.edu>
Cc: Plews, Jeanne <PlewsJ@flc.losrios.edu>; Zwerenz, Kim <ZwerenK@flc.losrios.edu>
Subject: RE: over budget- FIXED!

Oh and also, the RXN tubes are a package deal and cannot be broken up. They must remain on the 6492 string. Thanks!



-Jason

From: Pedro, Jason
Sent: Wednesday, December 02, 2015 11:12 AM
To: Harrell, Kim
Cc: Plews, Jeanne; Zwerenz, Kim
Subject: RE: over budget- FIXED!

Hi Kim and Jeanne,

Please disregard my last email. I spoke to Kim Z and it turns out the Thermalcycler was pre-encumbered (without tax). So adding tax to the \$5624.00 pre-encumbrance = \$6045.80

-Jason

From: Pedro, Jason
Sent: Wednesday, December 02, 2015 10:47 AM
To: Harrell, Kim
Cc: Plews, Jeanne; Zwerenz, Kim
Subject: RE: over budget

Thanks Kim,

My apologies, we went forward thinking we had 9K remaining in the 6492 account (as of a 11/16 print out). We may be able to pull from the 4300, but we should check in with Kim Z. to see if she's ordered anything that hasn't posted yet. As for the 5200, we'll be cutting it real close with the conference, so I don't think we should pull from that at this time.

There is also the VTEA money in the 5890 account (GENFD 589 12 FL.VI.VTEA 12050 00000 2016 314D). I know we can't mix grants on a single item, but if there are several items on the requisition we might be able to make this work.

There is also the \$397 credit from Global Med Brokers: GENFD 4300 12 FL.VI.AR05 12050 00000 2016 700P, I would use this for the RXN Tubes if possible.

If none of these situations work, we may need to come up with another solution, or wait until after the conference posts to see if we have enough.

-Jason

From: Harrell, Kim
Sent: Tuesday, December 01, 2015 7:27 PM
To: Pedro, Jason
Cc: Plews, Jeanne
Subject: over budget

Hi Jason,

We received your online requisition for purchasing the thermocycler and RXN tubes. The total cost is \$6045.80 which is \$2648.28 more than you have in the 6492 budget string. I could seek approval to pull funds from the 5200 account or the 4300 account to cover the balance if you don't intend to use all of the funds in those accounts. Let me know what you want to do.



Also, Jeanne the RXN tubes are \$124 but lumped in with the cost of the equipment. It seems we should have a 4300 string to cover this item unless it is required for the equipment to run in which case it could be lumped in.

I will hold the requisition until I hear back.

Kim Harrell, PhD | Dean of Workforce Development, Kinesiology, Health, & Athletics
Folsom Lake College | 10 College Parkway | Folsom, CA 95630
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USER GUIDE

applied
biosystems®
by *life* technologies™

ProFlex™ PCR System User Guide

Installation, Use, and Maintenance

for use with: PCR reagents from Invitrogen™ and Applied Biosystems®

Catalog Number 4483636, 4483637, 4483638, 4484071, 4484073, 4484074, 4484075, 4484076, 4484078, 4484072, and 4484077

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About this Guide

Revision History

Revision	Date	Description
01	May 2013	New document
02	August 2013	Added information about the ProFlex™ Dual 96-Well PCR System and the ProFlex™ Dual Flat PCR System
A.0	June 2014	Added information about the ProFlex™ Dual 384-Well PCR System

Purpose

The ProFlex™ PCR System User Guide provides information about installing, using, and maintaining the ProFlex™ PCR System.



About the System

The ProFlex™ PCR System is an end-point thermal cycler, specifically designed for the amplification of nucleic acids using the Polymerase Chain Reaction (PCR) process. The user interface consists of a touchscreen with a graphical display that shows the time, status, and temperature for each run. A touchscreen keypad allows you to enter information into fields on the display screen.

About the system

There are five models of the ProFlex™ PCR System:

Description	Cat. No.
ProFlex™ 96-Well PCR System	4484075
ProFlex™ 3x32-Well PCR System	4484073
ProFlex™ Dual 96-Well PCR System	4484076
ProFlex™ Dual Flat PCR System	4484078
ProFlex™ Dual 384-Well PCR System	4484077

Five interchangeable ProFlex™ Sample Blocks are available:

Description	Cat. No.
ProFlex™ 96-Well Sample Block	4483637
ProFlex™ 3x32-Well Sample Block	4483638
ProFlex™ Dual 96-Well Sample Block	4484071
ProFlex™ Dual Flat Sample Block	4484074
ProFlex™ Dual 384-Well Sample Block	4484072

The ProFlex™ PCR System allows you to:

- Run three experiments at a time with the 3x32-well, 0.2-mL block
- Interchange the blocks (e.g. exchange the ProFlex™ 3x32-Well Sample Block with the ProFlex™ 96-Well Sample Block, the ProFlex™ Dual 96-Well Sample Block, the ProFlex™ Dual Flat Sample Block, the ProFlex™ Dual 384-Well Sample Block, and vice-versa)
- Access the system remotely through a mobile application
- Program the instrument from the touchscreen interface
- Simulate other PCR instruments with Thermal Simulation modes

- Optimize your PCR with the help of the Veriflex™ blocks



Figure 1 ProFlex™ 3x32-Well PCR System



Figure 2 ProFlex™ 96-Well PCR System


This user guide provides information on how to maximize the capabilities of your ProFlex™ PCR System. This user guide provides unique instructions for the different ProFlex™ block types at the beginning of each section.



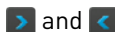




Detailed specifications for the ProFlex™ PCR System are found in Appendix C, “Instrument specifications”.

Use the Touchscreen

You interact with the instrument using a touchscreen. Table 1 describes the several buttons common to many of the screens in the ProFlex™ System.

Table 1 Buttons in the touchscreen

Button	Function
	Returns to the previous screen

Button	Function
	<ol style="list-style-type: none"> 1. Current temperature 2. Time remaining 3. Status of the block (pre-heating, running, and so on) 4. Username
	Scrolls up and down through a list of items.
	View other stages
	Closes the current modal window.
	Indicates whether the Wi-Fi is on or off.
	Indicates whether a USB is inserted into the instrument.
	Indicates whether the instrument is connected to the network.

Enter text

When you touch a field that requires the input of text, the text editor, as seen in the following figure, opens. Table 2 displays the buttons to touch to enter different information types.

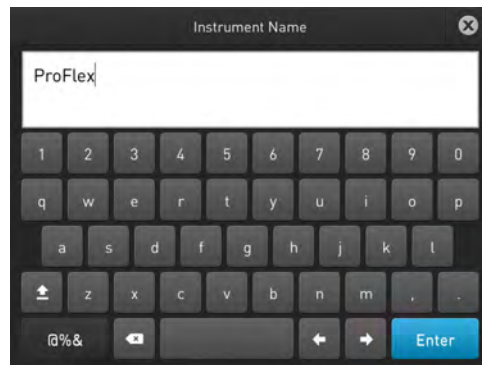









Table 2 Buttons to enter different information

To...	Touch
Enter a lowercase letter	A letter button.

To...	Touch
Enter an uppercase letter	 , then the letter (s). When you are done, touch  again.
Enter punctuation or other symbols	 , then the symbol(s). When you are done, touch  again.
Delete the last letter	
Close the editor and save any changes	 to accept the entry and close the editor.
Close the editor and discard any changes	

Enter numerals

When you touch a field that requires a numerical input, the numeric editor, as seen in the following figure, opens. Table 3 displays the buttons to touch to perform different functions while entering numbers.

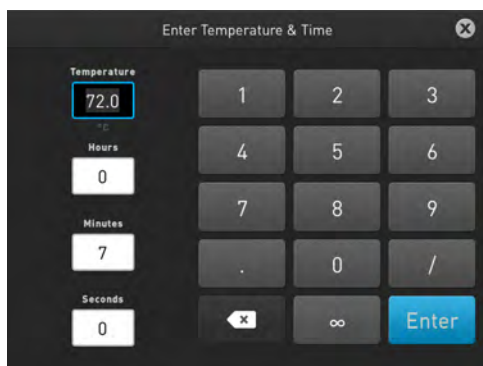




Table 3 Functions performed by entering numbers

To...	Touch
Enter a number	A number button.
Enter decimal, colon, or infinity symbol	the button with the respective symbol.
Delete the last number	
Close the editor and save any changes	

Touchscreen menu overview

On powering on the instrument, you will first see the following Splash screen.

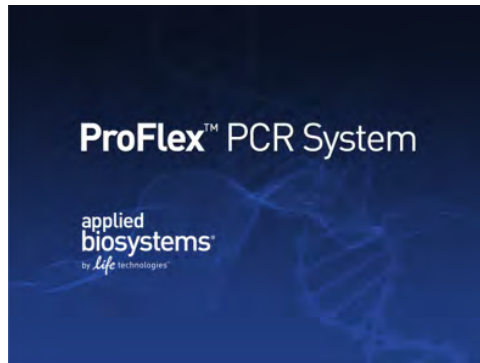


Figure 3 ProFlex™ PCR System Splash screen

After the Splash screen, the Home screen appears.

The instrument has interchangeable blocks, and detects which module is present on the system automatically. After the block completes initializing, depending on the block in use, the Home screen displays status dials; three for the ProFlex™ 3x32-Well Sample Block and one for the ProFlex™ 1x96-Well Sample Block, the ProFlex™ Dual 96-Well Sample Block, the ProFlex™ Dual Flat Sample Block, and the ProFlex™ Dual 384-Well Sample Block.

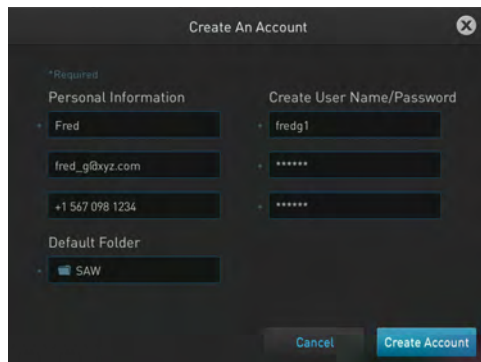


Figure 4 Home screen

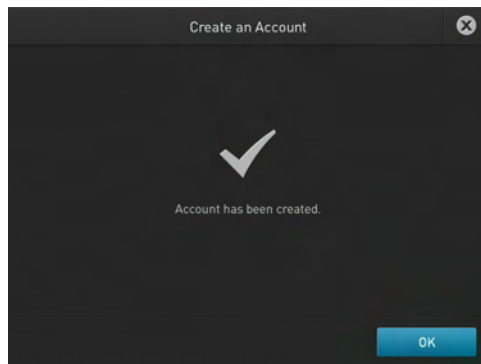
The Home screen includes the following features:

1. **Status dial:** The number of dials appearing on the Home screen varies with the block module in use. While the instrument is in use, the status dial displays the current temperature of the block, the time elapsed for a run, and the run status. When the instrument is not in use, the status dial/s will show the 'Set Up Run' display. You can start a run by touching the status dial where it says Set Up Run. For instructions on starting a run by this method, see "Perform a run" on page 43.

2. **Sign In:** Touch **Sign In** to create an account or to enter information to sign in to your account.
 - To create a new account:
 - a. In the Sign In screen, touch **Sign Up**.
 - b. In the Create An Account screen, enter your personal information, create a user name and password, and enter a name for the default folder that will contain the account information.

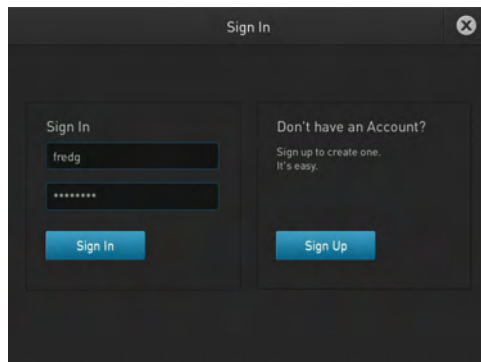


- c. Touch **Create Account**



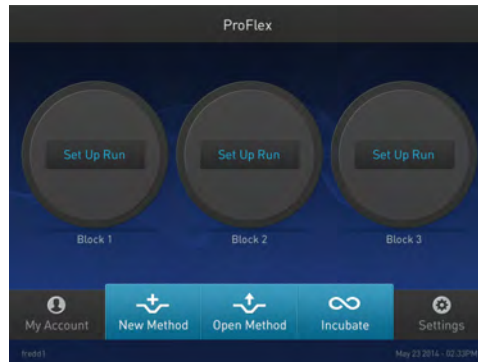
- To sign-in to an existing account:
 1. Enter your user name and password.

Note: To sign-in to an existing account as an administrator, enter your user name as "Administrator" and password as "password".



2. Touch **Sign In**.

Note: Once you have signed into your account, the Sign In button on the Home screen turns to My Account. The user name (custom or administrator) appears in the bottom-left of the Home screen.



3. **New Method:** Touch **New Method** to create a new run method with the help of the default templates that are pre-loaded with the instrument. Touching New Method takes you to the Setup Run screen that allows you to create a new run method by using the default templates or existing methods. You can also create a run method for incubation from the Setup Run screen.
4. **Open Method:** Touch **Open Method** to select an existing run method to start a run. Touching Open Method takes you to the Select Method screen that displays the existing run methods. The run methods are sorted and stored in various folders. Select a folder to display the run methods within the folder. Touch a run method under the Method name to edit that run method in the edit mode.
5. **Incubate:** Touch **Incubate** to use the instrument as a precise incubator for non-PCR workflows.
6. **Settings:** Touch **Settings** to configure the instrument.

2

Initial Set-up

This chapter includes the procedures for installing the ProFlex™ PCR System.

Site requirements

The ProFlex™ PCR System is for indoor use. Ensure that the installation site:

- Meets the spatial and weight requirements (see “System specifications” on page 64)
- Meets environmental requirements (see “Environmental requirements” on page 14)
- Is within 1 m (3 ft.) of an AC power source receptacle
- Is away from water

Environmental requirements

Temperature and humidity requirements

Ensure that the installation site is maintained under the following conditions:

Table 4 Temperature and humidity requirements

Condition	Acceptable range
Temperature	15 to 30°C (59 to 86°F)
Humidity	15 to 80% relative humidity, non-condensing

Avoid placing the instrument adjacent to heaters, cooling ducts, or in direct sunlight. Fluctuations between day and night temperatures can cause system instability. Place away from any equipment that vibrates, such as a refrigerator or centrifuge.

Pollution

The ProFlex™ PCR System has a Pollution Degree rating of 2. It may be installed in an environment that has non-conductive pollutants only, such as dust particles or wood chips. Typical environments with a Pollution Degree II rating are laboratories and sales and commercial areas.

Altitude

The safety of ProFlex™ PCR System use was tested for altitudes up to 6000 ft.

Materials

Required materials

- Scissors, pocket knife, or box cutter
- Compressed air
- Protective hardware, as appropriate (see below)

Optional protective hardware

Life Technologies supports the use of the following devices to protect the ProFlex™ PCR System from damage resulting from electrical hazards and the resultant loss of data. Before installing the system, decide what additional hardware (if any) you want to install.

- Power line regulator (1.5-kVA)
- Surge protector/line conditioner (10-kVA)
- Uninterruptible power supply (1.5-kVA)

Unpack the product

IMPORTANT! Save the packing materials and box in case you need to ship the instrument to Life Technologies for service.

1. To unpack the ProFlex™ System:
 - a. Cut the straps securing the instrument box.
 - b. Cut the tape securing the top flaps of the instrument crate, then open the flaps.
 - c. Remove the ProFlex™ System Accessories from the instrument and set them aside.
 - d. Lift and remove the cover from the instrument crate.
 - e. Remove the packing material from the ProFlex™ System, then inspect the instrument for shipping damage.

IMPORTANT! If the ProFlex™ System is damaged, note the location and appearance of the damage, then contact Life Technologies Technical Support or your service representative (see “Obtaining support” on page 91).

2. Move the ProFlex™ System to the desired installation site. Follow these guidelines for lifting and moving:
 - Make sure that you have a secure, comfortable grip.
 - Keep your spine in a neutral position.
 - Bend at the knees and lift with your legs.
 - Do not lift and twist your torso at the same time.

3. Verify that the package containing the ProFlex™ System Accessories includes the ProFlex™ System Starter Kit :
 - Power cord cable
 - ProFlex™ System Starter Kit
 - USB-enabled Wi-Fi Card (Part no. 4483658)

Set up the system

1. Remove the packing material:
 - a. Open the ProFlex™ System heated cover.
 - b. Remove the packing material from the ProFlex™ sample block(s) (ProFlex™ 96-Well Sample Block, ProFlex™ 3x32-Well Sample Block, ProFlex™ Dual 96-Well Sample Block, ProFlex™ Dual Flat Sample Block, or ProFlex™ Dual 384-Well Sample Block) .
 - c. Using a can of compressed air, deliver a blast of air into each well of the sample block(s) to remove any particles that may have collected during transportation.
2. Install the sample block. To place the sample block into the instrument base:
 - a. Facing the ProFlex™ Base unit away from you, pull the lever all the way to the right hand side.



Figure 5 ProFlex™ System Base unit and the ProFlex™ 3x32-Well Sample Block)

- b. Place the sample block onto the ProFlex™ Base with the latching mechanism to the right.



Figure 6 ProFlex™ System Base unit with the latching mechanism to the right

- c. Push the latching mechanism all the way to the left to secure the block onto the base.

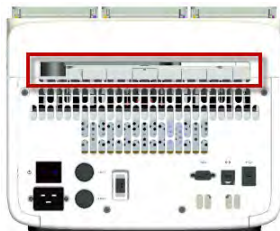


Figure 7 ProFlex™ System Base unit with the latching mechanism to the left

Note: If the sample block module is not seated in place correctly, the instrument will not be able to detect the block type.

Note: To change the sample block from one type to the other, see Change sample blocks.

3. Close the heated cover.
4. Connect the power cable to the ProFlex™ System.



Figure 8 Power cable inlet in the ProFlex™ System

5. (Optional) Install any of the recommended protective devices (see “Optional protective hardware” on page 15).
6. Connect the power cable to the AC power source receptacle.
7. Connect the instrument to the network by inserting the ethernet cable into the ethernet port at the back of the ProFlex™ System. For instructions on setting up the wired connection, see “Set up the wired connection” on page 18.

In the absence of the ethernet cable or the ethernet port, you can connect the instrument to the network via the USB-enabled Wi-Fi Card (Cat. no. 4483658) as shown in the following graphic.

Insert the Wi-Fi Card into the USB port at the back of ProFlex™ System. For instructions on setting up the wireless connection, see “Set up the wireless connection” on page 20



Figure 9 USB port in the ProFlex™ System unit

8. Toggle the power switch, then wait for the instrument to start up. The touchscreen displays the Main Menu, indicating that the ProFlex™ System startup is complete. When you power on the instrument, the instrument may require about 45 seconds to start up.

Note: First time users will be prompted with the End User License Agreement (EULA) screen. See “Recommended instrument settings” on page 21 for more information on the EULA.

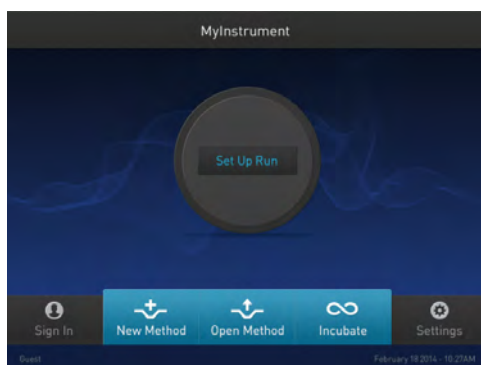


Figure 10 ProFlex™ System Touchscreen Home

Set up the wired connection

See “Set up the system” on page 16 for instructions on connecting the ProFlex™ System to the network. To set up the wired connection:

1. On the Home screen, touch **Settings**.

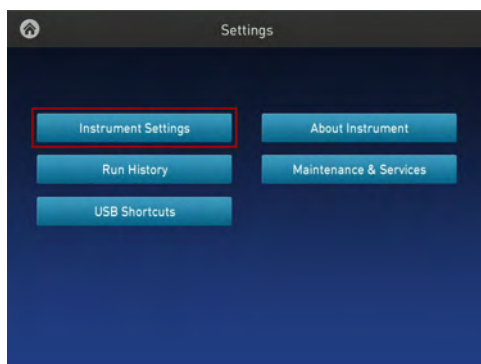


Figure 11 ProFlex™ PCR System Settings screen

2. In the Settings screen, touch **Instrument Settings**.

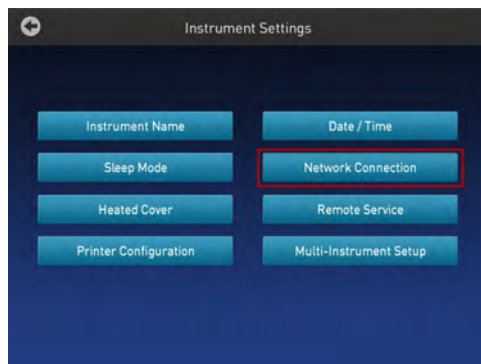


Figure 12 ProFlex™ PCR System Instrument Settings screen

3. In the Instrument Settings screen, touch **Network Connection**.

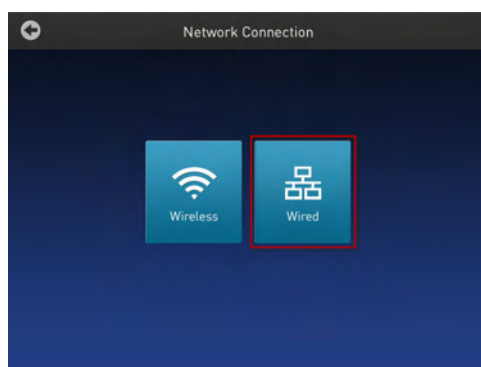


Figure 13 ProFlex™ PCR System Network Connection screen

4. In the Network Connection screen, touch **Wired**.
The Network Configuration screen opens up.

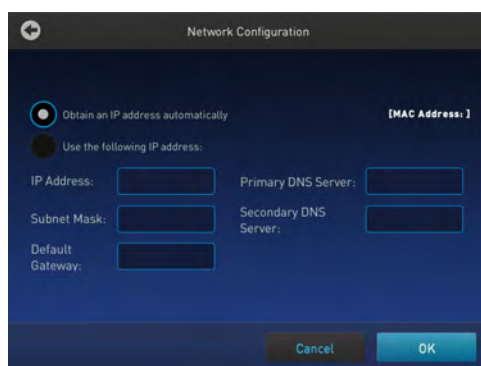


Figure 14 ProFlex™ PCR System Network Configuration screen

In the Network Configuration screen, you can choose to connect to the network by obtaining the IP address either automatically (using DHCP) or manually. If your instrument is not on a network, you do not need to set the IP address.

Note: Ask your system administrator if the IP address is assigned statically or dynamically. For static addresses, you need to know the IP address for the instrument, the subnet mask, and the default gateway.

- Automatically:
Touch **Obtain an IP address automatically** (using DHCP). A check mark appears when DHCP is selected.
or
- Manually:
Touch **Use the following IP Address**, then enter the appropriate IP addresses for the instrument, the Subnet Mask, and, optionally, the Default Gateway, the Primary DNS Server, and the Secondary DNS Server using the numeric editor. Addresses are in the form of X.X.X.X, where each X is a 3-digit number, from 001 to 255.

5. Touch **OK** to save the changes and go back to the Network Connection screen. Touch **Cancel** to exit the screen without saving the changes.

Set up the wireless connection

See “Set up the system” on page 16 on connecting the USB-enabled Wi-Fi Card into the ProFlex™ System. To set up the wireless connection:

1. Refer to “Set up the wired connection” on page 18 through step 3 to arrive at the Network Connection screen.
2. In the Network Connection Type screen, touch **Wireless**.

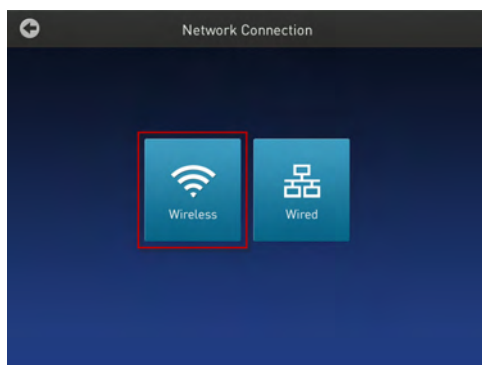


Figure 15 ProFlex™ PCR System Network Connection screen

The Choose Network screen will come up and the wireless symbol will appear active. Touch **Cancel** to exit the screen.

Note: During initial setup, if you selected the Wired option in the Network Connection Type screen, you will be required to enter your IP address if you selected the Static IP wired option. If you selected the Dynamic IP wired option, the IP address is automatically populated.

3. Once a wireless connection has been detected, a list of the available networks will be displayed in the Choose Network screen. Touch the network name of your choice or touch **Join Other Network**.
If you choose Join Other Network, the Configure and Join Network screen opens.

- In the Configure and Join Network screen, enter the name and security type of the network.

Note: When you touch in the Network Name field, a keypad will come up to facilitate making the entry.

- From the Security type drop-down menu, touch to select the security type and enter the relevant information in the screen.

Note: Contact your IT Systems Administrator for information on security type.

You can select from the following options:

- Open
- WEP
- WPA Personal
- WPA2 Personal
- WPA Enterprise
- WPA2 Enterprise

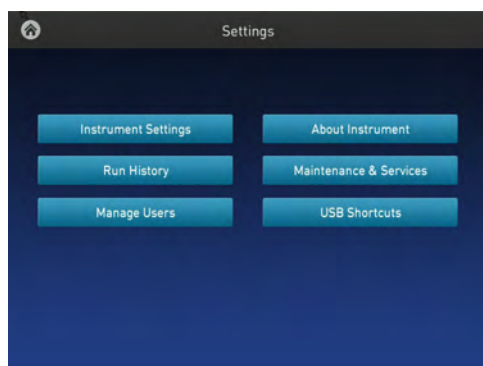
Note: The above options are available only if you selected Join Other Network in step 3. You cannot change the security type if you selected an existing network.

- Touch **Join** to continue or **Cancel** to exit from the Find and Join a Network screen.

- Depending on the security type you have selected, enter the appropriate passwords and touch **Join**.
If you entered the correct information, the Network Connection Complete screen will appear. Touch **OK** to continue. If you entered incorrect information, the Network Connection Failed screen will come up and you will require to go back to security type screen to resolve the issue. Touch **OK** to continue.

Recommended instrument settings

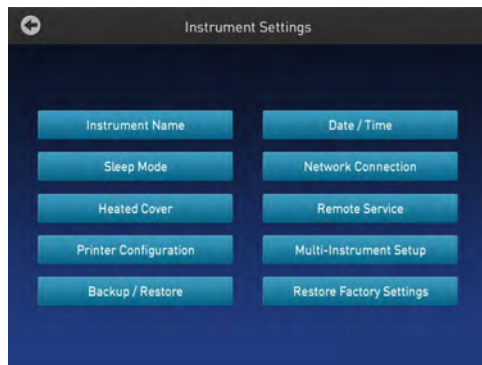
You can configure the following instrument settings by touching Settings on the Home screen:



Note: The Manage Users button is visible only when you sign in as an administrator.

- **Instrument Settings:** Touch **Instrument Settings** to set various additional parameters:

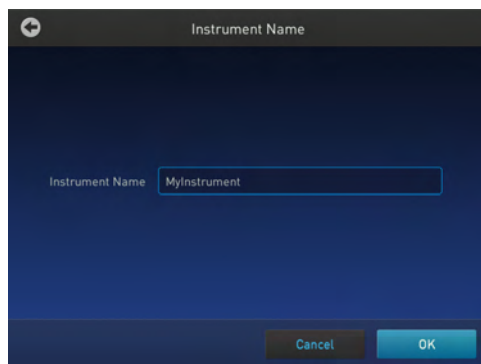
Set the following in the Instrument Settings screen:



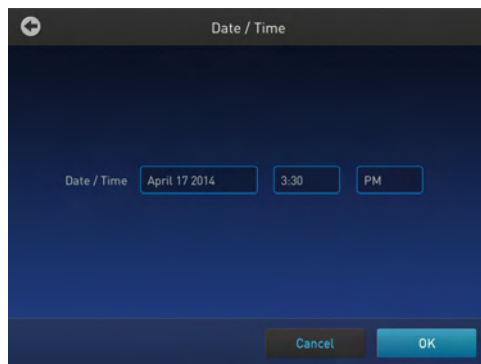
Note: The Backup/Restore and Restore Factory Settings are available only when you sign in as an administrator.

- **Instrument Name:** Touch the Instrument Name field and, using the text editor, enter up to 25 alphanumeric characters to identify the instrument.

Note: The instrument name cannot have spaces. Separate consecutive characters with a hyphen or underscore; for example, *MyInstrument*.

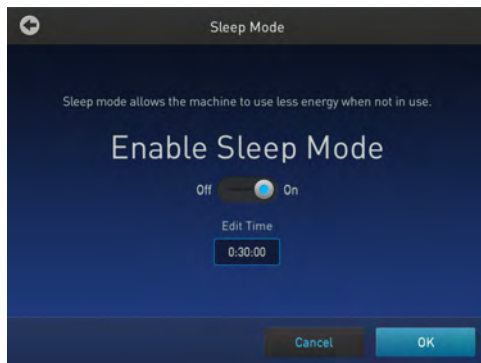


- **Date/ Time:** Touch **Date/ Time** to set the date and time for a run.
 1. Enter the date and time in the Date/Time field using the numerical editor that comes up when you place the cursor in the respective fields. You can toggle between AM and PM by touching in the field directly.
 2. Touch **OK** to save the date and time changes or **Cancel** to exit.

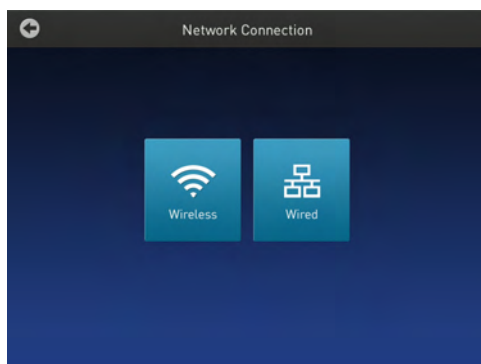


- **Sleep Mode:** In the Sleep Mode screen, touch the Off and On toggle button to disable or enable, respectively, the sleep mode.

In the 'On' mode, you can edit the time (in minutes) after which the instrument will go from the idling state into standby mode.



- **Network Connection:** Touch **Network Connection** to select the type of network connection. You can select from the Wireless and Ethernet options. For details on using the Wireless and Ethernet options, see “Set up the wired connection” on page 18 and “Set up the wireless connection” on page 20, respectively.



- **Heated Cover:**
 1. In the Heated Cover screen, touch the On and Off toggle button to enable or disable, respectively, the heated cover idling temperature.
 2. Edit the idling temperature if the button is in the 'On' mode.
 - Note:** The temperature for the heated cover must be between 30°C and 110°C.
 3. Click **OK** to save the changes or **Cancel** to exit the screen.

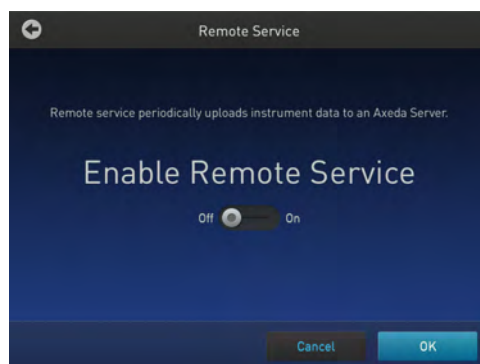


- **Remote Service:** In the Remote Service screen, use the On and Off toggle button to enable or disable, respectively, remote service. The feature allows the instrument to upload data, periodically, to a remote server. For more information on remote services, visit <http://www.lifetechnologies.com/proflex>.

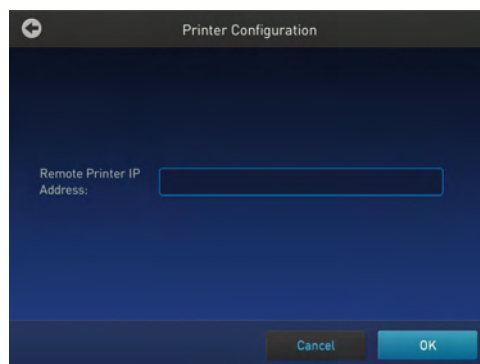
Note: To connect to the ProFlex™ PCR System with your mobile device, Remote Services must be switched on.

Note: Ensure that you are connected to a network if you want to enable the Remote Service feature.

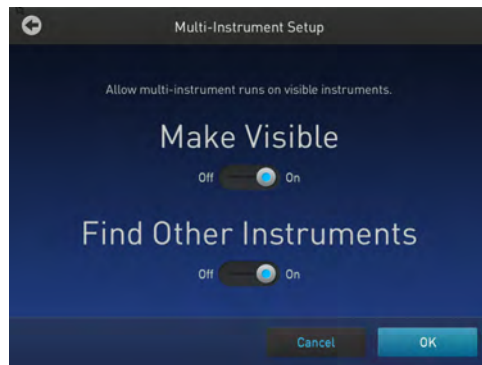
After you have set the toggle button, touch **OK** to save the change or **Cancel** to exit the screen.



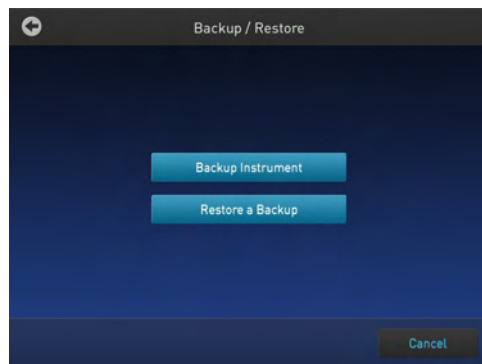
- **Printer Configuration:** In the Printer Configuration screen, enter the IP address of the printer in the Remote Printer IP Address. After you have entered the IP address, touch **OK** to save the change or **Cancel** to exit the screen.



- **Multi-Instrument Setup:** Use this feature to allow multi-instrument runs on visible instruments. In the Multi-Instrument Setup screen, touch:
 1. The Off and On toggle button to make the instrument on which you are running an experiment invisible or visible, respectively, to other instruments on the network.
 2. The second set of Off and On toggle buttons to ignore or find, respectively, other instruments on the network.



- **Backup/Restore (for Admin only):** In the Backup/ Restore screen, touch:
 - **Backup Instrument** to back up the instrument settings, user accounts, and methods on the instrument you are working to a USB drive.
 - **Restore a Backup** to view the files that you have backed up on a USB drive.

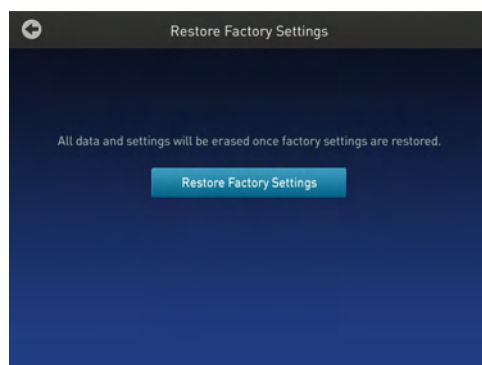


This feature can be useful in event of a hardware failure or while setting up multiple instrument runs.

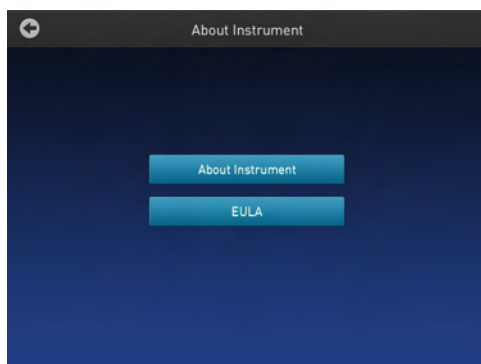
- **Restore Factory Settings (for Admin only):** Touch **Restore Factory Settings** to remove all the data and customized settings and revert to factory settings. Touch **Yes** to confirm if you want to restore factory settings or **Cancel** to exit the screen.

At the end of the restoration process, the message, "Your instrument has been restored." will be displayed and the instrument will automatically reboot after 30 seconds.

Note: All data and settings will be erased once factory settings are restored.



- **About Instrument:** Touching About Instrument will take you to the About Instrument screen where you can find out more information about the instrument as well as view the End User License Agreement (EULA).
 - Touch **About Instrument** to find out more about the ProFlex™ PCR System. In the About Instrument screen, you can view information like firmware version and instrument statistics.
 - Touch **EULA** to view the End User License Agreement. You can also save the EULA document to a USB drive.



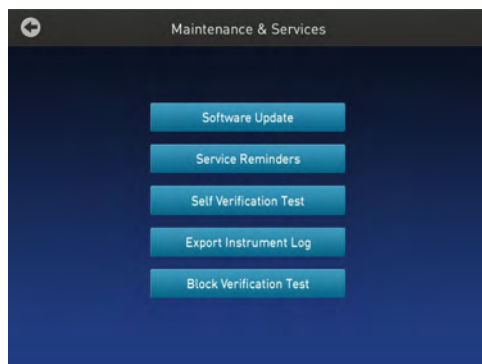
- **Run History:** The Run History screen displays the entire list of runs performed using a particular ProFlex™ PCR System.
 - In the Run History screen, touch a particular Run ID to view the details of that run.
 - Touch **Export** to save the run details to a USB device or **Print** to print the run details.



Note: If you sign in as an Administrator, you can manage the Run History. For example, deleting a run history.

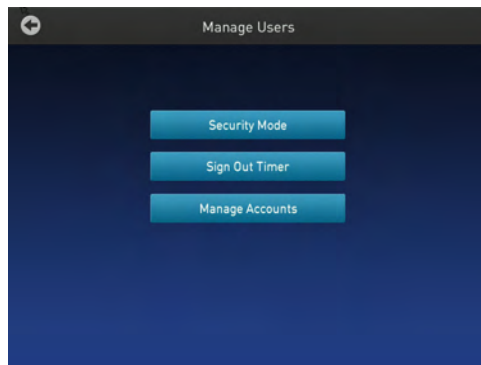


- **Maintenance & Services:** You can perform the following in the Maintenance & Services screen:
 - **Software Update:** Touch **Software Updates** to update the System firmware. See “Upgrade the system firmware” on page 51 for instructions on updating the firmware.
 - **Service Reminders:** Touch **Service Reminders** to set the time interval for the service reminder. Use the Off and On toggle button to turn off and on, respectively, the service reminder. If you select On, the time interval field becomes visible. Touch the time interval field to choose from 12 Months, 9 Months, 6 Months, 3 months, and 1 Month. Touch **OK** to save the change or **Cancel** to exit the screen.
 - **Self Verification Test:** Touch **Self Verification Test** for the instrument to conduct a check on the instrument hardware. The check includes testing the block, heated cover, and other components. See Chapter 4, “Routine Maintenance” for instructions on conducting the self-verification test.
 - **Export Instrument Log:** Touch **Export Instrument Log** to export the instrument logs to a USB. Insert the USB into the USB drive before using this feature.
 - **Block Verification Test:** Touch **Block Verification Test** to perform a block verification test. Ensure that you have the Temperature Verification Kit (TVK) (Cat. no. 4377669) (need corresponding TVK for ProFlex) before performing this test. The TVK kit is available at www.lifetechnologies.com/temperatureverificationkits. Touch:
 - **Verify Block Temperature** to carry out the block temperature test.
 1. Choose the test type from:
 - Heated Cover
 - Temperature Verification
 - Temperature Non-Uniformity
 2. Touch **Next**.
Connect the TVK and depending on the test type perform insert the TVK probe into a specific zone.
 3. Touch **Start Test**.
 - **Verify Cycle Performance** to check the cycle performance of the instrument.



- **Manage Users** (for Admin only): Touch **Manage Users** to manage the instrument when it is being used by multiple users. Touch:
 - **Security Mode** to choose the security mode of the instrument. You can choose from Open Mode, Restricted Mode 1, and Restricted Mode 2.
 - **Open Mode**: In this mode, you can use an instrument without having an account.
 - **Restricted Mode 1**: In this mode, you can use an instrument only if you have a valid account. You can create a new account. See “Touchscreen menu overview” on page 11 for more information on creating a user account.
 - **Restricted Mode 2**: This mode is designed for the lab that wants to provide limited flexibility on what can be run on the instrument. In this mode, a user cannot edit, create, or delete methods. You must log in, and once logged in, you can only run methods that are designated by an administrator.

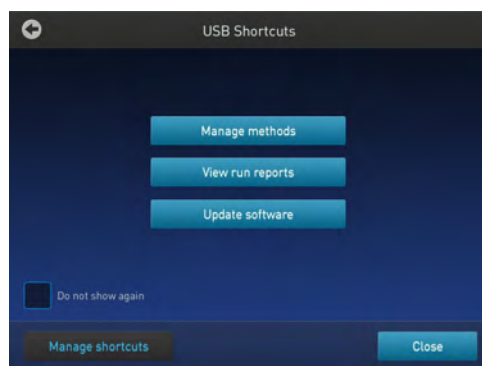
As an administrator, you must create an account for each of your users, and you must designate which methods you want these users to be able to run. To select methods that you would like to allow your users to run, log in as the administrator and save the desired methods into a folder called 'restricted'. After logging off as administrator, only the users you have created will be allowed to use the machine, and they will only be able to run (not edit/delete/move) the methods that have been added to the "restricted" folder. See “Touchscreen menu overview” on page 11 for more information on signing into an account as an administrator.
 - **Sign Out Timer** to change the duration of inactivity before a user has signed out. You can change the time in the Edit Time field.
 - **Manage Accounts** to edit the administrator account information.
 1. Touch a row with the account name and in the Manage Account screen edit the account information.
 2. Touch **Delete Account** to delete an administrator account and **Reset Password** to reset a password.



- **USB Shortcuts:** Touch **USB Shortcuts** to display the shortcuts available when a USB is inserted into an instrument.
 1. Touch **Show Shortcuts** to display the shortcuts. Select from View methods, Export run reports, Backup / Restore (only if signed in as an administrator), and Update software.
 2. Touch **Save** to save the change or **Cancel** to exit the screen.



When a USB device is plugged into the USB port, a pop-up dialog box with pre-selected options is displayed.



Touch **Do not show again** to prevent the pop-up from appearing when the USB device is inserted in the future or **Close** to dismiss the pop-up screen.

Change sample blocks

IMPORTANT! Ensure that you don't change the block while the ProFlex™ Instrument is powered on. This can cause extreme damage to the hardware itself.

The ProFlex™ System features an interchangeable sample block module allowing portability and versatility in sample configuration.

The ProFlex™ System supports the following sample blocks:

- ProFlex™ 96-Well Sample Block
- ProFlex™ 3x32-Well Sample Block
- ProFlex™ Dual 96-Well Sample Block
- ProFlex™ Dual Flat Sample Block
- ProFlex™ Dual 384-Well Sample Block

To change the sample block:

1. Power down the instrument using the main power switch on the back of the instrument.
2. Pull the lever out from the sample block module and move it towards the right to loosen the block from the base.
3. Remove the current sample block from the base.
4. Place the sample of block of your choice onto the base.
5. Pull the lever towards the left and into the instrument to secure the module.

3

Operating the ProFlex™ PCR System

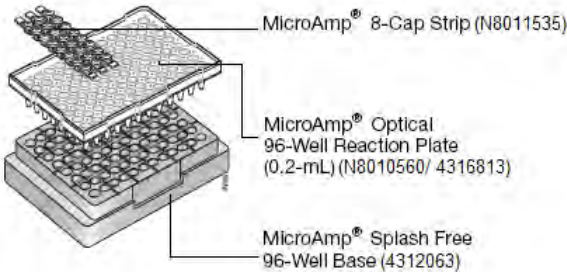
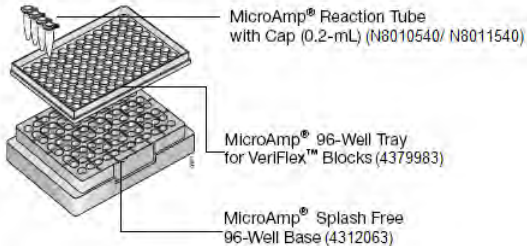
Load samples into the instrument

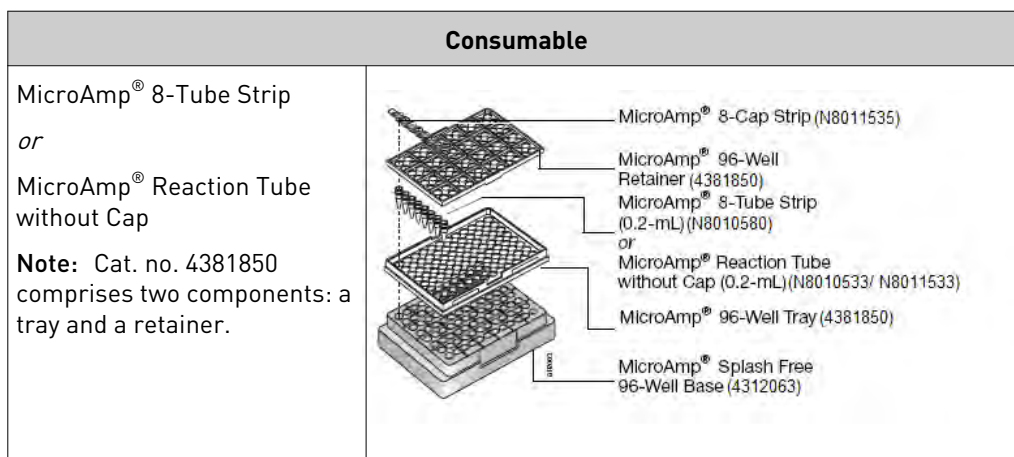
Load samples

This section describes how to load samples in:

- Tubes with attached caps
- 96-well reaction plates
- 96-well tray/retainer assemblies

Note: Trays and retainers are required for use with the ProFlex™ 96-Well Sample Block when either strip tubes or single tubes are used. Without the proper tray/retainer support, it is possible that some compression or deformation of the tubes will occur. For more information on the consumables used, visit www.lifetechnologies.com/us/en/home/life-science/pcr/pcr-plastics.html

Consumable	
MicroAmp® Optical 96-Well Reaction Plate (0.2mL)	 <p>MicroAmp® 8-Cap Strip (N8011535)</p> <p>MicroAmp® Optical 96-Well Reaction Plate (0.2-mL) (N8010560/ 4316813)</p> <p>MicroAmp® Splash Free 96-Well Base (4312063)</p>
MicroAmp® Reaction Tube with Cap	 <p>MicroAmp® Reaction Tube with Cap (0.2-mL) (N8010540/ N8011540)</p> <p>MicroAmp® 96-Well Tray for VeriFlex™ Blocks (4379983)</p> <p>MicroAmp® Splash Free 96-Well Base (4312063)</p>



Load tubes with attached caps

There is no need to use mineral oil or glycerine in the sample wells or as a vapor barrier over the PCR reaction mixture in the tubes. The MicroAmp® Reaction Tubes fit tightly in the wells, and the heated cover exerts an even pressure on all tubes, eliminating condensation on the tubes.

1. Set the 96-well tray on a splash-free 96-well base.
2. Place the reaction tubes in the tray.
3. Pipette the samples into the reaction tubes.
4. Cap the tubes.
5. See “Place the sample tray or plate onto the sample block(s)” on page 33.

Load the reaction plate

1. Place the reaction plate on a splash-free 96-well base.
2. Pipette the samples into the sample wells.
3. Cap the plates using the MicroAmp® 8-Cap Strips, or cover the plates with MicroAmp® Clear Adhesive Film.
4. See “Place the sample tray or plate onto the sample block(s)” on page 33.

Load tubes without caps

To load the 96-well tray/retainer:

1. Place the tray on the splash-free 96-well base.
2. Load tubes onto the tray using either single tubes or the 8-tube strips.
3. Place the retainer over the tubes.
4. Pipette the sample into the tubes.

5. Cap the tubes using a MicroAmp® 8-Cap Strip.
6. See “Place the sample tray or plate onto the sample block(s)” on page 33.

Place the sample tray or plate onto the sample block(s)

The steps for placing the sample tray in the sample block(s) are the same for:

- A sample tray/retainer
 - A sample tray without a retainer
 - A 96-well plate.
1. Lift the sample tray from the splash-free 96-well base and place it in the sample block(s).
 2. Place the MicroAmp® Tray or Plate onto the sample block(s) so that well A1 is at the upper left corner of the tray, as shown in the following figure:

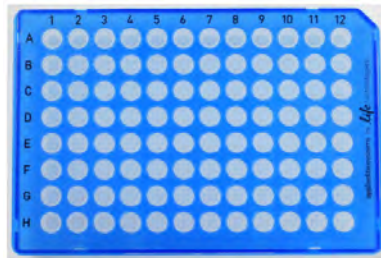


Figure 16 MicroAmp® Optical 96-Well Reaction Plate (0.2 mL)

3. Close the heated cover.

Load samples in the ProFlex™ 3x32-Well PCR System

This section describes how to load samples into the MicroAmp® reaction tubes or the MicroAmp® tube strips into a ProFlex™ 3X32-Well Sample Block.

1. Pipette the samples into the MicroAmp® reaction tubes or the MicroAmp® tube strips.
2. If you are using the MicroAmp® tube strips, secure the tube strip with the MicroAmp® cap strip. You can use the MicroAmp® Cap Installing Tool (Handle) to fix and remove the cap or cap strip.
3. Place the MicroAmp® 3x32-Well Retainer for VeriFlex™ Systems onto the sample block.

IMPORTANT! The retainer is essential and Life Technologies recommends its usage at all times along with the ProFlex™ 3x32-Well PCR System.



Figure 17 MicroAmp® 3x32-Well Retainer (Part number 4481669)

4. Place the MicroAmp® reaction tubes or the MicroAmp® tube strips within the retainer that's been placed on the sample block.
5. Close the heated cover.

Create a new run method

1. In the Home screen, touch **New Method**.

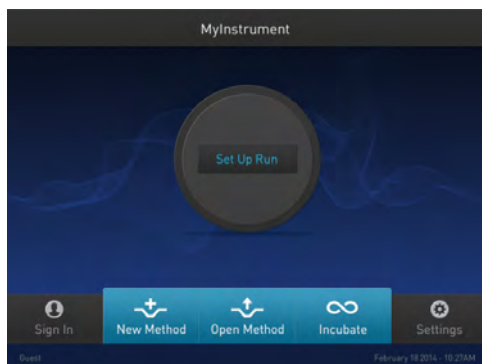


Figure 18 Touchscreen Home

The Setup Run screen opens up.

2. In the Setup Run screen, touch **Open Template**, **Open Method**, or **Incubate**.

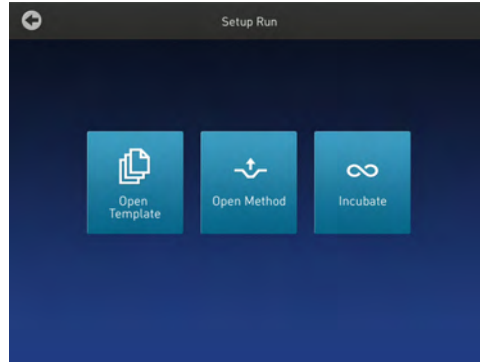


Figure 19 Setup Run screen

- a. Touch **Open Template** to create a new method using an existing template. Select from the categories listed in the Select Method Template screen.



Figure 20 Select Method Template screen

- b. Touch **Open Method** to create a new method using an existing run method. Select from the methods listed in the Select Method screen.

Note: The Select Method screen opens up if you touch Open Method in the Home screen or in the Setup Run screen.



Figure 21 Select Method screen

3. Irrespective of the source for creating a new run method, once you select one of the methods, you will come to the Method Edit screen.



Figure 22 Preview of Run Method

See “ Edit a run method” on page 36 for instructions on editing a run method.

Note: You can choose to directly start a run without editing a run method. To start a run, touch **Choose Block** (for the ProFlex™ 3x32-Well PCR System) or **Verify Block** (for the remaining block types).

Edit a run method

The Edit Method screen serves as a preview of the run method you have selected.

If you do not want to edit any of the parameters, you can start a run directly by touching **Choose Block** (for the ProFlex™ 3x32-Well PCR System) or **Verify Block** (for the remaining block types).

1. In the Edit Method screen for the run method that you have selected, touch **Edit** or anywhere on the graphical temperature profile to start editing the parameters.



Figure 23 Options available in the Run Method preview screen

You will see that each of the numbers are surrounded by black fields indicating that they are editable. At this point, you can edit any of the temperatures, times, heated cover, number of cycles, and other parameters seen on the screen.

2. Touch **Manage Steps** to manage the steps; for example, add or delete a stage or step, or set more advanced parameters.
 - a. Touch **Add Steps** to add a step.

- b. Touch **Remove Steps** to delete a step.
- c. Touch **Add Stages** to add a stage.
- d. Touch **Remove Stages** to delete a stage.

The '+' buttons appear while adding a step or stage, while the '-' buttons appear while deleting a step or stage.

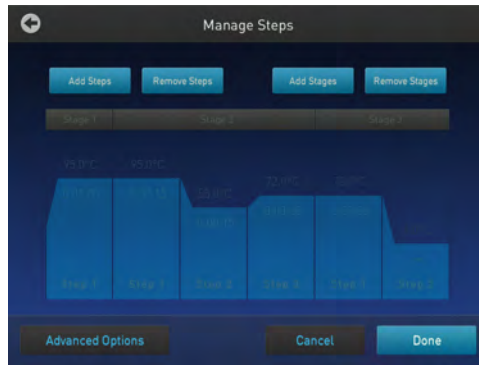


Figure 24 Manage Steps screen

Touch **Done** to finish managing the steps or **Advanced Options** to modify the advanced parameters.

3. Touch **Advanced Options** to edit the VeriFlex™ blocks, AutoDelta, Ramp Rates, and Simulation Mode parameters.

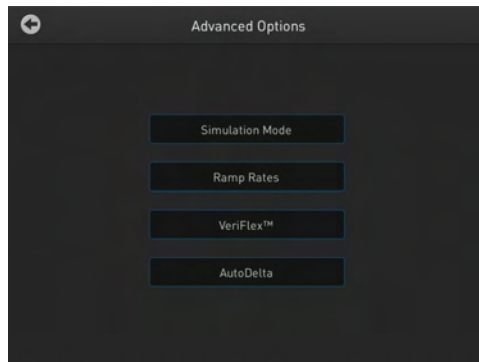


Figure 25 Advanced Options screen

- Touch **Simulation Mode** to set the simulation mode. The simulation modes include the following:
 - No Simulation
 - GeneAmp® PCR System 9600
 - GeneAmp® PCR System 9700
 - Veriti® 96-Well 0.2mL
 - Bio-Rad® C1000 Touch™
 - Bio-Rad® MyCycler™
 - Eppendorf® Mastercycler® gradient

- MJ Research® PTC-200

Note: Simulation modes make ProFlex™ System perform like another instrument. This is done by simulating the ramp rate of another instrument.



Figure 26 Advanced Options — Simulation Mode

In the Simulation Mode screen:

- Select the instrument you would like to simulate.
 Touch **No Simulation** to run the instrument in the default mode
 - Touch **Done** to save the selection or **Cancel** to exit the screen.
 - Use the button in the top right corner of the screen to return to the Advanced Options screen.
- Touch **Ramp Rates** to edit the ramp rate of the individual steps.




Figure 27 Advanced Options — Ramp Rates

- Touch a particular ramp rate to open the editor to edit the ramp rate.
- Touch **Done** to save the selection or **Cancel** to exit the screen.
- Use the button in the top right corner of the screen to return to the Advanced Options screen.

Note: If you set a simulation mode other than No Simulation, then the ramp rate will be locked and unavailable for editing.

Note: Editable ramp rates are shown in the sample ramp rate. This sample rate is a more accurate depiction of the block's thermal performance, however it is slower than the maximum block ramp rates shown in the specifications section of this user guide.

- Touch **VeriFlex™** to edit the VeriFlex™ blocks parameter.
 - a. Touch the  icon to choose the steps you want to apply VeriFlex™.

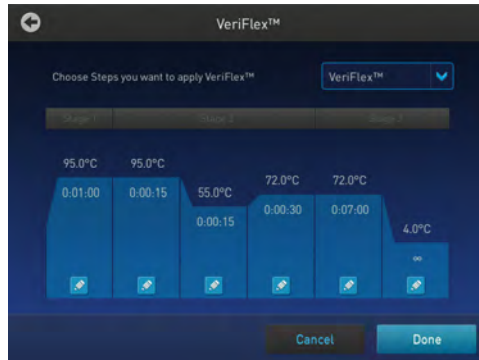


Figure 28 Advanced Options — VeriFlex™

- b. In the Edit VeriFlex™ screen, adjust the temperature range across the block for the selected steps.

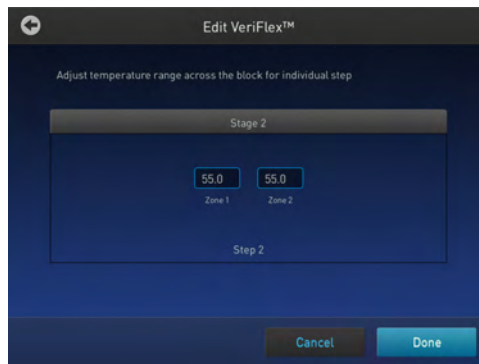



Figure 29 Edit VeriFlex™

- Touch **Remove VeriFlex™** to remove the VeriFlex™ blocks setting.

Note: **Remove VeriFlex™** is visible only if there is an existing VeriFlex™ blocks setting.
 - Touch **Done** when finished or **Cancel** to exit the screen.
 - c. Touch **Done** to return to the Edit Method screen.
 - d. Use the button in the top right corner of the screen to return to the Advanced Options screen.
- Touch **AutoDelta** to apply the AutoDelta setting to a step.
 - a. Touch the  icon to choose the steps you want to apply AutoDelta.

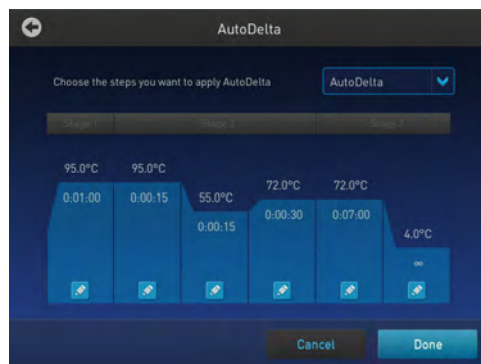


Figure 30 Advanced Options — AutoDelta

- b. In the Edit AutoDelta screen, enter the information for setting up AutoDelta.
 - a. Enter the Starting Cycle.
 - b. Enter the DELTA temperature and/or time. Use the '-' and '+' toggle button to set the DELTA values to be either negative or positive, respectively.
 - c. Touch **Remove AutoDelta** to remove the AutoDelta setting.

Note: **Remove AutoDelta** is visible only if there is an existing AutoDelta setting.

 - d. Touch **Done** when finished or **Cancel** to exit the screen.

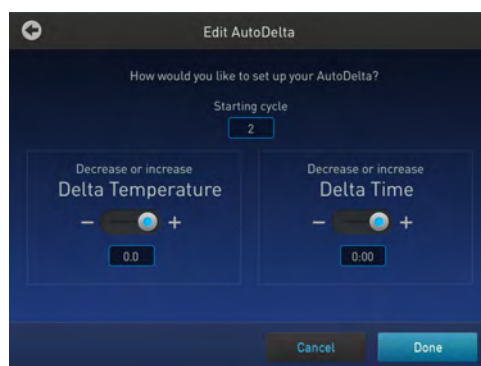


Figure 31 Edit AutoDelta

- c. Touch **Done** to return to the Edit Method screen.

Once you have edited a run method, you can save the method to the destination folder by touching **Save As** in the Run Method preview screen or choose to start a run without saving the run method.

4. Touch **Save** to save the edited run method.

Note: Touch **Save As** to save an edited template as a new method. The Save button appears as Save As when you create a new method from an edited template.



Figure 32 ProFlex™ System Run Method preview screen

- a. In the Save screen, enter a name of the edited run method.

Note: Names can be up to 100 characters. Names may not contain any of the following characters: %*?!;,:!@#\$.()<>\/\ "" ~{} [] =+&^ (tab). Spaces, underscores, and dashes are allowed.

- b. Touch a folder (for example, ) to select a destination folder where you want to save the run method.

Note: The Save As button turns to Save in the Edit Method screen once you have saved the template as a new method.

5. Touch **Save** when you are done.

Manage methods and folders

Use this feature to copy a run method from one folder to another, rename a particular method name, or delete a method.

1. In the ProFlex™ System Home screen, touch **Open Method**.
Touching Open Method takes you to the Select Method Screen.

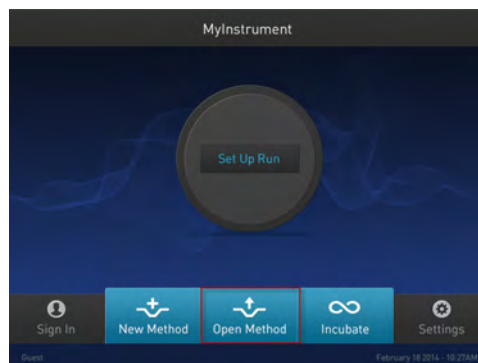


Figure 33 Home screen

2. In the Select Method screen, touch:
 - **New Folders** to create a new folder, or
 - **Manage Folders** edit an existing method

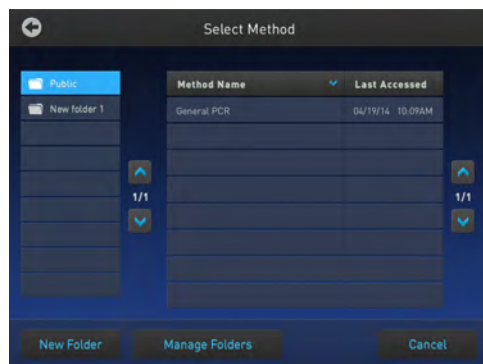
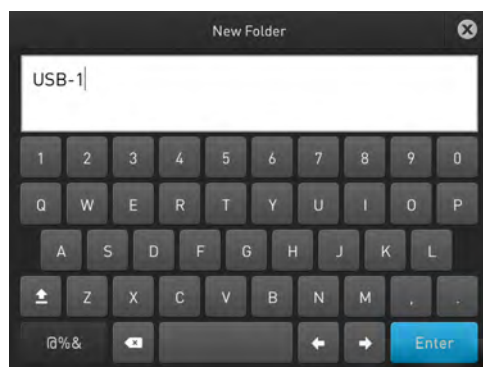
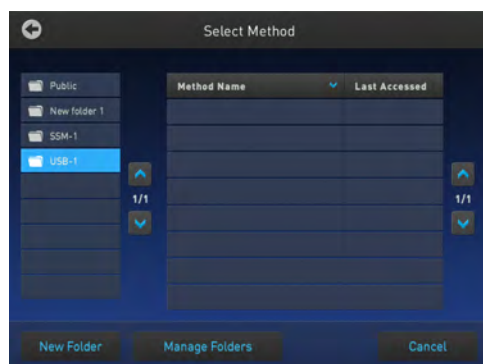


Figure 34 Select Method screen

3. Touch **New Folder**, and in the New Folder dialog box, enter a name for the new folder you want to create.



Touch **Enter**.



4. In the Manage Folders screen,
 1. Touch **Copy** to copy a run method from one existing folder to another. For example, you can copy a run method from the Public folder into the New folder 1. You can also copy a run method from an existing folder into a new folder.

Note: Back up your method files to a USB drive frequently, or before sending in your ProFlex™ System for service.



2. In the Copy Method screen, select the folder you would like to copy the method to, or touch **New Folder**. Touch **Paste Method**.



3. Touch **Rename** to rename a particular method/ folder name.
4. Touch **Delete** to delete a particular method/ folder.
5. Touch **Done** to save the changes and return to the Select Method screen.

Perform a run

Prepare your samples and load the sample block(s) as described in “ Load samples into the instrument” on page 31.

1. Close the cover.
2. Start a run from the Home screen in one of the following ways. Touch:
 - **New Method**
 - **Open Method**
 - **Incubate**
 - **Status dial/s**

Note: See “Create a new run method” on page 34 to create a new run method or see “ Edit a run method” on page 36 to edit an existing run method.

3. Touch **Verify Block**.

Note: For the ProFlex™ Dual 384-Well PCR System, touch **Choose Block**.

The Run Parameters screen is displayed:



Figure 35 Run Parameters screen

Verify the name of the run method that you have selected, and in case of the ProFlex™ 3x32 Well PCR System touch the dial corresponding to the block that you are using to perform the run.

Reaction volumes are specific to the type of instrument:

- ProFlex™ 1x96 Well PCR System: 10 to 80 µL
- ProFlex™ 3x32 Well PCR System: 10 to 80 µL
- ProFlex™ Dual 96-Well PCR System: 10 to 100 µL
- ProFlex™ Dual Flat PCR System: maximum 30 nL
- ProFlex™ Dual 384-Well PCR System: 5 to 20 µL

4. Touch **Run ID**, then enter the applicable information in the Enter the Run ID screen.
The default Run ID is YYYYMMDDHHMM, where “YYYYMMDD” is the date and “HHMM” is the current time.
You can choose to retain the default Run ID.
5. Touch **Add Comments** to enter any comments about the run.
6. Touch **Start Run**. The cover is heated to the required temperature, then the run begins.
While the run is in progress, the Home screen is displayed. When the run is complete, the Status Dial/s on the Home screen displays Done and Remove Samples.
7. Touch **Done** once you have removed the samples.
The Status Dial is now ready for another run and displays Set Up Run.

Perform a run on multiple instruments

Connect the instruments

There are two ways in which you can set up the instruments to perform the multi-instrument function:

- To make instruments available on the same network, connect each instrument to the Ethernet point via a LAN cable.
- To form your own subnet, connect all the instruments to one network switch.

Perform a run on multiple instruments

Use the Multi-Instrument Setup feature to perform runs on multiple instruments.

1. In the Multi-Instrument Setup screen, touch the Off and On toggle button to make the instrument on which you are running an experiment visible to other instruments on the network.
2. Touch the second set of Off and On toggle buttons to find other instruments on the network.
3. Select an existing or new method and proceed to the Start Run screen.
4. In the Start Run screen, touch **Scan Devices** instead of the Start Run button.

Note: The Scan Devices button appears in the Start Run screen when you enable the multi-instrument run.



The instrument starts scanning for all available ProFlex™ PCR System instruments on the same network which have the "Make Visible" setting enabled. All available instruments are displayed in a table in the Multi-Instrument Run screen.



- Select one or more instruments from the table to enable the Start Run button.



- Touch **Start Run**.
Once a run starts and completes successfully on a remote instrument, a pop-up message saying that the workflow has ended appears.
Note: You cannot monitor a run taking place remotely.

Monitor a run

Monitor via the Home screen

After a run has started, the Home screen appears again with the dials updated with current information on the run. The dials display the following run information:

- Current block temperature
- Time remaining since the run started
- Run status

To monitor the run progress, touch the dial that is running to go the Run Monitoring screen.



Figure 36 ProFlex™ System Home screen

Monitor via the run monitor screen






You can follow the status of a run using the Run Monitoring screen as shown in the following figure:




Figure 37 ProFlex™ System Run Monitoring screen

The screen shows the run method profile and additional information that does not appear in the Dial on the Home screen.

Table 5 Elements of the Run Monitor screen

Element	Description
Start Time	Displays the time a run started.
Time Remaining	Displays the time remaining for a run.
~ End Time	Displays the approximate time at which the run will end.
	Provides more details about the run. Touching Details brings up the Progress Details screen with the following run information: <ul style="list-style-type: none"> • Run ID • Simulation Mode • Start time • Estimated End time • Sample Temperature • Heated Cover • Reaction Volume
	<ul style="list-style-type: none"> • Helps edit run parameters like temperature, time, and cycles. • Helps skip the current holding step. However, if the run is currently ramping, the Skip button will not function.
	Helps pause a run. Touching Pause changes the button to  . Touch  to continue the run.

Element	Description
	Helps stop a run. After a run has completed or been aborted, the Home screen appears again.

If the power fails

If a power failure occurs during a run, the instrument attempts to continue the run when the power returns. The run begins at the first step of the stage where the power failed.

Note: If the time between the initial power failure and the time the power returns is more than 12 hours, the run is not continued.

View and export the run report

To view a report:

1. In the Home screen, touch **Settings**.
2. In the Settings screen, touch **Run History**.
3. In the Run History screen, touch the Run ID of the run you want to view. The report is displayed.
4. Touch **Export** to save the report on a USB drive. Touch **Print**.

Remove the samples from the instrument

Grasp the sample tray/retainer assembly or reaction plate firmly with both hands (or by using MicroAmp® Multi Removal Tool, Cat. no. 4313950) and gently rock it back and forth until the tubes (or plate) are free.



CAUTION! Sample caps may pop off if the cover is opened when the sample block(s) temperature is above 27 °C.



Routine Maintenance

As-needed maintenance

Clean the instrument

Preparation

Before cleaning the instrument:


1. Power off the instrument by disconnecting the power.
2. Allow the instrument to cool until the heated cover and sample block(s) reach room temperature.


Clean the touchscreen

Clean the touchscreen with any commercially available LCD cleaning product. Be careful not to scratch the screen.

Clean the sample wells

If you use any cleaning or decontamination method, except those recommended in the manual, you risk damaging the equipment. Clean the sample wells once a month or as needed.

 **WARNING!** Always wear protective glasses and gloves when servicing the instrument. Also, make sure you disconnect the instrument from AC line power before you begin any service procedure. Always wear protective glasses and gloves when servicing the instrument. Also, make sure you disconnect the instrument from AC line power before you begin any service procedure.

 **CAUTION!** During instrument operation, the temperature of the heated cover can be as high as 110°C, and the temperature of the sample block(s) can be as high as 100°C. Before performing the procedure, keep hands away until the heated cover and sample block(s) reach room temperature.

To clean the sample wells:

1. Follow the steps in “Preparation” on page 49.
2. Open the heated cover.
3. Remove the sample tray from the sample block(s) and set it aside.
4. Use a cotton swab soaked in isopropanol to clean the sample wells thoroughly. Make certain that the isopropanol has evaporated completely before reloading a sample tray.

Decontaminate the sample wells

If the sample wells become contaminated with any biological agents, clean the wells thoroughly with a cotton swab soaked in 1:10 v/v dilution of 5.25% sodium hypochlorite (Clorox® bleach).

IMPORTANT! Use bleach solution in moderation. Life Technologies recommends the use of 10% bleach solution for removing contamination from the ProFlex™ instrument sample block(s); excessive use of the solution, however, can corrode the sample block(s) material. To prevent damage to the sample block(s):

- Avoid applying excessive amounts of bleach solution. If possible, instead of using a squeeze bottle or soaked cloth, use an atomizer to deliver the solution to the wells of the block(s).
- After treating with bleach solution, rinse the sample block(s) thoroughly using deionized water.

Note: Removing residual bleach from the surfaces of the instrument using water minimizes the long-term effects of bleach treatments.

If the sample block(s) become contaminated with radioactivity, use a commercially available decontaminant to remove the contamination. If the block(s) cannot be decontaminated, the instrument cannot be returned to Life Technologies™ for service.

Clean the heated cover

Clean the heated cover once a month or as needed.



CAUTION! During instrument operation, the temperature of the heated cover can be as high as 110°C, and the temperature of the sample block(s) can be as high as 100°C. Before performing the procedure, keep hands away until the heated cover and sample block(s) reach room temperature.

To clean the heated cover:

1. Follow the steps in “Preparation” on page 49.
2. Open the heated cover.
3. Soak a cotton swab or piece of clean cloth with isopropanol and gently wipe the heated platen.



WARNING! CHEMICAL HAZARD. Isopropanol is a flammable liquid and vapor. Exposure may cause eye, skin, and upper respiratory tract irritation. Prolonged or repeated contact may dry skin and cause irritation. Exposure may cause central nervous system effects such as drowsiness, dizziness, and headache. Read the MSDS, and follow the handling instructions.

4. Remove any remaining isopropanol from the cover.

Note: If the platen becomes contaminated with amplified DNA, then raise the heated cover to the cleaning position, wipe the platen with a cloth or cotton swab soaked in bleach, then rinse with water.

Clean the heated platen once a month or as needed.

Decontaminate the heated cover

If the heated cover become contaminated with amplified DNA, raise the heated cover to the cleaning position and wipe the cover with a cloth or cotton swab soaked in 1:10 v/v dilution of 5.25% sodium hypochlorite (Clorox® bleach), then wipe the cover with a damp cloth.

Replace the fuses

Required materials

- Two UL Listed fuse, rated 10A, 250VAC, size: 5 x 20 mm

Note: For Australia and New Zealand only: Two 10 A Type Time Lag, 5 x 20 mm, 250 VAC

- Fine flat-tip screwdriver

Procedure

1. Power off the instrument by disconnecting the power.



DANGER! ELECTRICAL SHOCK HAZARD. Severe electrical shock, which could cause physical injury or death, can result from working on an instrument when the high voltage power supply is operating. To avoid electrical shock, disconnect the power supply to the instrument, unplug the power cord, and wait at least 1 minute before working on the instrument.

2. Insert a small flat-tip screwdriver into the slot in the upper portion of the power entry module, and open the door.
3. Pull out the fuse compartment to inspect the two fuses in the fuse compartment:
4. Pull out the blown fuse(s) from the fuse compartment and replace with new Two UL Listed fuse, rated 10A, 250VAC, size: 5 x 20 mm.
Note: For Australia and New Zealand, use new two 10 A Type Time Lag, 5 x 20 mm, 250 VAC.
5. Place the fuse compartment back into the power entry module (there is only one orientation) and close the door.
6. Press the door until it locks in place.
7. Connect the instrument power cord.

Upgrade the system firmware

About the upgrade

If Life Technologies provides a new version of the firmware for the ProFlex™ PCR System, you may be required to load the new firmware on the instrument.

You will need a USB drive and, if your instrument requires login, the login details to upgrade the firmware.

IMPORTANT! You cannot upgrade the firmware while a run is in progress.

Upgrade the firmware

1. Open the About Instrument screen to determine the version number of the existing firmware. To open the About Instrument screen, in the Home screen, touch **Settings**. In the Settings screen, touch **About Instrument**.
2. Record the version number of the firmware, then touch **Done**.
3. On a computer connected to the Internet, go to www.lifetechnologies.com to determine the version number of the new firmware.
4. Click **Product Support**, then **Technical Resources** ► **Product Support** ► **Software, Patches & Updates**
5. Select ProFlex™ PCR System in the list, then click **Updates & Patches**.
6. Find the appropriate file. If the version number is:
 - The same as the current version (from step 3), you do not need to upgrade the firmware.
 - Different from the current version (from step 3), follow the steps below to download and upgrade the firmware.
7. Insert a USB drive into the USB port on the computer to download the new firmware to the USB drive.
8. Click the link in the Software column to download the file. Select the USB drive as the location for the saved file.
9. Remove the USB drive from the computer when the download is complete.

To upgrade the instrument with the new firmware:

1. Insert the USB drive with the new firmware in the USB port.
2. In the Home screen, touch **Settings**, or touch the shortcut to the Upgrade Firmware screen if you have enabled the USB pop-up.
3. In the Settings screen, touch **Maintenance & Services**.
4. In the Maintenance & Services screen, touch **Software Update**.
The Software Update screen opens:

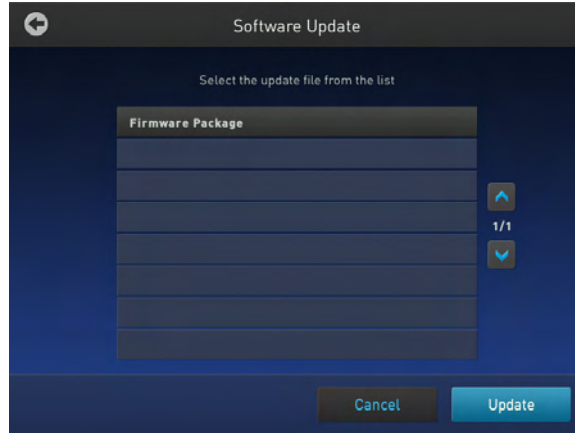


Figure 38 Software Update screen

5. Touch the name of the file with the new firmware, then touch **Update**.
6. Touch **Yes** to confirm that you want to upgrade.

IMPORTANT! To prevent instrument malfunction and required service, do not power off the instrument during the upgrade.

When the upgrade process is complete, the instrument will restart automatically.

Self Verification test

Use the Self Verification Test feature for the instrument to check the instrument hardware. The check includes testing the block, heated cover, and other components.

Note: Carry out the Self Verification test periodically or whenever there is an intermittent instrument error.

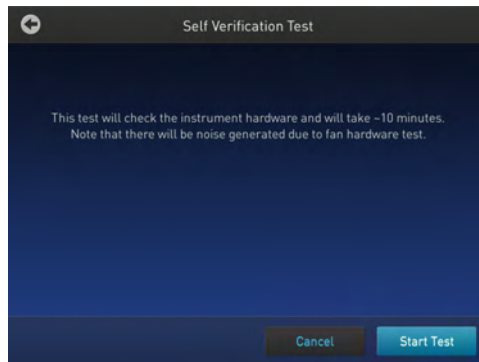


Figure 39 Self Verification Test screen

Procedure

To carry out the Self Verification test:

1. In the Home screen, touch **Settings**.
2. In the Settings screen, touch **Maintenance & Services**.

3. In the Maintenance & Settings screen, touch **Self Verification Test**.
4. In the Self Verification Test screen, touch **Start Test** to begin testing or **Cancel** to exit the screen
The test takes about 10 minutes. Once the test is completed the test results will be displayed in the form of a report.
Note: For the ProFlex™ 3x32-Well PCR System, all the blocks are tested at the same time. Ensure that no run is on at the time of the Self Verification test.
Note: Contact your Life Technologies™ service representative in case of block failure.
5. Touch **Export** to save the test report to a USB drive or **Close** to exit the screen.

Order kits and replacement parts

Refer to Appendix A, “Ordering Information” to obtain part numbers for kits and replacement parts.



Ordering Information

Instrument part numbers

Contact your regional Life Technologies™ sales office to order kits, accessories, consumables, and spare parts for the ProFlex™ System (Cat. No. A24811).

Table 6 ProFlex™ PCR Systems

Description	Cat. No.
ProFlex™ 96-Well PCR System	4484075
ProFlex™ 3x32-Well PCR System	4484073
ProFlex™ Dual 96-Well PCR System	4484076
ProFlex™ Dual Flat PCR System	4484078
ProFlex™ Dual 384-Well PCR System	4484077

Table 7 ProFlex™ Sample Blocks

Description	Cat. No.
ProFlex™ 96-Well Sample Block	4483637
ProFlex™ 3x32-Well Sample Block	4483638
ProFlex™ Dual 96-Well Sample Block	4484071
ProFlex™ Dual Flat Sample Block	4484074
ProFlex™ Dual 384-Well Sample Block	4484072

Consumables

IMPORTANT! In Table 8, the Model/ Format column indicates the model(s) of the ProFlex™ System that are compatible with the associated kit or disposable. Before ordering, verify that your ProFlex™ System supports the kit or disposable.

Table 8 ProFlex™ PCR System Consumables

Consumable	Model/ Format	Cat. No.
Single Tubes ^[1]		
MicroAmp® Reaction Tube with Cap, 0.2-mL	32 Well, 96 Well, and 2x96 Well	N8010540/ N8011540
MicroAmp® Reaction Tube with Cap, Assorted Colors, 0.2-mL		N8010840
MicroAmp® Reaction Tube with Cap, Autoclaved, 0.2-mL		N8010612
MicroAmp® Reaction Tube without Cap, 0.2-mL		N8010533/ N8011533
MicroAmp® Reaction Tube without Cap, Assorted Colors, 0.2-mL		N8010833
MicroAmp® Optical Tube without Cap, 0.2-mL		N8010933
MicroAmp® 96-Well Reaction Tube/Tray/Retainer Set, 0.2-mL	96 Well and 2x96 Well	403083/ 403086
Reaction Trays		
MicroAmp® 96-Well Reaction Tray for VeriFlex™ Systems	0.2 (96 Well and 2x96 Well)	4379983
MicroAmp® 96-Well Reaction Tray/ Retainer for VeriFlex™ Systems		4381850
MicroAmp® 3x32-Well Retainer for VeriFlex™ Systems		4481669
Seals and Covers		
MicroAmp® Clear Adhesive Film	0.2 (96 Well, 2x96 Well, and 2x384 Well)	4306311
MicroAmp® Optical Adhesive Film		4360954/ 4311971
MicroAmp® Optical Adhesive Film Kit		4313663
96-Well Plates		
MicroAmp® Optical 96-Well Reaction Plate	0.2 (96 Well and 2x96 Well)	N8010560/ 4316813
MicroAmp® Optical 96-Well Reaction Plate with Barcode		4306737/ 4326659
MicroAmp® Optical 96-Well Reaction Plate with Barcode and Optical Caps		403012



Consumable	Model/ Format	Cat. No.
MicroAmp [®] Optical 96-Well Reaction Plate with Barcode and Optical Adhesive Films		403012
384-Well Plates		
EnduraPlate [™] Optical 384-Well Plates (20 Plates)	2x384 Well	4483285
EnduraPlate [™] Optical 384-Well Plates (500 Plates)		4483273
MicroAmp [®] Optical 384-Well Reaction Plate with Barcode (50 Plates)		4309849
MicroAmp [®] Optical 384-Well Reaction Plate with Barcode (500 Plates)		4326270
MicroAmp [®] Optical 384-Well Reaction Plate with Barcode (1000 Plates)		4343814
MicroAmp [®] Optical 384-Well Reaction Plate (1000 Plates)		4306311
Dual Flat Block Consumables		
QuantStudio [™] 3D Digital PCR Chip Adapter for Dual Flat Block Thermal Cycler (1 kit)	Dual Flat Block	4485513
QuantStudio [™] 3D Digital PCR Chips (12 Chips)		4485507
8-Well Strips ^[2]		
MicroAmp [®] 8-Tube Strip, 0.2-mL	0.2 (32 Well and 96 Well)	N8010580
MicroAmp [®] 8-Tube Strip, Assorted Colors, 0.2-mL		N8010838
MicroAmp [®] Optical 8-Tube Strip, 0.2-mL		4316567
MicroAmp [®] 8-Cap Strip		N8011535
MicroAmp [®] 8-Cap Strip, Assorted Colors		N8010835
MicroAmp [®] Optical 8-Cap Strip		4323032

[1]

There are no 32-well Microplates available for use with the ProFlex[™] 3x32-Well PCR System. Instead, single tubes with caps are used for running the PCR samples.

[2]

There are no 32-well Microplates available for use with the ProFlex[™] 3x32-Well PCR System. Instead, tube strips with caps or cap strips are used for running the PCR samples.



Table 9 ProFlex™ PCR System sample handling supplies

Part Name	Cat. No.
MicroAmp® Adhesive Film Applicator	4333183
MicroAmp® Multi-Removal Tool	4313950
MicroAmp® Cap Installing Tool (Handle)	4330015
MicroAmp® 96-Well Base	N8010531
MicroAmp® Splash Free 96-Well Base	4312063
MicroAmp® Centrifuge Adapter	N8013822



Troubleshooting

Troubleshoot problems

Use the following table to help troubleshoot problems with your ProFlex™ System.

Problem	Possible cause	Check and/or remedy
Cooling rate too slow	Peltier assembly failure	Run the Cycle Performance Test.
Temperature does not match specified temperature	Instrument may require calibration	Run the Temperature Verification Test.
Heating rate too slow	Peltier failure	Run the Cycle Performance Test.
Printing fails	<ul style="list-style-type: none"> • Printer incorrectly configured on instrument • Printer not connected to network • Instrument not connected to network • Ethernet cable bad 	<ul style="list-style-type: none"> • Make sure the printer IP address on the instrument matches the IP address from the system administrator. • Is Ethernet cable connected to the printer? • Is Ethernet cable connected to the instrument? • Is network functioning? • Try a different Ethernet cable.
Cycling time too long	Peltier assembly failure	Run the Cycle Performance Test.
When running on multiple instruments, cannot see instruments in "Select Instruments" screen	<ul style="list-style-type: none"> • Instrument(s) not connected to network • Switch powered off • Ethernet cable bad • IP address conflict • Allow Remote Runs setting in Instrument Name screen set to No. 	<ul style="list-style-type: none"> • Are all Ethernet cables connected to the instruments? • Are all Ethernet cables connected to the network switch? • Try a different Ethernet cable. • Change the IP addresses on the instruments. • In Instrument Name screen, change Allow Remote Runs to Yes.

Problem	Possible cause	Check and/or remedy
No screen display No response when you power on the instrument	Blown fuse Not connected to power source	Check fuses. Is power switch on? Is power cord connected?
Screen display is missing characters or is illegible	LCD screen failure	Request service.
Sample tubes melt during run	Incompatible consumables used Heated cover too hot Sample block(s) too hot	Use recommended consumables (see Appendix A, "Ordering Information"). Run the Heated Cover Verification Test.
Heating cover stuck	Cam, platen, or cover assembly malfunctioning	Request service
Heated cover not responsive	Heated cover failure	Run the Heated Cover Verification Test.
Sample tubes are crushed or deformed after run	Incompatible consumables used, or proper trays/retainer accessories not used	Use recommended consumables (see Appendix A, "Ordering Information").

Return an instrument for service

Before returning an instrument for service, back up the run methods and instrument settings, as described in "Manage methods and folders" on page 41 and t_eGUI Reco Instr Settings on page 25. This practice ensures that if the service center sends you a replacement instrument, you can restore the run methods and other settings.

To return an instrument for service:

1. Contact your local customer care center or technical support group to obtain a copy of the Certificate of Instrument Decontamination, a service notification, a service call number, and, if required, packaging.

2. Decontaminate the instrument.

IMPORTANT! If the sample block(s) become contaminated with radioactivity, use a commercially available decontaminant to remove the contamination. If the block(s) cannot be decontaminated, the instrument cannot be returned to Life Technologies for service.

3. Complete and sign a copy of the Certificate of Instrument Decontamination.
4. Fax the Certificate of Instrument Decontamination to the customer care center.

5. Pack the instrument in the provided packaging, without any accessories or power cords. Include a hard copy of the Certificate of Instrument Decontamination in the box.

Note: Repairs for instruments without the Certificate of Instrument Decontamination are delayed.

6. Affix the provided postage to the box, then ship the instrument to the designated facility.
The repair process requires 2 to 3 weeks.



Instrument specifications

This chapter lists the instrument specifications for the ProFlex™ PCR System using the ProFlex™ 96-Well Sample Block, the ProFlex™ 3x32-Well Sample Block, the ProFlex™ Dual 96-Well Sample Block, ProFlex™ Dual Flat Sample Block, and the ProFlex™ Dual 384-Well Sample Block.

Technical specifications

The following table displays the system specifications for the ProFlex™ PCR System using the ProFlex™ 96-Well Sample Block, ProFlex™ 3x 32-Well Sample Block, ProFlex™ 2x 96-Well Sample Block, ProFlex™ 2x Flat Sample Block, ProFlex™ 2x 384-Well Sample Block



Table 10 ProFlex™ PCR System technical specifications: ProFlex™ 96-Well Sample Block, ProFlex™ 3x32-Well Sample Block, ProFlex™ 2x 96-Well Sample Block, ProFlex™ 2x Flat Sample Block, ProFlex™ 2x 384-Well Sample Block

Specification	Block format				
	ProFlex™ 96-Well Sample Block	ProFlex™ 3x 32-Well Sample Block	ProFlex™ 2x 96-Well Sample Block	ProFlex™ 2x Flat Sample Block	ProFlex™ 2x 384-Well Sample Block
Maximum block ramp rate	6.00°C/sec		3.00°C/sec	1.60°C/sec	3.00°C/sec
Maximum sample ramp rate	4.40°C/sec		1.60°C/sec	N/A	1.60°C/sec
Temperature accuracy	±0.25°C (35 to 99.9°C)				
Temperature range for protocol run	0°C to 100.0°C				
Temperature uniformity	<0.5°C (30 seconds after reaching 95°C)		For each block: <0.5°C (30 seconds after reaching 95°C) Overall (across two blocks): <0.75°C (30 seconds after reaching 95°C)		<0.5°C (30 seconds after reaching 95°C)






Specification	Block format				
	ProFlex™ 96-Well Sample Block	ProFlex™ 3x 32-Well Sample Block	ProFlex™ 2x 96-Well Sample Block	ProFlex™ 2x Flat Sample Block	ProFlex™ 2x 384-Well Sample Block
Dimensions	<ul style="list-style-type: none"> • Height: 27.2 cm (10.7 in) • Width: 33.0 cm (13 in) • Depth: 56.5 cm (22 in) 				
Weight	18.75 kg (41 lb)		19.3 kg (42.5 lb)	19.6 kg (43.2 lb)	20.35 kg (45 lb)
PCR volume range	10 – 80 µL		10 – 100 µL	<1 µL	5 – 20 µL
Instrument memory	USB, on-board				
Display interface	8.4" color TFT LCD				
Power	100-240 V, 50-60 Hz Max: 950 W, Max Current: 12 A Note: For Australia (AU) / New Zealand (NZ) only: 230 VAC, 50 Hz, Max: 950 W, Max Current: 10 A				
VeriFlex™ blocks	96-well, 0.2 mL VeriFlex™ block: 25°C (5°C zone-to-zone), 6 VeriFlex™ zones	3 x 32-well, 0.2 mL independent control: 5°C, 2 VeriFlex™ zones	N/A		
Ambient humidity	15% - 80% Relative Humidity, non-condensing (acceptable range)				
Ambient operating temperature	15°C to 30°C (acceptable range)				

Table 11

Port	Description
	AC power cable port
	10/100 Fast Ethernet port for connecting to a network



Port	Description
	USB v1.0 port for connecting to an external network drive, jump drive, or other USB storage device
	RS232 serial communication port for connecting the probe for the Temperature Verification Kit
	USB v1.0 port for connecting to USB-enabled Wi-Fi Card

System specifications

Table 12 Physical dimensions, weight, and power consumption

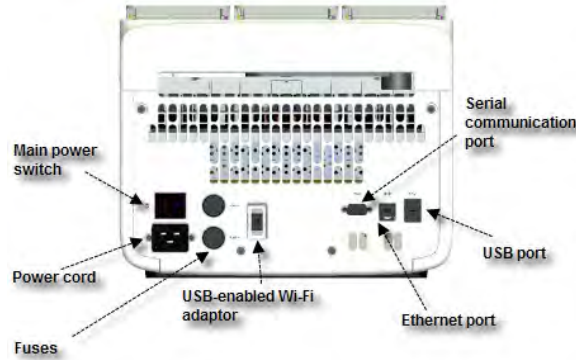
Parameter	Instrument footprint	Recommended clearance	Total
Height	21 cm (8.27 in)	24 cm (9.44 in) ^[1]	45 cm (17.71 in)
Width	24.0 cm (9.45 in)	0 cm (0 in)	24.0 cm (9.45 in)
Depth	46 cm (18.11 in)	23.0 cm (9 in) ^[2]	69 cm (27.1 in)
Weight	ProFlex™ PCR System with the: <ul style="list-style-type: none"> • ProFlex™ 96-Well Sample Block or the ProFlex™ 3x32-Well Sample Block: 18.75 kg (41 lb) • ProFlex™ Dual 96-Well Sample Block: 19.3 kg (42.5 lb) • ProFlex™ Dual Flat Sample Block: 19.6 kg (43.2 lb) • ProFlex™ Dual 384-Well Sample Block: 20 kg (44 lb) 		
Power consumption	600 W - Maximum consumption		
	164 W - Average during thermal cycling		
	30 W - During sleep/ standby		

^[1] With the heated cover open

^[2] At the rear of the instrument to ensure adequate airflow and cooling

Location of power point and ports on the instrument

The following graphic displays the location of the power cord insertion point as well as the various ports provided in the instrument.





Predefined Run Methods

The following run methods (distributed across ten categories) are supplied with the ProFlex™ PCR System. A particular run method can appear in more than one category. These run methods are based on recommended protocols from Life Technologies and should be considered as starting points for the different applications. Your results may vary between instrument models, so some optimization may be needed. Please note that the ramp rates of these methods are set at 100%.

The following table lists the categories and the run methods they include.

Table 13 Pre-defined categories and run methods

Category	Run method
Blank Template	<ul style="list-style-type: none">• General PCR Run Method• Blank PCR 1• Blank PCR 2
Basic PCR	<ul style="list-style-type: none">• AmpliTaq® 360 Method• AmpliTaq® Method• Basic PCR Taq Method
Hot Start	<ul style="list-style-type: none">• AmpliTaq® 360 Method• AmpliTaq Gold® Method• AmpliTaq Gold® Fast PCR Run Method• Platinum® Taq DNA Polymerase Method• Platinum® Taq SuperMix Method
Sequencing	<ul style="list-style-type: none">• BigDye® Direct Cycle Sequence Method• BigDye® Direct PCR Run Method• BigDye® Kit Fast Run Method• BigDye® Kit Standard Run Method
Optimization	<ul style="list-style-type: none">• Time Release Run Method• Touchdown PCR Run Method
RT-PCR	SuperScript® III 1-Step System Method

Category	Run method
High Fidelity	<ul style="list-style-type: none"> • AccuPrime™ PFX 2-Step Method • AccuPrime™ PFX 3-Step Method • AccuPrime™ Taq High Fidelity Method • Platinum® PFX 2-Step Method • Platinum® PFX 3-Step Method • Platinum® Taq High Fidelity Method
High Specificity	<ul style="list-style-type: none"> • AccuPrime™ PFX 2-Step Method • AccuPrime™ PFX 3-Step Method • AccuPrime™ Taq DNA Polymerase Method • AccuPrime™ Taq High Fidelity Method
Next-Gen Sequencing	TargetSeq™ Exome Enrichment Method
Long PCR	<ul style="list-style-type: none"> • Elongase® 2-Step Method • Elongase® 3-Step Method • AccuPrime™ Taq High Fidelity Method • Platinum® Taq High Fidelity Method
Digital PCR (only for Dual Flat block)	<ul style="list-style-type: none"> • 3D • OpenArray® Genotyping

These run methods cannot be edited or deleted, but if you save them with a different name or to a different folder, you can edit them.

The following sections provide the method details:

Note: For illustration purpose, the tables display maximum ramp rate. These will however change with different block types.

AccuPrime™ PFX 2-Step Method

Cycle/Step		Stage				Reaction volume (µL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	35	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	94.0	94.0	4.0			
	Hold Time	120	15	Infinite			
Step 2	RampRate	—	6.0	—	—		
	Temperature		68.0				
	Hold Time		60				

AccuPrime™ PFX 3-Step Method

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	25	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	94.0	94.0	4.0			
	Hold Time	120	15	Infinite			
Step 2	RampRate	—	6.0	—	—		
	Temperature		55.0				
	Hold Time		15				
Step 3	RampRate	—	6.0	—	—		
	Temperature		68.0				
	Hold Time		60				

AccuPrime™ Taq DNA Polymerase Method

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	25	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	94.0	94.0	4.0			
	Hold Time	120	15	Infinite			
Step 2	RampRate	—	6.0	—	—		
	Temperature		55.0				
	Hold Time		15				
Step 3	RampRate	—	6.0	—	—		
	Temperature		68.0				
	Hold Time		60				

AccuPrime™ Taq High Fidelity Method

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	25	1	—	50	105.0

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Step 1	RampRate	6.0	6.0	6.0	—	50	105.0
	Temperature	94.0	94.0	4.0			
	Hold Time	15	15	Infinite			
Step 2	RampRate	—	6.0	—	—		
	Temperature		52.0				
	Hold Time		15				
Step 3	RampRate	—	6.0	—	—		
	Temperature		68.0				
	Hold Time		60				

AmpliTaq[®] 360 Method

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	35	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	94.0	95.0	72.0			
	Hold Time	180	95.0, 30	420			
Step 2	RampRate	—	6.0	4.0, Infinite	—		
	Temperature		58.0				
	Hold Time		30				
Step 3	RampRate	—	6.0	—	—		
	Temperature		72.0				
	Hold Time		60				

AmpliTaq Gold[®] 360 Method

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	35	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	95.0	95.0	72.0			

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
	Hold Time	300	15	420			
Step 2	RampRate	—	6.0	6.0	—		
	Temperature		55.0	4.0			
	Hold Time		30	Infinite			
Step 3	RampRate	—	6.0	—	—		
	Temperature		72.0				
	Hold Time		60				

AmpliTaq Gold® Fast PCR Method

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	35	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	95.0	96.0	72.0			
	Hold Time	600	3	10			
Step 2	RampRate	—	6.0	6.0	—		
	Temperature		62.0	4.0			
	Hold Time		3	Infinite			
Step 3	RampRate	—	6.0	—	—		
	Temperature		68.0				
	Hold Time		5				

AmpliTaq Gold® Method

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	35	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	95.0	95.0	72.0			
	Hold Time	300	15	420			
Step 2	RampRate	—	6.0	6.0	—		

Cycle/Step		Stage				Reaction volume (µL)	Cover temp. (°C)
		1	2	3	4		
	Temperature		55.0	4.0			
	Hold Time		15	Infinite			
Step 3	RampRate	—	6.0	—	—		
	Temperature		72.0				
	Hold Time		30				

AmpliTaq® Method

Cycle/Step		Stage				Reaction volume (µL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	35	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	95.0	95.0	72.0			
	Hold Time	60	15	420			
Step 2	RampRate	—	6.0	6.0	—		
	Temperature		55.0	4.0			
	Hold Time		15	Infinite			
Step 3	RampRate	—	6.0	—	—		
	Temperature		72.0				
	Hold Time		30				

Basic PCR Taq Method

Cycle/Step		Stage				Reaction volume (µL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	35	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	95.0	95.0	72.0			
	Hold Time	60	15	420			
Step 2	RampRate	—	6.0	6.0	—		
	Temperature		55.0	4.0			
	Hold Time		15	Infinite			

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Step 3	RampRate	—	6.0	—	—		
	Temperature		72.0				
	Hold Time		30				

BigDye® Direct Cycle Sequence Method

Cycle/Step		Stage					Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4	5		
Cycles		1	1	1	25	1	50	105.0
Step 1	RampRate	4.0	6.0	6.0	6.0	4.0		
	Temperature	37.0	80.0	96.0	96.0	4.0		
	Hold Time	900	120	60	10	Infinite		
Step 2	RampRate	—	—	—	6.0	—		
	Temperature				50.0			
	Hold Time				5			
Step 3	RampRate	—	—	—	6.0	—		
	Temperature				60.0			
	Hold Time				75			

BigDye® Direct PCR Run Method

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	35	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	95.0	96.0	72.0			
	Hold Time	600	3	120			
Step 2	RampRate	—	6.0	6.0	—		
	Temperature		62.0	4.0			

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
	Hold Time		15	Infinite			
Step 3	RampRate	—	6.0	—	—		
	Temperature		68.0				
	Hold Time		30				

BigDye® Kit Fast Run Method

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	25	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	96.0	96.0	4.0			
	Hold Time	60	10	Infinite			
Step 2	RampRate	—	6.0	—	—		
	Temperature		50.0				
	Hold Time		5				
Step 3	RampRate	—	6.0	—	—		
	Temperature		60.0				
	Hold Time		75				

BigDye® Kit Standard Run Method

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)		
		1	2	3	4				
Cycles		1	25	1	—	50	105.0		
Step 1	RampRate	6.0	6.0	6.0	—				
	Temperature	96.0	96.0	4.0					
	Hold Time	60	10	Infinite					
Step 2	RampRate	—	6.0	—	—				
	Temperature		50.0						
	Hold Time		5						
Step 3	RampRate	—	6.0	—	—				

Cycle/Step		Stage				Reaction volume (µL)	Cover temp. (°C)
		1	2	3	4		
	Temperature		60.0				
	Hold Time		240				

Elongase® 2-Step Method

Cycle/Step		Stage				Reaction volume (µL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	30	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	94.0	94.0	4.0			
	Hold Time	30	30	Infinite			
Step 2	RampRate	—	6.0	—	—		
	Temperature		68.0				
	Hold Time		60				

Elongase® 3-Step Method

Cycle/Step		Stage				Reaction volume (µL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	30	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	94.0	94.0	4.0			
	Hold Time	60	30	Infinite			
Step 2	RampRate	—	6.0	—	—		
	Temperature		55.0				
	Hold Time		30				
Step 3	RampRate	—	6.0	—	—		
	Temperature		68.0				
	Hold Time		60				

General PCR Method

Cycle/Step		Stage				Reaction volume (µL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	35	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	95.0	95.0	72.0			
	Hold Time	60	15	420			
Step 2	RampRate	—	6.0	6.0	—		
	Temperature		55.0	4.0			
	Hold Time		15	Infinite			
Step 3	RampRate	—	6.0	—	—		
	Temperature		72.0				
	Hold Time		30				

Platinum® PFX 2-Step Method

Cycle/Step		Stage				Reaction volume (µL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	35	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	94.0	94.0	4.0			
	Hold Time	120	15	Infinite			
Step 2	RampRate	—	6.0	—	—		
	Temperature		68.0				
	Hold Time		60				

Platinum® PFX 3-Step Method

Cycle/Step		Stage				Reaction volume (µL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	35	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	94.0	94.0	4.0			
	Hold Time	120	15	Infinite			

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Step 2	RampRate	—	6.0	—	—	50	105.0
	Temperature		55.0				
	Hold Time		30				
Step 3	RampRate	—	6.0	—	—		
	Temperature		68.0				
	Hold Time		60				

Platinum[®] Taq DNA Polymerase Method

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	30	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	94.0	94.0	4.0			
	Hold Time	30	30	Infinite			
Step 2	RampRate	—	6.0	—	—		
	Temperature		55.0				
	Hold Time		30				
Step 3	RampRate	—	6.0	—	—		
	Temperature		72.0				
	Hold Time		60				

Platinum[®] Taq High Fidelity Method

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	35	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	94.0	94.0	4.0			
	Hold Time	30	15	Infinite			
Step 2	RampRate	—	6.0	—	—		
	Temperature		55.0				

Cycle/Step		Stage				Reaction volume (µL)	Cover temp. (°C)
		1	2	3	4		
	Hold Time		15				
Step 3	RampRate	—	6.0	—	—		
	Temperature		68.0				
	Hold Time		60				

Platinum[®] Taq SuperMix Method

Cycle/Step		Stage				Reaction volume (µL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	30	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	94.0	94.0	4.0			
	Hold Time	30	15	Infinite			
Step 2	RampRate	—	6.0	—	—		
	Temperature		55.0				
	Hold Time		15				
Step 3	RampRate	—	6.0	—	—		
	Temperature		72.0				
	Hold Time		60				

SuperScript[®] III 1-Step System Method

Cycle/Step		Stage				Reaction volume (µL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	40	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	60.0	94.0	68.0			
	Hold Time	900	15	300			
Step 2	RampRate	6.0	6.0	6.0	—		
	Temperature	94.0	55.0	4.0			
	Hold Time	120	30	Infinite			
Step 3	RampRate	—	6.0	—	—		

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
	Temperature		68.0				
	Hold Time		60				

TargetSeq™ Exome Enrichment Method

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Cycles		72	–	–	–	50	105.0
Step 1	RampRate	6.0	–	–	–		
	Temperature	47.0					
	Hold Time	3600					

Time Release Method

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1	40	1	—	50	105.0
Step 1	RampRate	6.0	6.0	6.0	—		
	Temperature	95.0	95.0	72.0			
	Hold Time	60	15	420			
Step 2	RampRate	—	6.0	6.0	—		
	Temperature		55.0	4.0			
	Hold Time		15	Infinite			
Step 3	RampRate	—	6.0	—	—		
	Temperature		72.0				
	Hold Time		30				

Touchdown PCR Method

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Cycles		20	10			50	105.0
Step 1	RampRate	6.0	6.0	—	—		
	Temperature	94.0	94.0				

Cycle/Step		Stage				Reaction volume (μL)	Cover temp. (°C)
		1	2	3	4		
Step 2	Hold Time	15	15				
	RampRate	6.0	6.0				
	Temperature	65.0	55.0				
	Hold Time	30	30				
	AutoDelta Temperature	-0.5	—				
	AutoDelta Starting Cycle	1	—				

3D

Cycle/Step		Stage				Reaction volume (nL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1x	39x	1x		1	70.0
Step 1	RampRate	0.8	1.2	1.2	—		
	Temperature	96.0	60.0	60.0			
	Hold Time	600	120	120			
Step 2	RampRate	—	0.8	1.2			
	Temperature	—	98.0	10.0			
	Hold Time	—	30	∞			


OpenArray® Genotyping

Cycle/Step		Stage				Reaction volume (nL)	Cover temp. (°C)
		1	2	3	4		
Cycles		1x	50x			33	70.0
Step 1	RampRate	1.3	1.3	—	—		
	Temperature	94.0	99.0				
	Hold Time	600	30				
Step 2	RampRate	—	1.1				
	Temperature	—	54.0				
	Hold Time	—	21				

Cycle/Step		Stage				Reaction volume (nL)	Cover temp. (°C)
		1	2	3	4		
Step 3	RampRate	—	0.1				
	Temperature	—	57.0				
	Hold Time	—	90				







Safety










-
-  **WARNING! GENERAL SAFETY.** Using this product in a manner not specified in the user documentation may result in personal injury or damage to the instrument or device. Ensure that anyone using this product has received instructions in general safety practices for laboratories and the safety information provided in this document.
- Before using an instrument or device, read and understand the safety information provided in the user documentation provided by the manufacturer of the instrument or device.
 - Before handling chemicals, read and understand all applicable Safety Data Sheets (SDSs) and use appropriate personal protective equipment (gloves, gowns, eye protection, etc). To obtain SDSs, see the “Documentation and Support” section in this document.
-

Symbols on this instrument

Symbols may be found on the instrument to warn against potential hazards or convey important safety information. In this document, the hazard symbol is used along with one of the following user attention words:



- **CAUTION!** – Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.
- **WARNING!** – Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.
- **DANGER!** – Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

Symbol	English	Français
	Caution, risk of danger Consult the manual for further safety information.	Attention, risque de danger Consulter le manuel pour d'autres renseignements de sécurité.
	Caution, risk of electrical shock	Attention, risque de choc électrique
	Moving parts	Parties mobiles
	Caution, sharp edges	Attention, bords coupants

Symbol	English	Français
	Caution, hot surface	Attention, surface chaude
	Potential biohazard	Danger biologique potentiel
	Potential slipping hazard	Danger de glisser potentiel
	Standby	En attente
	Protective conductor terminal (main ground)	Borne de conducteur de protection (mise à la terre principale)
	Terminal that can receive or supply alternating or direct current or voltage	Borne pouvant recevoir ou envoyer une tension ou un courant continu ou alternatif
	<p>Do not dispose of this product in unsorted municipal waste</p> <p> CAUTION! To minimize negative environmental impact from disposal of electronic waste, do not dispose of electronic waste in unsorted municipal waste. Follow local municipal waste ordinances for proper disposal provision and contact customer service for information about responsible disposal options.</p>	<p>Ne pas éliminer ce produit avec les déchets usuels non soumis au tri sélectif.</p> <p> CAUTION! Pour minimiser les conséquences négatives sur l'environnement à la suite de l'élimination de déchets électroniques, ne pas éliminer ce déchet électronique avec les déchets usuels non soumis au tri sélectif. Se conformer aux ordonnances locales sur les déchets municipaux pour les dispositions d'élimination et communiquer avec le service à la clientèle pour des renseignements sur les options d'élimination responsable.</p>

Safety alerts on this instrument

Additional text may be used with one of the symbols described above when more specific information is needed to avoid exposure to a hazard. See the following table for safety alerts found on the instrument.

English	French translation
 CAUTION! Hazardous chemicals. Read the Safety Data Sheets (SDSs) before handling.	ATTENTION! Produits chimiques dangereux. Lire les fiches signalétiques (FS) avant de manipuler les produits.
 CAUTION! Hazardous waste. Refer to SDS(s) and local regulations for handling and disposal.	ATTENTION! Déchets dangereux. Lire les fiches signalétiques (FS) et la réglementation locale associées à la manipulation et à l'élimination des déchets.

Location of safety labels on this instrument



Figure 40 Location of the safety label on the rear panel of the ProFlex™ System



Figure 41 Location of the safety label on the ProFlex™ System 3x32-Well Sample Block



Figure 42 Location of the safety label on the 96-Well Sample Block



Figure 43 Location of the safety label on the ProFlex™ Dual 96-Well Sample Block



Figure 44 Location of the safety label on the ProFlex™ Dual Flat Sample Block



Figure 45 Location of the safety label on the ProFlex™ Dual 384-Well Sample Block

Safety information for instruments not manufactured by Thermo Fisher Scientific

Some of the accessories provided as part of the instrument system are not designed or built by Thermo Fisher Scientific. Consult the manufacturer's documentation for the information needed for the safe use of these products.

Instrument safety

General



CAUTION! Do not remove instrument protective covers. If you remove the protective instrument panels or disable interlock devices, you may be exposed to serious hazards including, but not limited to, severe electrical shock, laser exposure, crushing, or chemical exposure.

Physical injury



CAUTION! Moving Parts. Moving parts can crush, pinch and cut. Keep hands clear of moving parts while operating the instrument. Disconnect power before servicing.

WARNING! Sharp Edges. The edges of this container are sharp.

Electrical



WARNING! Ensure appropriate electrical supply. For safe operation of the instrument:

- Plug the system into a properly grounded receptacle with adequate current capacity.
- Ensure the electrical supply is of suitable voltage.
- Never operate the instrument with the ground disconnected. Grounding continuity is required for safe operation of the instrument.



WARNING! Power Supply Line Cords. Use properly configured and approved line cords for the power supply in your facility.



WARNING! Disconnecting Power. To fully disconnect power either detach or unplug the power cord, positioning the instrument such that the power cord is accessible.

Cleaning and decontamination



CAUTION! Cleaning and Decontamination. Use only the cleaning and decontamination methods specified in the manufacturer's user documentation. It is the responsibility of the operator (or other responsible person) to ensure the following requirements are met:

- No decontamination or cleaning agents are used that could cause a HAZARD as a result of a reaction with parts of the equipment or with material contained in the equipment.
- The instrument is properly decontaminated a) if hazardous material is spilled onto or into the equipment, and/or b) prior to having the instrument serviced at your facility or sending the instrument for repair, maintenance, trade-in, disposal, or termination of a loan (decontamination forms may be requested from customer service).
- Before using any cleaning or decontamination methods (except those recommended by the manufacturer), users should confirm with the manufacturer that the proposed method will not damage the equipment

Laser



CAUTION! LASER HAZARD, Bar Code Scanner. The bar code scanner included with the instrument system is a Class 2 laser. To avoid damage to eyes, do not stare directly into the beam or point into another person's eyes.

Safety and electromagnetic compatibility (EMC) standards

The instrument design and manufacture complies with the standards and requirements for safety and electromagnetic compatibility as noted in the following table:

Safety

Reference	Description
EU Directive 2006/95/EC	European Union "Low Voltage Directive"
IEC 61010-1 EN 61010-1 UL 61010-1 CSA C22.2 No. 61010-1	<i>Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements</i>
IEC 61010-2-010 EN 61010-2-010	<i>Safety requirements for electrical equipment for measurement, control and laboratory use – Part 2-010: Particular requirements for laboratory equipment for the heating of materials</i>
21 CFR 1040.10 and 1040.11 as applicable	<i>U.S. FDA Health and Human Services (HHS) "Radiological health performance standards for laser products" and "Radiological health performance standards for specific purpose laser products"</i>

EMC

Reference	Description
Directive 2004/108/EC	European Union "EMC Directive"
EN 61326-1	<i>Electrical Equipment for Measurement, Control and Laboratory Use – EMC Requirements – Part 1: General Requirements</i>
FCC Part 18 (47 CFR)	U.S. Standard "Industrial, Scientific, and Medical Equipment"
AS/NZS 2064	<i>Limits and Methods of Measurement of Electromagnetic Disturbance Characteristics of Industrial, Scientific, and Medical (ISM) Radiofrequency Equipment</i>
ICES-001, Issue 3	<i>Industrial, Scientific and Medical (ISM) Radio Frequency Generators</i>

Environmental design

Reference	Description
Directive 2012/19/EU	European Union "WEEE Directive" – Waste electrical and electronic equipment
Directive 2011/65/EU	European Union "RoHS Directive" – Restriction of hazardous substances in electrical and electronic equipment
Directive 2006/66/EC	European Union "Battery Directive"
MII Order #39	PRC "Management Methods for Controlling Pollution by Electronic Information Products"

Chemical safety



WARNING! GENERAL CHEMICAL HANDLING. To minimize hazards, ensure laboratory personnel read and practice the general safety guidelines for chemical usage, storage, and waste provided below, and consult the relevant SDS for specific precautions and instructions:

- Read and understand the Safety Data Sheets (SDSs) provided by the chemical manufacturer before you store, handle, or work with any chemicals or hazardous materials. To obtain SDSs, see the "Documentation and Support" section in this document.
- Minimize contact with chemicals. Wear appropriate personal protective equipment when handling chemicals (for example, safety glasses, gloves, or protective clothing).
- Minimize the inhalation of chemicals. Do not leave chemical containers open. Use only with adequate ventilation (for example, fume hood).
- Check regularly for chemical leaks or spills. If a leak or spill occurs, follow the manufacturer's cleanup procedures as recommended in the SDS.
- Handle chemical wastes in a fume hood.
- Ensure use of primary and secondary waste containers. (A primary waste container holds the immediate waste. A secondary container contains spills or leaks from the primary container. Both containers must be compatible with the waste material and meet federal, state, and local requirements for container storage.)
- After emptying a waste container, seal it with the cap provided.
- Characterize (by analysis if necessary) the waste generated by the particular applications, reagents, and substrates used in your laboratory.
- Ensure that the waste is stored, transferred, transported, and disposed of according to all local, state/provincial, and/or national regulations.
- **IMPORTANT!** Radioactive or biohazardous materials may require special handling, and disposal limitations may apply.

Biological hazard safety



WARNING! BIOHAZARD. Biological samples such as tissues, body fluids, infectious agents, and blood of humans and other animals have the potential to transmit infectious diseases. All work should be conducted in properly equipped facilities using the appropriate safety equipment (for example, physical containment devices). Safety equipment also may include items for personal protection, such as gloves, coats, gowns, shoe covers, boots, respirators, face shields, safety glasses, or goggles. Individuals should be trained according to applicable regulatory and company/ institution requirements before working with potentially biohazardous materials. Follow all applicable local, state/provincial, and/or national regulations. The following references provide general guidelines when handling biological samples in laboratory environment.

- U.S. Department of Health and Human Services, *Biosafety in Microbiological and Biomedical Laboratories (BMBL)*, 5th Edition, HHS Publication No. (CDC) 21-1112, Revised December 2009; found at:
www.cdc.gov/biosafety/publications/bmb15/BMBL.pdf
 - World Health Organization, *Laboratory Biosafety Manual*, 3rd Edition, WHO/CDS/CSR/LYO/2004.11; found at:
www.who.int/csr/resources/publications/biosafety/Biosafety7.pdf
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Documentation and support

Related documentation

The following related documents are shipped with the system:

Document	Publication number	Description
ProFlex™ PCR System Installation and Operation Quick Reference	4483807	Describes the procedures for installing and using the ProFlex™ PCR System that is described in detail in the ProFlex™ PCR System User Guide.
ProFlex™ PCR System System Documentation	4483803	Provides the reference for accessing user documentation from the product website and contact details for service and technical support.
ProFlex™ 96-Well PCR System Thermal Cycling Starter Kit Insert	4485764	Lists the ProFlex™ 96-Well PCR System Thermal Cycling Starter Kit contents, required to use the ProFlex™ 96-Well PCR System, and the corresponding ordering information.
ProFlex™ 3x 32-Well PCR System Thermal Cycling Starter Kit Insert	4485765	Lists the ProFlex™ 3x 32-Well PCR System Thermal Cycling Starter Kit contents, required to use the ProFlex™ 3x 32-Well PCR System, and the corresponding ordering information.
ProFlex™ Dual 384-Well PCR System Thermal Cycling Starter Kit Insert	100024353	Lists the ProFlex™ Dual 384-Well PCR System Thermal Cycling Starter Kit contents, required to use the ProFlex™ Dual 384-Well PCR System, and the corresponding ordering information.

Note: For additional documentation, see “Obtaining support” on page 91.

Obtaining SDSs

Safety Data Sheets (SDSs) are available from www.lifetechnologies.com/support.

Note: For the SDSs of chemicals not distributed by Thermo Fisher Scientific, contact the chemical manufacturer.

Obtaining support

For the latest services and support information for all locations, go to:

www.lifetechnologies.com/support

At the website, you can:

- Access worldwide telephone and fax numbers to contact Technical Support and Sales facilities
- Search through frequently asked questions (FAQs)
- Search for user documents, SDSs, vector maps and sequences, application notes, formulations, handbooks, certificates of analysis, citations, and other product support documents
- Obtain information about customer training
- Download software updates and patches

Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale found on Life Technologies' website at **www.lifetechnologies.com/termsandconditions**. If you have any questions, please contact Life Technologies at **www.lifetechnologies.com/support**.

For support visit lifetechnologies.com/support or email techsupport@lifetech.com
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