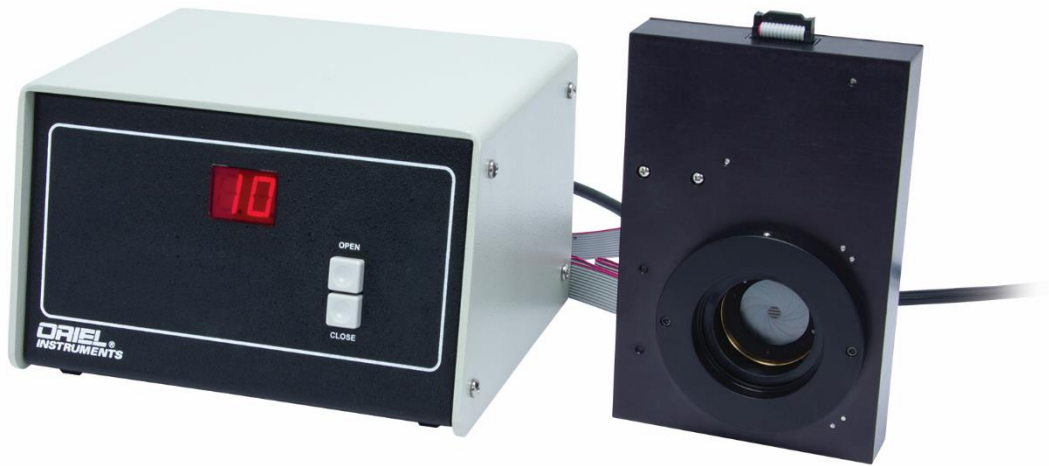


# Model 62280 & 62281

## MOTORIZED IRIS DIAPHRAGM SYSTEMS



User's Manual

**ORIEL**  
**INSTRUMENTS**

A Newport Corporation Brand

 Newport

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90075914, M62280, Rev B

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## 1. INTRODUCTION TO THE MOTORIZED IRIS SYSTEMS

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The Oriel models 62280 and 62281 Motorized Iris Diaphragm Systems provide continuous control of an adjustable aperture. The system consists of the aperture, a control box, and the appropriate cables.

The aperture size can be controlled remotely by a PC using either IEEE-488 (GPIB) or RS-232 interfaces, or manually, via the control box front panel or the 74009 hand controller accessory.

The aperture adjustment range for each model is listed in the specifications table found in Section 6.

## 2. UNPACKING AND SETTING UP

---

Carefully unpack the Motorized Iris Diaphragm System. You should save the packaging in case you need to transport or ship the instrument.

Inside the package you should find the following:

- Motorized Iris Diaphragm
- Control Box
- 8 ft (2.4 m) long cable to connect the two components
- Motorized Iris Utility Software CD
- Power cord appropriate for your country
- Manual included in the Software CD

### 3. GETTING STARTED

#### 3.1 CONFIGURING THE IRIS

You may operate the Motorized Iris System manually, via the control box front panel, or remotely from a PC. We describe both methods of operation, but first cover filter insertion. Even if you are going to operate the system remotely, we recommend that you first test it manually.

##### Mounting the Motorized Iris Head

You can mount the Motorized Iris Head one of two ways: directly to an Oriel component (i.e. light source or monochromator) via either of its male or female 1.5 Inch Series flange, or to an optical rod.

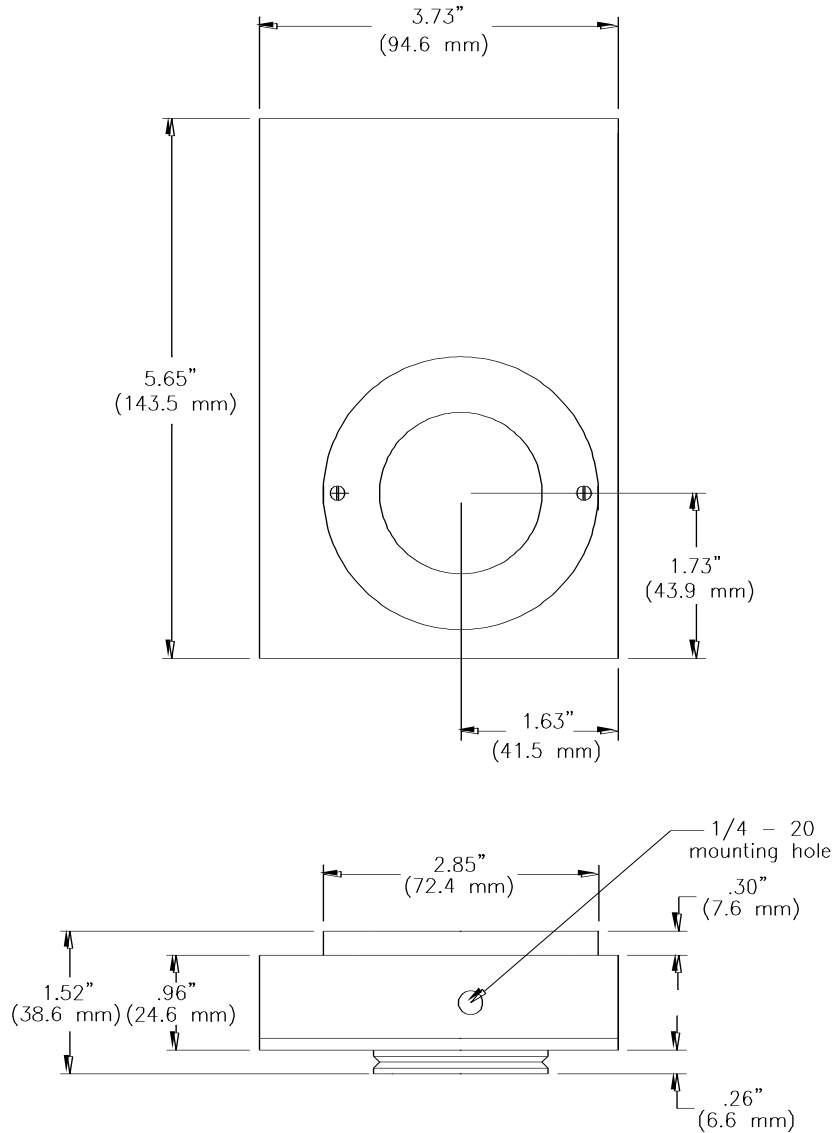


Figure 1: Dimensional diagram of the 62280/62281 Motorized Iris Head.

## Flange Mounting

Figure 1 shows a diagram of the Motorized Iris Head. One side has a 1.5 Inch Series Female flange; the other side has a 1.5 Inch Series male flange. You can mount the wheel directly to an Oriel instrument or component via one of the flanges. To flange mount the Motorized Iris Head:

- Identify the flange of the Oriel component/instrument to which you will mate the Motorized Iris Head.
- If you are using the Motorized Iris Head's female flange, loosen the set screws on this flange. If you are using the Motorized Iris Head's male flange, loosen the set screws on the mating component's female flange.
- Fit the flanges of the two components together and tighten the set screws.

## Rod Mounting

Rod mounting lets you place the Motorized Iris Head almost anywhere on an optical table with ¼-20 hole pattern. To rod mount the Motorized Iris Head just attach a ¼-20 optical rod and insert the rod into a rod holder, which should already be secured to your optical table or baseplate

### 3.2 SETTING UP FOR MANUAL OPERATION OF THE MOTORIZED IRIS SYSTEM

1. Make certain the Motorized Iris Controller power switch is off (the switch is located on the back panel of the control box); connect the 12-pin cable between the Motorized Iris Head and the Control Box.
2. Plug the female end of the power cord into the receptacle marked AC Input on the back of the control box, and the male end into your wall outlet.
3. NOTE: the 62280/62281 power supply is "universal input" so that mains voltage selection is not required. If the power entry module has a voltage selector, use the 115 volt setting.
4. Turn the control box on; the motorized iris will home and then automatically return to the last position before power off; the position will be displayed on the LED.
5. Depress the "OPEN" button to open the Iris aperture, the Iris will slew as long as the button is held down. Pressing the "CLOSE" button will slew in the close direction.

**NOTE:** The display is updated with the percent open position in 1% increments, but the drive system has finer resolution. Therefore a quick press of either button will adjust the iris, but may not be enough to advance the display one percentage point. The position can be monitored and controlled via computer or the hand controller with 0.01% resolution.

### 3.3 SETTING UP FOR COMPUTER OPERATION OF THE MOTORIZED IRIS SYSTEM

1. Make certain the Motorized Iris Controller power switch is off (the switch is located on the back panel of the control box); connect the 12-pin cable between the Motorized Iris Head and the Control Box.
2. Connect the remote device, a PC via IEEE-488 or RS-232 or the Oriel 74009 hand controller, to the appropriate connector on the 62280/62281 rear panel.
3. Plug the female end of the power cord into the power cord receptacle, and the male end into your wall outlet.
4. **NOTE:** The 62280/62281 power supply is "universal input" so that mains voltage selection is not required. If the power entry module has a voltage selector, use the 115 volt setting.
5. Turn the control box on; the motorized iris will automatically home and return to the last position before power off; the position will be displayed on the LED.

6. Refer to the Sections 0 and 0 for details on computerized operation. The controller LED will display the wheel position.

**NOTE:** The display is updated with the percent open position in 1% increments, but the drive system has finer resolution. The position can be monitored and controlled via computer or the hand controller with 0.01% resolution.

### 3.4 GETTING STARTED WITH IEEE-488 COMMUNICATIONS

IEEE-488 communication (also called GPIB) offers the greatest versatility for integrating your 62280/62281 Motorized Iris into a larger system since you may connect up to 30 different devices to the same controller card. However, this versatility brings with it some complication in setting up each device.

Newport designs all of its IEEE-488 products to be completely compatible with National Instruments' GPIB controller cards. Likewise, most of our IEEE-488 software requires National Instruments' device drivers to run on your PC. We strongly recommend National Instruments' controller cards. Since there are differences between IEEE-488 implementations among the various manufactures, we cannot support them all. Therefore, Newport will only provide communication and software support for IEEE-488 systems that use National Instruments controller cards.

**NOTE:** At power on, after a two second startup delay the motorized iris will be re-homed then repositioned to wherever the percent open position was at power down. The homing sequence involves finding the fully open position then the fully closed position. At that point the iris size has been determined and the iris is positioned to its previous opening size. The 62280/62281 controller determines whether it communicates via RS232 or IEEE-488 by whichever port receives the first command after power on. It cannot switch ports until it is powered down and up again.

#### Physical Connections

First, install your National Instruments control card and software in your PC computer. Run their diagnostic tools to make sure the card is working properly.

Next, be sure the 62280/62281 controller power switch is off; then attach your IEEE-488 cable to the appropriate connector on the controller's back panel. Attach the other end to the National Instruments' control card and secure the screws on both sides. Now turn on the 62280/62281 controller. In order to limit possible address conflicts, we recommend that you turn off all other IEEE-488 instruments while checking your 62280/62281 for the first time. Note: the 62280/62281 default GPIB primary address is 4.

#### Verify Communications

Check your IEEE-488 communications by running the Motorized Iris Utility Software application. The software installation and operating instructions are in Section 0.

If you cannot get a response from your 62280/62281 at this point you may have a connection problem. Check all the cables (including the line cord), make sure the 62280/62281 controller is turned on, and make sure the Hand Controller is off. PLEASE NOTE: if the Hand Controller is active (the display is lit and information fills the screen), you cannot command the 62280/62281 via either RS-232 or IEEE-488. Press the LOCAL key on the Hand Controller to deactivate it, allowing PC communications.

**PLEASE ALSO NOTE:** The 62280/62281 controller selects either RS-232 or IEEE-488 communications based upon the first command received after power up. When you send an IEEE-488 command, or initialize your IEEE-488 software, the RS-232 link will be ignored until the 62280/62281 controller power is turned off and on again.

## Low Level Communications

The Motorized Iris Utility Program is a LabVIEW application built on National Instruments' IEEE-488 device drivers. In some cases, it may be desirable to send commands directly to the 62280/62281 through the National Instruments Interactive Control or through another simple interface. To establish low level communications with the 62280/62281 controller you will have to first open the device. Using the National Instruments' drivers the correct command is: `ibdev 0 4 0 13 0 0x140a`.

The timeout code "13" allows 30 seconds to read responses back from the 62280/62281 controller. In most cases 300 msec is sufficient (timeout code 10), however, the longer period guarantees success on all commands. The end of string code "0x140a" terminates a read when the linefeed character is received from the instrument. All 62280/62281 responses end with carriage return and linefeed. Likewise, all messages sent to the 62280/62281 controller must end with the linefeed character.

Refer to the detailed discussion of Section 0 FUNCTIONS AND CONTROLS for further information on direct low level communications, message syntax, and parameters.

## 3.5 GETTING STARTED WITH RS-232 COMMUNICATIONS

RS-232 connections are a simple means of communicating between your PC and your instruments. However, you are limited in that each instrument must have its own dedicated communication port at the computer. Most PC's come standard with COM1 and COM2, although COM1 is occasionally used by a serial mouse. Additional communication port hardware can be added and the corresponding drivers must be added to your Windows™ software. Please review your computer setup to determine what physical connections are available to you. Again, due to the variety of hardware and software options that are available Newport cannot provide support for PC configuration.

**NOTE:** At power on, after a two second startup delay the motorized iris will be re-homed then repositioned to wherever the percent open position was at power down. The homing sequence involves finding the fully open position then the fully closed position. At that point the iris size has been determined and the iris is positioned to its previous opening size. The 62280/62281 determines whether it communicates via RS232 or IEEE-488 by whichever port receives the first command after power on. It cannot switch ports until it is powered down and up again.

### Physical Connections

First, make sure that the COM port you would like to use for the 62280/62281 is recognized by Windows™ and is working properly.

Next, be sure the 62280/62281 controller power switch is off; then attach your RS-232 cable to the appropriate connector on the back panel. Attach the other end to the COM port connection on your PC. Note that RS-232 cables come in two types: modem and null-modem. The modem cable is a pin-to-pin

cable. That is, each pin at one end connects directly to the corresponding pin at the other end: 1 to 1, 2 to 2, 3 to 3, etc. The modem cable is the correct cable for communicating with the 62280/62281.

Now turn on the 62280/62281 controller. You are ready to communicate with the instrument. The hardware communication parameters, including baud rate, are fixed inside the 62280/62281 controller, so setup your COM port as follows:

Baud Rate:	9600
Data Bits:	8
Parity:	None
Stop Bits:	1
Flow Control:	None

### **Verify Communications**

Check your RS-232 communications by running the Motorized Iris Utility Software application. The software installation and operating instructions are in Section 0

If you cannot get any response from your 62280/62281 at this point you may have a connection problem. Check all the cables (including the line cord), make sure the 62280/62281 controller is turned on, and make sure the Hand Controller is off. PLEASE NOTE: if the Hand Controller is active (the display is lit and information fills the screen), you cannot command the 62280/62281 via either RS-232 or IEEE-488. Press the LOCAL key on the Hand Controller to deactivate it, allowing PC communications. PLEASE ALSO NOTE: the 62280/62281 controller selects either RS-232 or IEEE-488 communications based upon the first command received after power up. When you send an RS-232 command, or initialize your RS-232 software, the IEEE-488 link will be ignored until the 62280/62281 controller power is turned off and on again.

### **Low Level Communications**

In some cases, it may be desirable to send commands directly to the 62280/62281 through a terminal emulation program, such as the HyperTerminal™ provided with Windows™. Once your terminal program is open and running you will have to first select a COM port and configure it according to the parameters listed on the previous page of this manual (9600, 8, N, 1, None). Additionally, you should set the terminal to "Send line ends with line feeds". There is no reason to turn on the local echo since the 62280/62281 will automatically echo each character as it is typed. All 62280/62281 responses end with carriage return and linefeed. Likewise, all messages sent to the 62280/62281 must end with the linefeed character.

Again, refer to the detailed discussion of Section 0 FUNCTIONS AND CONTROLS for further information on direct low level communications, message syntax, and parameters.

## **3.6 THE ORIEL MODEL 74009 HAND CONTROLLER**

The optional 74009 Hand Controller is intended for use with Oriel's Cornerstone series monochromators and MS260i spectrographs, but is also a fast and easy way to begin immediate communications with the 62280/62281. There is no need to purchase a computer and set up software. The Hand Controller is a convenient option in locations where security is an issue.



There is no need to memorize commands or key sequences. The 24 keys are clearly labeled with functions like “Shutter”, “Go Wave” and “Filter”. The display provides information about the monochromator’s grating selection, active filter position, current wavelength, and shutter status. Using the Hand Controller provides access to nearly all the functionality of the monochromators and spectrographs. It comes with a 14-foot [4.3 meter] long cable.

### **Physical Connections**

Please note: None of the 62280/62281 accessories are designed to be connected or disconnected with power on. Always turn off the instrument using the power switch on the back panel before you connect or remove the motorized iris or any communications cable (including the Hand Controller).

To get started with the 74009 Hand Controller, simply connect the black communications cable by snapping the RJ-11 connector into the receptacle on top of the hand controller and snapping the other end into the matching connector on the back panel of your 62280/62281 controller.

### **Activating the Hand Controller**

With the Hand Controller connected, turn on power to the 62280/62281 controller. You will see a horizontal cursor in the upper left corner of the display. Press the LOCAL key to activate communications through the Hand Controller. Please note that if the Hand Controller is active (the display is lit and information fills the screen), you cannot command the 62280/62281 via either RS-232 or IEEE-488. Press the LOCAL key again to deactivate the Hand Controller, allowing PC communications.

### **Green “Shifted” Keys**

Some keys are divided into top and bottom halves. The function for the top half is called a “shifted” function. To activate these commands press the SHIFT key in the bottom left corner and then press the function key.

### **Entering Parameters- the Numeric Keypad**

Many of the 62280/62281 commands require a numeric parameter. First, press the function key for your command. The bottom line of the display will then show an abbreviated form of the command and the current parameter. There is no need to erase this number; simply typing the first key for your desired parameter will overwrite the current value. To execute the command press the ENTER key in the bottom right corner.

While entering parameters, if you mistype one digit press SHIFT and then DEL (above the decimal point in the numeric keypad); this will move backward one display position and delete that character. You can also press the Abort key to cancel the operation, or simply wait ten (10) seconds, and the display will terminate the entry automatically.

### **Key Reference (From top of the controller to the bottom, left to right) for 62280/62281 Commands Only**

*ABORT-* If you accidentally press a function key or enter a bad parameter you may press the ABORT key to clear that command before it executes. The ABORT key has no effect on most functions once the command is executed (by pressing ENTER). However, wavelength motion will stop immediately upon ABORT and the display will update to show the wavelength where motion was halted.

*Step Down* - Slews the iris in the close direction, press ABORT to stop the slewing. The 62280/62281 will halt slewing automatically when it hits the fully closed limit of 0%. Press SHIFT and then STEP DOWN to close the iris aperture to a specified percent. Press Shift Step Down, then type the number indicating the desired closing percentage. Press ENTER to execute the move. For this command the 62280/62281 will backlash compensate for moves in the open direction.

*Step Up* - Slews the iris in the open direction, press ABORT to stop the slewing. The 62280/62281 will halt slewing automatically when it hits the fully open limit of 99%. Press SHIFT and then STEP UP to open the iris aperture to a specified percent. Press Shift Step Up, then type the number indicating the desired opening percentage, then finally press ENTER to execute the move. For this command the 62280/62281 will backlash compensate for moves in the close direction.

*LOCAL*- Use this key to toggle between “local” communications through the Hand Controller and “remote” communication with a computer. Please note that if you press LOCAL to activate the Hand Controller (the display is lit and information fills the screen), you also lock out PC communications. You cannot command the 62280/62281 via either RS-232 or IEEE-488 while the Hand Controller is active.



Figure 2: 74009 Hand Controller Keypad

## 4. FUNCTIONS AND CONTROLS

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### 4.1 COMMAND AND QUERY SYNTAX

For the purposes of this discussion we will divide communications with the instrument into two parts. First, the messages that you send to the 62280/62281 will be called "Statements". Second, the messages that you receive from the 62280/62281 will be called "Responses". When communicating with the 62280/62281 controller you will use two types of Statements: "Commands" and "Queries". A Command causes some physical action or sets an internal parameter. Queries ask some question of the instrument and automatically return a Response. Fundamentally, the syntax is the same for all messages.

#### Termination

Both Statements and Responses end with a carriage return (ASCII character code 13 decimal) and linefeed (ASCII character code 10 decimal). This manual will show the termination as [cr][lf]. Please note you may find it more convenient to end Statements with only the linefeed [lf]; this is also acceptable.

#### Capitalization

Statements may be sent in upper case, in lower case, or in any combination of the two. Responses will always be returned in upper case. For clarity throughout this manual, Statements will be shown in upper case (ie.STATEMENT) and Responses will be shown in upper case italics (ie. *RESPONSE*)

#### Parameters

Some Statements will require a parameter. In this manual numeric parameters will be shown as "XX"; each X will fill a numeric position and decimals are used to indicate where floating point number should be expected. Numeric notation is not strict and integers can be substituted for floating point numbers as desired. There are some specific cases where alpha-numeric values or exponential notation may be required; these special Statements will be detailed in the Sections that follow.

### 4.1.1 STANDARD MODE

Most normal communication with the 62280/62281, especially communication handled inside closed application software, is done in Standard Mode. This mode follows all of the rules on the previous page plus there are some additional features for error handling.

The 62280/62281 controller stores errors internally in a status byte and an error byte, where each bit has a specific meaning. This structure should be very familiar to programmers working with IEEE-488 communication since the 62280/62281 status and error bytes are based on definitions in the 488.2 IEEE standard. Details of the status and error bytes can be found in this manual under Section 0 ERROR CODES. For now, we will simply cover the syntax necessary to send Statements and receive Responses in this communication mode.

In all cases, Statements must be terminated properly with [lf] for the 62280/62281 to take any action. Statements that are not understood or parameters that are unacceptable will generate an error code in the status byte, i.e. status byte 0. Moreover, the status byte must be explicitly read, it is not returned after general Statements. Correct Statements are handled as follows:

#### Commands

Under RS-232, Statements are echoed back to the PC. Thus, after sending a Command you should read back this echo. There is no further response to a Command.

For example: Send: %OPEN 50.40[lf] Response: %OPEN 50.40[lf]

Under IEEE-488, there is no echo. There is no automatic response to a Command.  
For example: Send: %OPEN 50.40[lf] Response: {none}

### Queries

Under RS-232, Statements are echoed back to the PC. Additionally, there will be an explicit response to that query. Thus, after sending a Query you should read back the echo and the answer together.  
For example: Send: %OPEN?[lf] Response: %OPEN?[lf]50.40[cr][lf]

Under IEEE-488, there is no echo. Thus, you can read back the Response by itself.  
For example: Send: %OPEN?[lf] Response: 50.40[cr][lf]

## 4.1.2 HANDSHAKING MODE

This communications mode is most useful for methods development, troubleshooting, or in the early stages of programming. Use the command: "HANDSHAKE 1[lf]" to put the 62280/62281 into Handshake Mode. This mode follows the command syntax listed at the start of Section 0 in this manual, but in addition every Statement is acknowledged. The "handshake" that you receive is the status byte.

The 62280/62281 stores errors internally in a status byte and an error byte, where each bit has a specific meaning. This structure should be very familiar to programmers working with IEEE-488 communication since the 62280/62281 status and error bytes are based on definitions in the 488.2 IEEE standard. Details of the status and error bytes can be found in this manual under Section 0 ERROR CODES. For now, we will simply cover the syntax necessary to send Statements and receive Responses.

In all cases, Statements must be terminated properly with [lf] for the 62280/62281 to take any action. Statements that are not understood or parameters that are unacceptable will generate an error code in the status byte, i.e. status byte 0. This status byte will be reported immediately if it contains an error, otherwise the status byte "00" will be returned upon completion of the Statement. Correct Statements are handled as follows:

### Commands

Under RS-232, Statements are echoed back to the PC. Thus, after sending a Command you should read back this echo. Additionally, the status byte is reported when the action is complete.  
For example: Send: %OPEN 50.40lf] Response: %OPEN 50.40[lf]  
00[cr][lf]

Under IEEE-488, there is no echo. The only response will be the status byte.  
For example: Send: %OPEN 50.40[lf] Response: 00[cr][lf]

### Queries

Under RS-232, Statements are echoed back to the PC. Additionally, there will be an explicit response to that query, and the status byte. Thus, after sending a Query you should read back a 3 part answer.  
For example: Send: %OPEN?[lf] Response: %OPEN?[lf]50.40[cr][lf]  
00[cr][lf]

Under IEEE-488, there is no echo. Thus, you will read back the Response and the status byte.  
For example: Send : %OPEN?[lf] Response: 50.40[cr][lf]  
00[cr][lf]

## 4.2 COMMAND REFERENCE TABLE

Command	Query	Hand Ctrl Key
ABORT		[ABORT]
ADDRESS XX		
%OPEN XX.XX	%OPEN?	[SHIFT Step Up] [SHIFT Step Down]
SLEWOPEN		[Step Up]
SLEWCLOSE		[Step Down]
STOP		[ABORT]
HANDSHAKE X	HANDSHAKE?	
IDN?	INFO?	[LOCAL]
	STB?	
	ESR?	

## 4.3 62280/62281 COMMANDS

**%OPEN xx.xx** {%OPEN?} [SHIFT Step Up]  
[SHIFT Step Down]

Opens the iris aperture to the specified percent xx.xx. The query returns the present aperture size as the percent open. The handshake mode can be used with this command. For this command the 62280/62281 will backlash compensate for moves in the close direction.

**SLEWOPEN** [Step Up]

Slews the iris in the open direction. If the 62280/62281 receives the STOP or ABORT commands the slewing is halted. The query %OPEN? can be used during slewing to determine the present position but is asynchronous so once stopped the query should be sent again to accurately determine the position. The handshake mode is not applicable since the slew is user terminated. The 62280/62281 will halt slewing automatically when it hits the fully open limit of 99%.

**SLEWCLOSE** [Step Down]

Slews the iris in the close direction. If the 62280/62281 receives the STOP or ABORT commands the slewing is halted. The query %OPEN? can be used during slewing to determine the present position but is asynchronous so once stopped the query should be sent again to accurately determine the position. The handshake mode is not applicable since the slew is user terminated. The 62280/62281 will halt slewing automatically when it hits the fully closed limit of 0%.

**STOP** [ABORT]

Halts the 62280/62281 slewing that was initiated via the SLEWOPEN and SLEWCLOSE commands.

**ABORT** [ABORT]

Simply stops any command in process.

**\*IDN?** {INFO?} [LOCAL]

Query for basic instrument information generates the same response as the GPIB specific \*IDN? That response is "*Oriel Instruments, Model 62280 Motorized Iris, SNXXX,VYY.YY.*" where XXX is the unit's serial number and YY.YY.YY is the version number for internal firmware. This information is displayed for 3 seconds when [LOCAL] is pressed on the Hand Controller.



ESR Hex code/ bit	
80 / bit7	The 62280/62281 has been power on reset since last read
20 / bit5	The 62280/62281 has received an illegal command
10 / bit4	The 62280/62281 had a problem with the motorized iris

## 5. MOTORIZED IRIS UTILITY SOFTWARE

---

The Motorized Iris Utility Software is a program written in National Instruments LabVIEW language. To load and run the software you should have a Pentium based PC compatible computer with 16MB of RAM, Windows 95/98/NT, and CD-ROM drive.

The program controls the iris aperture via RS232 or GPIB.

### Software installation

1. Put the Utility Software CD-ROM into your computer drive.
2. Open the Control Panel window from Start/Settings menu and select the Add/Remove Programs icon.
3. Click the 'Install' button.
4. Continue the installation by following the instructions on the screen. The 'Run Installation Window' will have a text box named 'Command line for installation program' and a 'Browse' button. If the text box doesn't point to the installation setup then use the browser to locate the Setup.exe on the CD-ROM. Click 'Finish' to proceed with the installation process. S
5. The program icon is placed in the Windows Start Menu under Programs: Iris. The executable file can be found in the C:\ProgramFiles\Oriol Instruments\Iris directory.

**<< IMPORTANT NOTE >>**

For the software to send proper numeric format to the instrument, Windows Regional Settings in Control Panel must be set to English (United States).

### Running the program

**<< IMPORTANT NOTE >>**

**Before you launch the program make sure the Motorized Iris Controller is connected to your PC. For RS232 communication use COM port and for IEEE-488 connect the Iris Controller to the GPIB controller card.**

- Select the communication type. When the program is started for the first time, the 'Select Communication protocol' dialog window will pop up. First select the communication type by clicking one of the two radio buttons, and then set the COM port number (1 or 2) or GPIB

address (4 default). Click the 'OK' button to activate the communication.



*Figure 3 : Setup Communication dialog window.*

PLEASE NOTE: The controller will always configure itself for the communication type based upon the first command received after power up.

- If you receive the message "Iris Communication Error!" try the following:
  - power down and up the Iris Controller
  - check the physical connection
  - make sure the COM Port or GPIB address is correct.

### **Aperture control**

The Motorized Iris Utility Program displays the current aperture reduction. The aperture range is 0% to 99.99%.

The OPEN and CLOSE buttons will start motion increasing or decreasing the Iris opening. Click the STOP button to stop the motion. You can also stop the motion by clicking the (CLOSE or OPEN) button which is in the 'pressed' position.

It is possible to change the motion direction by selecting the 'opposite' button when the motor is running (i.e. click the CLOSE button to change the 'opening diaphragm' mode to 'closing diaphragm' mode).



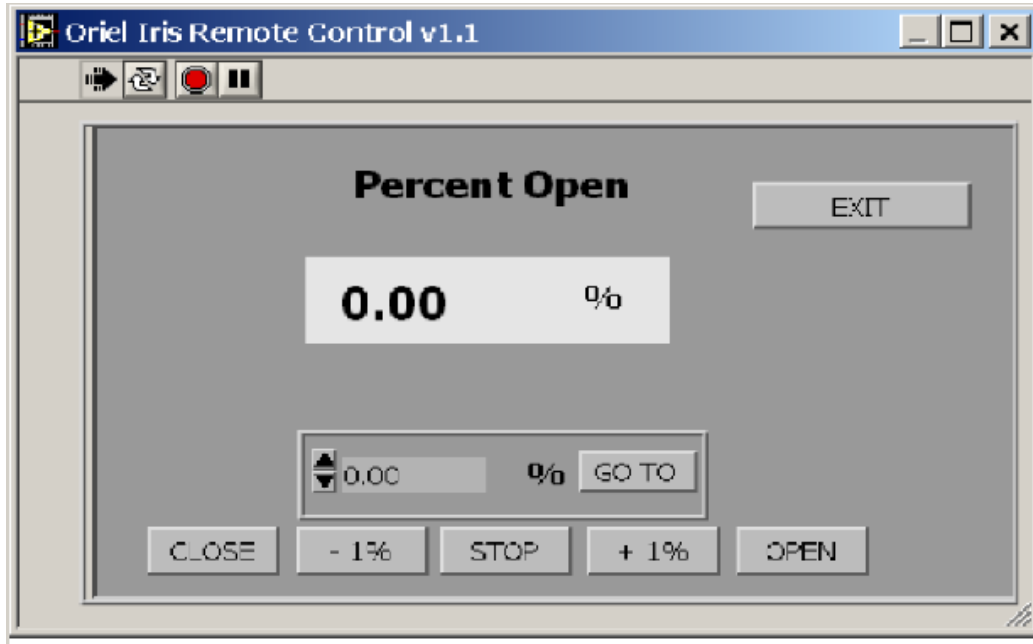


Figure 4: Motorized Iris Utility Software user Interface

Use the –1% or +1% buttons to close and open the Iris aperture in 1% increments.

If you know your aperture setting use the GO TO feature.

The program will update the aperture display in response to the hand controller or manual control of the Iris.

## 6. SPECIFICATIONS

<b>Motorized Iris Head</b>	
Aperture size:	
62280	0.08" to 1.4" (2 mm to 35 mm)
62281	0.04" to 1.0" (1 mm to 25 mm)
Input/output ports	1.5 Inch Series male and female flange, 1 each
Dimensions (W x D x H)	5.65 x 3.73 x 1.52 inches (143 x 95 x 38 mm)
Mounting	By input/output flange or rod mount (1/4-20 tapped hole on bottom)
<b>Control Box</b>	
Dimensions (W x D x H)	7.0 x 6.0 x 4.5 inch (178 x 152 x 114 mm)
Display	2 digits LED; percent of aperture diameter open 1% resolution
Controls	OPEN and CLOSE pushbuttons

Control Resolution	0.01% read by computer / hand controller
Connectors:	
Motorized Iris	12 pin male (2 x 6)
IEEE-488 (GPIB)	standard
RS-232	9 pin D-sub female
Hand controller	RJ-12 female
Mains	IEC
Operating voltage	95 - 264 VAC, 50/60 Hz
Fuses:	2 x ½ A @ 95-132 VAC
	2 x ¼ A @ 190-264 VAC

## 7. REPLACING FUSES

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The fuse box is located on the back panel of the control box. The 62280/62281 uses two 0.5 A slow-blow fuses (for 115 VAC operation) or 0.25 A time delayed fuses (for 230 VAC operation). The fuse box will accommodate either 5 x 20 mm or 1.25 x 0.25" fuses.

To replace the fuses:

- Use the flat tip of a screwdriver to pop open the black cover of the fuse box (located just above the power cord receptacle).
- Pull out the red fuse box, taking note of the position of the fuses and the orientation of the fuse box.
- Remove the old fuses and insert the new ones in the same position as the old.
- Replace the fuse box and cover. Ensure that you replace the fuse box in the same orientation as when it was removed.

**NOTE:** the 62280/62281 power supply is "universal input" so that mains voltage selection is not required. If the power entry module has a voltage selector, use the 115 volt setting.

## 8. WARRANTY AND SERVICE

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### CONTACTING ORIEL INSTRUMENTS

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Oriel Instruments belongs to Newport Corporation's family of brands. Thanks to a steadfast commitment to quality, innovation, hard work and customer care, Newport is trusted the world over as the complete source for all photonics and laser technology and equipment.

Founded in 1969, Newport is a pioneering single-source solutions provider of laser and photonics components to the leaders in scientific research, life and health sciences, photovoltaics, microelectronics, industrial manufacturing and homeland security markets.

Newport Corporation proudly serves customers across Canada, Europe, Asia and the United States through 9 international subsidiaries and 24 sales offices worldwide. Every year, the Newport Resource catalog is hailed as the premier sourcebook for those in need of advanced technology products and services. It is available by mail request or through Newport's website. The website is where one will find product updates, interactive demonstrations, specification charts and more.

To obtain information regarding sales, technical support or factory service, United States and Canadian customers should contact Newport Corporation directly.

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Repair Service: [rma.service@newport.com](mailto:rma.service@newport.com)

Customers outside of the United States must contact their regional representative for all sales, technical support and service inquiries. A list of worldwide representatives can be found on Newport's website: <http://www.newport.com>.

## REQUEST FOR ASSISTANCE / SERVICE

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Please have the following information available when requesting assistance or service:

Contact information for the owner of the product.  
Instrument model number (located on the product label).

Product serial number and date of manufacture (located on the product label).  
Description of the problem.

To help Oriel's Technical Support Representatives diagnose the problem, please note the following:

- Is the system used for manufacturing or research and development?
- What was the state of the system right before the problem?
- Had this problem occurred before? If so, when and how frequently?
- Can the system continue to operate with this problem, or is it non-operational?
- Were there any differences in the application or environment before the problem occurred?

## REPAIR SERVICE

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This section contains information regarding factory service for this product. The user should not attempt any maintenance or service of the system beyond the procedures outlined in this manual. This product contains no user serviceable parts other than what is noted in this manual. Any problem that cannot be resolved should be referred to Oriel Instruments.

If the instrument needs to be returned for service, a Return Material Authorization (RMA) number must be obtained prior to shipment to Oriel Instruments. This RMA number must appear on both the shipping container and the package documents.

Return the product to Oriel Instruments, freight prepaid, clearly marked with the RMA number and it either will be repaired or replaced at Oriel's discretion.

Oriel is not responsible for damage occurring in transit. The Owner of the product bears all risk of loss or damage to the returned Products until delivery at Oriel's facility. Oriel is not responsible for product damage once it has left the facility after repair or replacement has been completed.

Oriel is not obligated to accept products returned without an RMA number. Any return shipment received by Oriel without an RMA number may be reshipped by Newport, freight collect, to the Owner of the product.

## NON-WARRANTY REPAIR

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For Products returned for repair that are not covered under warranty, Newport's standard repair charges shall be applicable in addition to all shipping expenses. Unless otherwise stated in Newport's repair quote, any such out-of-warranty repairs are warranted for ninety (90) days from date of shipment of the repaired Product.

Oriel will charge an evaluation fee to examine the product and determine the most appropriate course of action. Payment information must be obtained prior to having an RMA number assigned. Customers may use a valid credit card, and those who have an existing account with Newport Corporation may use a purchase order.

When the evaluation had been completed, the owner of the product will be contacted and notified of the final cost to repair or replace the item. If the decision is made to not proceed with the repair, only the evaluation fee will be billed. If authorization to perform the repair or provide a replacement is obtained, the evaluation fee will be applied to the final cost. A revised purchase order must be submitted for the final cost. If paying by credit card, written authorization must be provided that will allow the full repair cost to be charged to the card.

## **WARRANTY REPAIR**

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If there are any defects in material or workmanship or a failure to meet specifications, notify Oriel Instruments promptly, prior to the expiration of the warranty.

Except as otherwise expressly stated in Oriel's quote or in the current operating manual or other written guarantee for any of the Products, Oriel warrants that, for the period of time set forth below with respect to each Product or component type (the "Warranty Period"), the Products sold hereunder will be free from defects in material and workmanship, and will conform to the applicable specifications, under normal use and service when correctly installed and maintained. Oriel shall repair or replace, at Oriel's sole option, any defective or nonconforming Product or part thereof which is returned at Buyer's expense to Oriel facility, provided, that Buyer notifies Oriel in writing promptly after discovery of the defect or nonconformity and within the Warranty Period. Products may only be returned by Buyer when accompanied by a return material authorization number ("RMA number") issued by Oriel, with freight prepaid by Buyer. Oriel shall not be responsible for any damage occurring in transit or obligated to accept Products returned for warranty repair without an RMA number. Buyer bears all risk of loss or damage to the Products until delivery at Oriel's facility. Oriel shall pay for shipment back to Buyer for Products repaired under warranty.

### WARRANTY PERIOD

All Products (except consumables such as lamps, filters, etc.) described here are warranted for a period of twelve (12) months from the date of shipment or 3000 hours of operation, whichever comes first.

Lamps, gratings, optical filters and other consumables / spare parts (whether sold as separate Products or constituting components of other Products) are warranted for a period of ninety (90) days from the date of shipment.

### WARRANTY EXCLUSIONS

The above warranty does not apply to Products which are (a) repaired, modified or altered by any party other than Oriel; (b) used in conjunction with equipment not provided or authorized by Oriel; (c) subjected to unusual physical, thermal, or electrical stress, improper installation, misuse, abuse, accident or negligence in use, storage, transportation or handling, alteration, or tampering, or (d) considered a consumable item or an item requiring repair or replacement due to normal wear and tear.

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## **LOANER / DEMO MATERIAL**

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Persons receiving goods for demonstrations or temporary use or in any manner in which title is not transferred from Newport shall assume full responsibility for any and all damage while in their care, custody and control. If damage occurs, unrelated to the proper and warranted use and performance of the goods, recipient of the goods accepts full responsibility for restoring the goods to their original condition upon delivery, and for assuming all costs and charges.

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