

## Bio-Rad Dyad Thermal Cycler



**Manufacturer:** Bio-Rad Laboratories Inc.  
**Model Number:** PTC 220  
**Web Address:** [www.bio-rad.com](http://www.bio-rad.com)

The dual-bay DNA Engine Dyad thermal cycler features a high-density graphical interface and color display. Point-and-click navigation through the software enables rapid input of protocols. For laboratories expecting increased sample throughput, the DNA Engine Dyad can be expanded to a four-bay system with the addition of a Dyad Disciple thermal cycler. The DNA Engine Dyad/Dyad Disciple tandem can run up to eight independent protocols when equipped with dual blocks.

### DNA Engine Dyad: Commands

▶ **SETBLOCK( n, c )** - Selects a sample block. Blocks installed in a Dyad cycler are designated as 1,A; 1,B; 2,A, 2,B

n	Integer	Indicates the chosen Alpha unit. Range of values: <b>1</b> to <b>4</b> .
c	String	"A" - indicates a single block installed on the Alpha unit, "B" - indicates a double block installed on the Alpha unit.

▶ **BLOCKID( n )** - Visually identifies the current sample block to the user. Sending this command causes the unit to flash the LED designating the current block.

n	Integer	If n is 0, the LED flashes briefly. If n is 1, the LED flashes indefinitely, until a BLOCKID 0 command or a valid SETBLOCK n,c command is received. Range of values: <b>0</b> to <b>1</b> .
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▶ **INCUBATE( n )** - Activates the current sample block and immediately takes it to target temperature n.

n	Integer	Incubation temperature in degrees C.
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▶ **INCUBATE?( )** - Returns the target temperature of the current block (if it is active).

▶ **INCUBATEHOT( n )** - Preheats the lid, activates the current sample block and immediately takes it to target temperature n.

n	Integer	Incubation temperature in degrees C.
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▶ **PROGRAMS?( folder )** - Returns a list of programs in the specified folder.

folder	String	Indicates the folder name for the programs.
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▶ **RUN( name, control, lid )** - Initiates the specified program on the current block.

name	String	Identifies a program stored in the unit's internal non-volatile memory (any folder) or the program most recently created in the RAM buffer.
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control	String	"BLOCK" - specifies BLOCK control type. "PROBE" - specifies PROBE control type. "CALC" - specifies CALC control type.
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lid	Boolean	true - turns on the lid heater during the run. false - turns off the lid heater during the run.
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▶ **RUN?( )** - Returns the name of the program running on the current block, the current control method, and the current lid state separated by commas as for a RUN command.

▶ **STEP?( )** - Returns the programming step that is executing on the current block.

▶ **SNUMBER?( )** - Returns the number of the step that is executing on the current block.

▶ **BLOCKTEMP?( )** - Returns the measured temperature of the sample block.

▶ **PROBETEMP?( )** - Returns the measured in-sample probe temperature.

▶ **CALCTEMP?( )** - Returns the algorithmically calculated sample temperature.

▶ **LIDTEMP?( )** - Returns the measured lid temperature.

▶ **CANCEL( )** - Aborts the program in progress.

▶ **LID( open )** - Opens or closes the lid of the current block.

open	Boolean	true - opens the lid. false - closes the lid.
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▶ **LID?( )** - Returns a string description of the current lid position. OPEN - lid is open. CLOSED - lid is closed. OPENING - lid is opening. CLOSING - lid is closing.

▶ **ISINCUBATING?( )** - Indicates if the block is incubating.

▶ **ISRUNNING?( )** - Indicates if the block is running a program.

▶ **ISLIDPREHEATING?( )** - Indicates if the block is preheating a lid.

## DNA Engine Dyad: Errors

🔥 **LidError( message )** - Error if the lid does not exist, it is not automated, it is obstructed, lid sensor or mechanical error occurred.

message	String	Error message.
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