



## **Intellus Web Server Manual**



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## **Introduction**

The Intellus Web Server (IWS) was designed to provide you with a convenient and easy way to program and monitor the Intellus Ultra controller provided with your chamber. The web server can be accessed from any computer running Internet Explorer 6.0 or later via an Ethernet network. It can also be accessed from a Treo™ 700WX mobile device running Windows Mobile 5 manufactured by Palm®. No additional software is necessary.

Please feel free to contact Percival Scientific with any questions you may have about this manual or using the Intellus Web Server by calling 1-800-695-2743 or 515-465-9363 or by sending e-mail to [service@percival-scientific.com](mailto:service@percival-scientific.com).

## **Securing the Intellus Web Server**

Network security is a critical issue for any network. Be sure to work with your network administrator to ensure that you follow best security practices to ensure a secure network environment. Here are some items to consider when installing Intellus Web Servers on any network.

- Whenever possible, use private IP addresses and separate the Intellus Web Server network from the business network.
- Access to the Intellus Web Server from the Internet should be indirect, going through an access point to the business network on the way.
- If external access is required, then have a single point of access to the Intellus Web Server network. Allow access to the Intellus Web Server network using a device capable of creating a virtual private network (VPN). Data will not be encrypted between the computer and Intellus Web Server unless a VPN is used.
- External access points should be protected by a firewall.
- External access points should be protected by a layer 3 switch or router.

## **Intellus Web Server Setup**

Before you can communicate with the web server(s), each web server will have to be assigned a unique IP address.

There are two methods for assigning IP information to the Intellus Web Server. You can directly access the IWS by connecting a computer to the chamber's Ethernet port or you can enter the IWS IP configuration information using the Intellus Ultra controller. It is recommended that you assign the IP information using a computer attached to the chamber's Ethernet port.

For information on configuring the IP information using a computer connected to the IWS please refer to the sections titled **Connecting to the Intellus Web Server** and **Modifying TCP/IP Setup Information** below.

The IWS IP information can be assigned using the Intellus Ultra controller by following the steps below:

1. On the Intellus Ultra controller, hold both the **ENTER** and **▲** keys simultaneously for approximately four seconds. The controller will prompt you to enter the security level password. The default password is '1111'. If the first character of the password is not flashing, press the **ENTER** key. Use the **▲** and **▼** keys as necessary to change characters. Press the **PROG** key to advance to the next character. You may repeatedly press the **PROG** key to scroll through and review the password. Pressing the **PROG** key at the last character will cause the character selection to wrap around. Press the **ENTER** key when the password '1111' has been successfully entered.
2. Press the **▼** key until "IWS IP Method" appears in the display. Press the **ENTER** key, use the **▲** or **▼** keys as necessary to select the desired IP method and then press the **ENTER** key again. Refer to the section titled **IP Method** below for more information.
3. Press the **▼** key. You are prompted to enter the fixed IWS IP address. You are required to enter an address if the IP method you selected was "Fixed". It is highly recommended that you enter a unique fixed IP address even if you are using the "DHCP/Auto/Fixed" or "DHCP/Fixed methods". This address will be used if a DHCP server cannot be found if the IP method is set to "DHCP/Fixed". This address will be used if an auto IP address cannot be assigned when the IP method is set to "DHCP/Auto/Fixed" or "Auto/Fixed". To enter the fixed IP, press the **ENTER** key. Use the **▲** or **▼** keys as necessary to change each number of the IP address and press the **PROG** key to advance to the next number. Repeatedly pressing the **PROG** key advances to the next number. If you press the **PROG** key while on the last number, you will be taken back to the first number. Press the **ENTER** key when you have entered the IP address.
4. Press the **▼** key. "IWS Subnet Mask" should appear in the display. This is the subnet mask entry for the IWS. Press the **ENTER** key, use the **▲** or **▼** keys as necessary to select the correct subnet mask for the IWS and then press the **ENTER** key again.
5. Press the **▼** key. "IWS Default Gateway" should appear in the display. This is the default gateway entry for the IWS. Press the **ENTER** key. Use the **▲** or **▼** keys as necessary to change each number of the gateway address and press the **PROG** key to advance to the next number. Repeatedly pressing the **PROG** key advances to the next number. If you press the **PROG** key while on the last number, you will be taken back to the first number. Press the **ENTER** key when you have entered the gateway address.
6. Press the **▼** key. "Set IWS IP Info" should appear in the display. To assign the IP information entered above press the **ENTER** key. Use the **▲** and **▼** keys as

necessary to change the “Set IWS IP Info” setting to “Yes” and then press the **ENTER** key.

### **IMPORTANT!**

You will need to wait for up to two minutes for the IWS to accept the change in IP information. You can press the ▲ key and then the ▼ key to see if the IWS has accepted the change. The “Set IWS IP Info” setting will change from “Yes” to “No” when the IP information has been accepted.

7. Hold both the **ENTER** and ▲ keys simultaneously for approximately four seconds. You will return to the status menu.
8. You will now need to cycle power to the chamber (turn power off then on again). The IWS will begin to use the assigned network settings on power-up.
9. Use the PING command to test connectivity to the IWS. For example, if the assigned or fixed IP address is “192.168.1.1” the proper syntax to test connectivity is “PING 192.168.1.1”. If the IWS does not respond, make sure the IP address is unique on your network.
10. Repeat steps 1-8 to assign the IP information in additional Intellus Web Servers.

## **IP Method**

The IP method can be set to any of the following:

- DHCP/Auto/Fixed
- Fixed
- Auto/Fixed
- DHCP/Fixed

When the IP method is set to DHCP/Auto/Fixed or DHCP/Fixed, the IWS will follow the standard rules to seek out and receive an IP address from a DHCP server. If the IWS does not locate a DHCP server it will use either the Auto or Fixed method to assign an IP address. The method it uses depends on if you chose the DHCP/Auto/Fixed or DHCP/Fixed method. The IWS will continue to periodically attempt to discover a DHCP server if one cannot be located. If a router is located between the IWS and the DHCP server, make sure the router is capable of forwarding DHCP/BOOTP messages or that you have a DHCP relay agent in place.

When the IP method is set to Auto/Fixed, the IWS will follow the standard rules to assign an IP address using the Automatic Private IP Addressing (APIPA) scheme. The IWS will attempt to use an address in the 169.254.0.1-169.254.255.254 range with a subnet mask of 255.255.0.0. The IWS will randomly select an IP address in this range and attempt to use it. It will check to see if the address is already in use on the network before using the address. The Auto method is designed for small networks that do not have a need for a DHCP server. It does act as a failover when a DHCP server is not available but will only provide limited connectivity

to the IWS. Do not use this method unless you have previously accommodated this scheme into your network design.

When the IP method is set to Fixed, you will need to manually assign an IP address, subnet mask and default gateway address in the IWS.

It is recommended that you set the IP method to 'DHCP/Fixed' if you have a DHCP server available. If a DHCP server is not available, then it is recommended that you set the IP method to 'Fixed'.

If further assistance is necessary, please feel free to contact Percival Scientific by calling either 1-800-695-2743 or 515-465-9363.

## **Connecting to the Intellus Web Server**

In order to communicate with the Intellus Web Server you will need to connect it to a network. A self-contained network can be created by connecting a computer directly to the IWS using a crossover cable or by connecting a computer and the IWS to a network switch or hub. Alternatively, the IWS can be connected to an existing building network. **Note:** The e-mail functionality of the IWS requires the connection of the IWS to an existing network with access to an e-mail server. An Ethernet port is provided on the exterior of the chamber for the purpose of connecting the IWS to a network. You may want to contact the individual responsible for network administration in your organization to assist with connecting the IWS to a network.

**Note:** Before connecting the IWS to your building network it is recommended that you contact your network administrator to ensure the IWS will not interfere with any other devices that are present on the network. The IWS may be assigned a unique IP address by a DHCP server if one is present. Otherwise, it will use default IP settings. A DHCP server is designed to assign IP addresses to network equipment.

The Intellus Web Server is designed to communicate on the network using the TCP/IP suite of protocols. Therefore, each Intellus Web Server must be assigned a unique IP address. On single piece orders the IWS is configured by default with the following IP information:

**IP Address:** 192.168.1.1  
**Subnet Mask:** 255.255.255.0  
**Default Gateway:** 192.168.1.254

On multiple piece orders each IWS will be assigned an IP address in succession. For example, if three chambers were ordered the IP addresses will be configured as 192.168.1.1, 192.168.1.2 and 192.168.1.3. Typically a label is provided on the front of each chamber which lists the IP configuration.

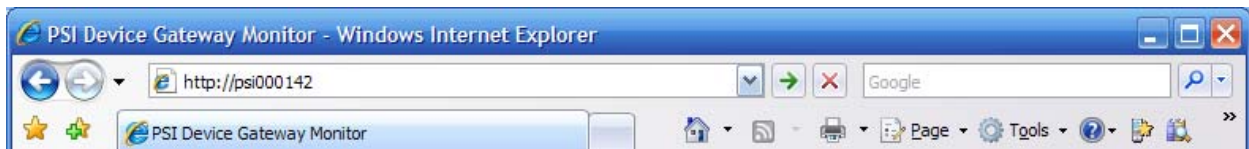


If you have created a self-contained network by connecting a computer directly to the IWS using a crossover cable or by connecting a computer and the IWS to a network switch or hub and you have not changed the IP address information using the Intellus controller as described in the **Intellus Web Server Setup** section then you can use the above information to connect to the IWS. Your computer's IP address will need to be configured in the 192.168.1.0 (255.255.255.0) network range. If you will be connecting more than one IWS with the same fixed IP address to a network you should only connect one IWS to the network at a time. This will allow you to change the fixed IP address so that one IWS will not interfere with another. Please refer to the section titled **Changing the Fixed IP Address** for information on changing the IP address once you have successfully connected.

If you have connected the IWS to your building network and a DHCP server is available the IWS will be assigned a unique IP address by the DHCP server. A DHCP server is designed to assign IP addresses to network equipment. If a DHCP server is not available the controller will use the default IP information listed above or will use the information entered via the Intellus controller as described in the **Intellus Web Server Setup** section. If any other device exists on the network with the same IP information the IWS may interfere with this device. Please contact your network administrator for advice on connecting the IWS to your building network.

Once you have connected an IWS to your network you will be able to connect to it using Internet Explorer 6 or later. To connect to the IWS use the following steps:

1. Open Internet Explorer.
2. Next, refer to the front of your chamber. A label has been provided that lists the "Browse at" address of the IWS. Enter the "Browse at" address in the address bar of Internet Explorer. For example, if the browse at address is **http://PSI000142** then this is what you'd enter into Internet Explorer's address bar. Refer to the example below. If the browse at address does not work, try using the IP address in the form of **http://192.168.1.1** instead.



3. Once you have entered the browse at address, press the **Go** button. You will now be prompted to enter a user name and password. The default user name is **ADMIN** and the default password is **PSIADMIN**.

**Important!** The user name and password must be entered with all capital letters.



4. If you are not prompted to enter your user name and password and you receive a “Page cannot be displayed” message then the computer may not be able to communicate with the IWS. If this is the case, check to ensure that the computer’s IP information is set to be on the same network as the IWS. If it is and you have connected a computer directly to the IWS using a crossover cable or connected a computer and the IWS to a network switch or hub try entering **http://192.168.1.1** in Internet Explorer’s address bar. Next, press the **Go** button. If you are still not prompted to enter your user name and password please contact your network administrator or our offices for advice.
5. If the user name and password were entered correctly you will be taken to the Monitor page shown below.

PSI Device Gateway Monitor - Windows Internet Explorer

http://psi000142/index.htm

PSI Device Gateway Monitor

## Intellus Controller: Monitor

Controller PSI000142 Revision 10.32

PERCIVAL SCIENTIFIC, INC.

[Monitor](#)
[Manual Settings](#)
[Diurnal Program](#)
[Programming](#)
[Calibration](#)
[Setup](#)
[Log Off](#)

Input Status			Alarm Status		Alarm Settings	
Input	Process	Set Point	Current Alarms		Alarm	Set Point
Temp	24.1°C	24.0°C	No Current Alarms		High Temperature	55.0°C
%RH	75%RH	75%RH			Low Temperature	-5.0°C
Aux	500PPM	500PPM			High Deviation	NA
					Low Deviation	NA
					RH High	NA
					RH Low	NA
					Auxiliary High	NA
					Auxiliary Low	NA

Acknowledge Alarms

Lighting															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
On	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Operation Mode				Controller Time	
Mode	Name	Step	Iteration	Current Controller Time	
Program	PROG1	3	NA	09:37 AM	

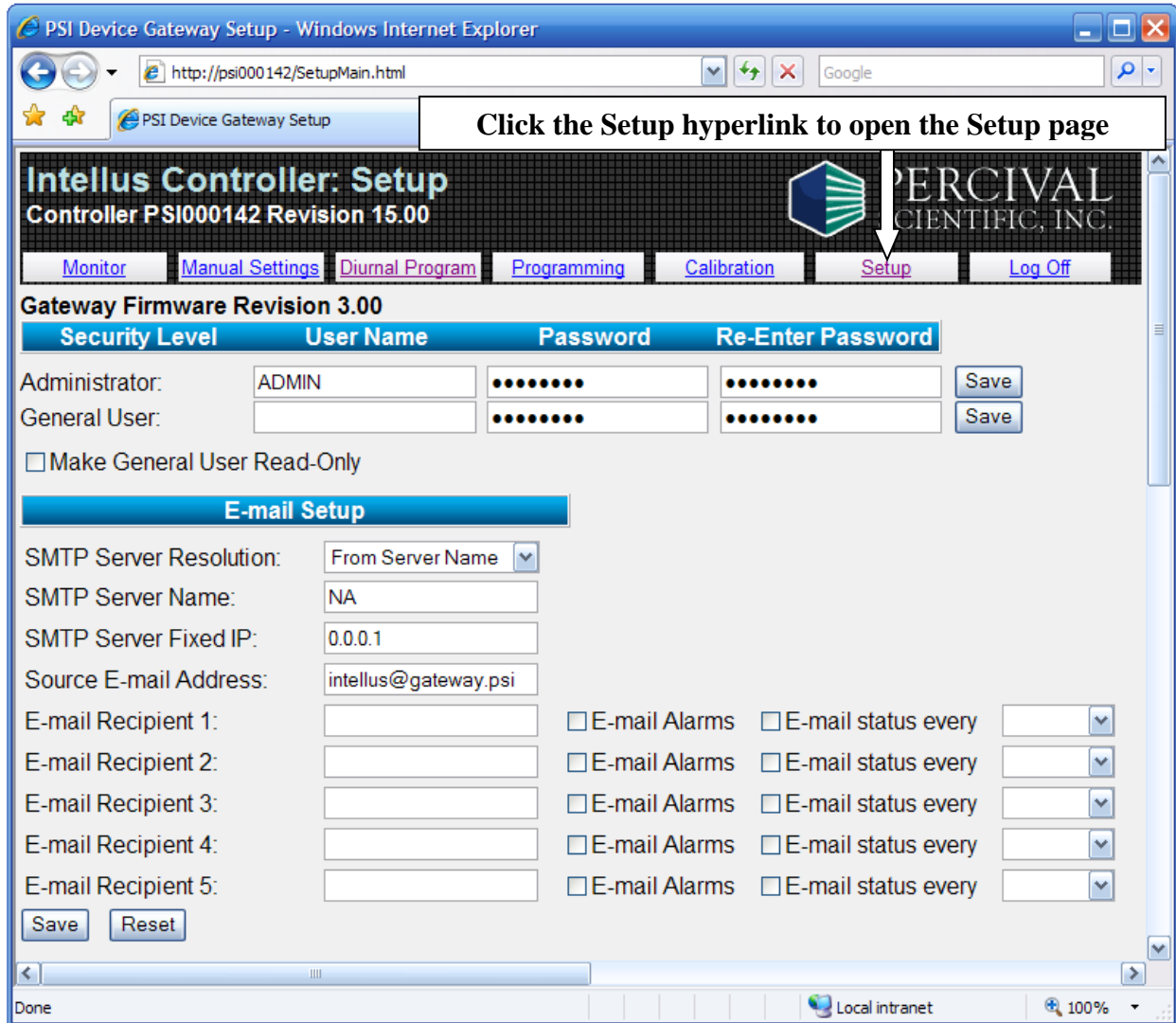
Program Steps																				
#	Time	Temp	RH	Aux	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
3	09:00 AM	24.0	75	500	On	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4	02:30 PM	12.0	70	300	On	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1	03:00 AM	12.0	70	300	Off	Off	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	06:00 AM	20.0	75	400	On	Off	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Done

Local intranet 100%

## Setup Page

It is recommended that you configure each IWS by first navigating to the Setup page. To open the Setup page, click the **Setup** hyperlink. You will be taken to the Setup page shown below.



At a minimum, the following items should be configured on the Setup page:

1. The administrator password should be changed.
2. If you want to provide limited access to the web server, configure a general user and check the read only option as necessary.
3. If you will be connecting more than one IWS to a network the fixed IP address should be changed.
4. The Monitor Page Refresh Rate and Auto Log Out values should be reviewed and changed as necessary.
5. The IWS/Intellus Ultra controller time should be set.

## Changing the Administrator Password

To change the administrator password:

1. Enter a new password in the password field for the Administrator. The password can be between 1-8 alphanumeric characters in length.
2. Re-enter the password in the re-enter password field for the Administrator.
3. Click the **Save** button next to the Administrator's re-enter password field.

You may also optionally change the administrator's user name by entering the user name prior to changing the password. The user name can be between 1-24 alphanumeric characters in length.

Security Level	User Name	Password	Re-Enter Password	
Administrator:	<input type="text" value="ADMIN"/>	<input type="password" value="••••••••"/>	<input type="password" value="••••••••"/>	<input type="button" value="Save"/>

**Important!** Do not forget the administrator password. If the password is forgotten the IWS will need to be returned to our factory to reset the password.

## Configuring a General User

When logging in as an administrator all functions are available to the administrator. This includes viewing and making changes to chamber parameters and access to the setup page. If you want to restrict a user from having full access then configure a general user. The general user can be assigned the ability to view and make changes or to only view the current chamber parameters. Checking the "Make General User Read-Only" box will restrict the user to only viewing the current chamber parameters. If this box is left unchecked then the general user can make changes. The general user does not have access to the Setup page.

To assign a general user:

1. Type a user name in the User Name field. The user name can be between 1-24 alphanumeric characters in length.
2. Enter a password in the password field for the general user. The password can be between 1-8 alphanumeric characters in length.
3. Re-enter the password in the re-enter password field for the general user.
4. If the general user is to have read-only access, check the "Make General User Read-Only" box.
5. Click the **Save** button next to the general user's re-enter password field.

## Changing the Fixed IP Address

If you will be connecting more than one IWS to a network each IWS should have a unique IP address on the network. Typically on multiple piece orders Percival Scientific has already configured unique IP addresses. In certain cases, the same IP address may have been used on multiple chambers. If this is the case and you have created a self-contained network,

change the IP address of the first IWS from 192.168.1.1 to 192.168.1.2 so that when you connect the next IWS it will not interfere with the first. Repeat the process of changing the IP address for additional IWS units. For example, if you have three IWS units, change the IP address of the first unit to 192.168.1.2 and change the next unit to 192.168.1.3. The third unit can be left at the default of 192.168.1.1.

If you will be connecting the IWS units to an existing network, a unique fixed IP address should be assigned even if each IWS will be automatically assigned an IP address from a DHCP server. If you are connecting to an existing DHCP enabled network it is recommended that you request a DHCP reservation from you network administrator for each IWS. You will need to give your network administrator the MAC address for each IWS. The MAC address can be found on a label provided on each chamber.

To change the fixed IP address:

1. Locate the **Fixed IP Address** section on the Setup page.
2. Enter the Fixed IP Address, Fixed Subnet Mask, Fixed Default Gateway and Fixed DNS Server values into their respective fields. **Note:** If you have created a self-contained network you do not need to change the Fixed Default Gateway and Fixed DNS Server values.
3. Click the **Save** button below the Fixed DNS Server field to save the fixed IP settings.
4. Cycle power to the chamber (turn chamber power off and then on again). The new fixed IP settings will not take effect until the chamber power is turned off and then on again. If the “Try DHCP server, then use Fixed IP” IP resolution method is selected it may take several seconds before the fixed IP address is available. Please wait for one minute before trying to connect using the fixed IP address.

Fixed IP Address	
Fixed IP Address:	<input type="text" value="192.168.1.1"/>
Fixed Subnet Mask:	<input type="text" value="255.255.255.0"/>
Fixed Default Gateway:	<input type="text" value="192.168.1.254"/>
Fixed DNS Server:	<input type="text" value="0.0.0.0"/>
<input type="button" value="Save"/> <input type="button" value="Reset"/>	

## Changing the Monitor Page Refresh Rate, Auto Log Out values and Setting the IWS/Intellus Ultra Controller Time

To modify the Monitor Page Refresh Rate, Auto Log Out values and set the IWS/Intellus Ultra controller time:

1. Locate the **General Settings** section on the Setup page.
2. If you are connecting to the IWS from a secure computer set the Monitor Page Refresh Rate to the desired value. This value is the interval at which the IWS will refresh the Monitor page if you leave the browser on this page. If this value is less than the Auto Log Out value then the IWS will not automatically log out. If security is important you should set the Monitor Page Refresh Rate to a value greater than the Auto Log Out value.
3. If you are connecting to the IWS from a secure computer set the Auto Log Out value to the desired value or set it to the maximum of 999 minutes. If security is important you should set the Auto Log Out value less than the Monitor Page Refresh Rate.

**Important!** In order for the auto log out feature to be activated the auto log out value must be less than the monitor page refresh rate value. If it is not the IWS will not automatically log out. **In order to fully log off the IWS you will need to close Internet Explorer.** If you do not close Internet Explorer it is possible to continue working with the IWS by clicking the **Back** button.

4. To set the IWS/Intellus Ultra controller time, enter the current time at your location in the Controller Time field.
5. Click the **Save** button below the Controller Time field to save the Monitor Page Refresh Rate, save the Auto Log Out value and set the IWS/Intellus Ultra controller time.

The Setup page can also be used to accomplish the following:

- Configure e-mail addresses of individuals to alert when the chamber enters an alarm state.
- Configure e-mail addresses of individuals to send current chamber condition e-mails.
- Modify TCP/IP setup information.

## E-mail Setup

The IWS can be configured to send e-mails to up to five different recipients for the purposes of alerting them to chamber alarms or updating them with current chamber conditions. You will need to provide either your mail server's (SMTP) name or IP address in order for the IWS to send e-mails. Most e-mail servers aren't configured to allow other devices to send e-mail through the server. This is called mail relaying and special configuration may need to be done on the mail server in order for the IWS to be able to send e-mails. Contact your network administrator and request your mail server's name and/or IP address. Also inform them that you have a device that needs to be able to send e-mail through your mail server. They will need to know the IP address of each IWS that is configured to send e-mails. The IP address for each IWS can be found under the **Current TCP/IP Information** section of the Setup page.

Current TCP/IP Information	
IP Address:	10.1.1.75
Subnet Mask:	255.255.0.0
Default Gateway:	10.1.2.1
DNS Server:	10.1.1.10
Netbios / Device Name:	PSI000142
MAC Address:	00:03:AA:00:1E:5D

In the above example the IP address of the IWS is 10.1.1.75. The administrator should be able to make the necessary changes to the mail server once they are given the IP address of each IWS.

To configure e-mail:

1. Locate the **E-mail Setup** section on the Setup page.
2. Contact your network administrator and ask for your mail server's name or IP address. If you are given the server name select "From Server Name" from the SMTP Server Resolution drop down list. If you are given the IP address select "Use Fixed IP" from the SMTP Server Resolution drop down list.
3. If you are given the server name enter this name in the SMTP Server Name field.
4. If you are given the IP address enter the IP address in the SMTP Server Fixed IP field.
5. If desired, change the source e-mail address for the IWS. This is the address the e-mail will be sent from. The default address is `intellus@gateway.psi`. You may want to change this to be something more meaningful like, `PGC-10_Room_105@YourInstitution.com`.
6. Configure each e-mail address you want the IWS to send e-mails to. If you want the user to receive alarm e-mails, check the E-mail Alarms box. If you want the user to receive current condition e-mails, check the E-mail status every box and select an interval at which the IWS will send the e-mails. Current condition e-mails can be sent once every hour, 6 hours, 12 hours or 24 hours.



7. Click the **Save** button at the bottom of the **E-mail Setup** section to save e-mail settings.
8. Optionally change the Device Name Description in the **TCP/IP Settings** section. The device name description is indicated in the subject line of all alarm and current condition e-mails. Refer to the **TCP/IP Settings** section for instructions on changing the device name description.

The following example shows the e-mail setup when the SMTP server name is used:

E-mail Setup			
SMTP Server Resolution:	From Server Name		
SMTP Server Name:	mail.yourinstitution.com		
SMTP Server Fixed IP:	0.0.0.0		
Source E-mail Address:	intellus@gateway.psi		
E-mail Recipient 1:	joe@yourinstitution.com	<input checked="" type="checkbox"/> E-mail Alarms	<input checked="" type="checkbox"/> E-mail status every Hour
E-mail Recipient 2:	ted@yourinstitution.com	<input type="checkbox"/> E-mail Alarms	<input checked="" type="checkbox"/> E-mail status every 6 hours
E-mail Recipient 3:	tim@yourinstitution.com	<input checked="" type="checkbox"/> E-mail Alarms	<input type="checkbox"/> E-mail status every Hour
E-mail Recipient 4:		<input type="checkbox"/> E-mail Alarms	<input type="checkbox"/> E-mail status every
E-mail Recipient 5:		<input type="checkbox"/> E-mail Alarms	<input type="checkbox"/> E-mail status every
<input type="button" value="Save"/> <input type="button" value="Reset"/>			

In the above example the SMTP server name is mail.yourinstitution.com. The user joe@yourinstitution.com will receive alarm e-mails and current condition e-mails once per hour. The user ted@yourinstitution.com will receive only current condition e-mails once every six hours. The user tim@yourinstitution.com will receive only alarm e-mails.

The following example shows the e-mail setup when the SMTP IP address is used:

E-mail Setup			
SMTP Server Resolution:	Use Fixed IP		
SMTP Server Name:	NA		
SMTP Server Fixed IP:	10.1.1.135		
Source E-mail Address:	intellus@gateway.psi		
E-mail Recipient 1:	joe@yourinstitution.com	<input checked="" type="checkbox"/> E-mail Alarms	<input checked="" type="checkbox"/> E-mail status every Hour
E-mail Recipient 2:	ted@yourinstitution.com	<input type="checkbox"/> E-mail Alarms	<input checked="" type="checkbox"/> E-mail status every 6 hours
E-mail Recipient 3:	tim@yourinstitution.com	<input checked="" type="checkbox"/> E-mail Alarms	<input type="checkbox"/> E-mail status every Hour
E-mail Recipient 4:		<input type="checkbox"/> E-mail Alarms	<input type="checkbox"/> E-mail status every
E-mail Recipient 5:		<input type="checkbox"/> E-mail Alarms	<input type="checkbox"/> E-mail status every
<input type="button" value="Save"/> <input type="button" value="Reset"/>			

The following is a sample of the information sent in alarm and current condition e-mails:

**IMPORTANT!** - Please investigate any errors / alarms at the chamber.

Alarm: Deviation High

Controller Time: 01:17PM

Operation: Sequence

Step: 1 MONDAY

Iteration: 1

Actual Temperature: 31.8°C

Temperature Set Point: 24.0°C

High Temperature Safety Set Point: 55.0°C

Low Temperature Safety Set Point: -5.0°C

High Deviation Alarm Set Point: 5.0°C

Low Deviation Alarm Set Point: -5.0°C

Actual RH: 75%RH

RH Set Point: 75%RH

Actual Aux: 500 PPM

Aux Set Point: 500 PPM

Light 1: Off

Light 2: Off

When an alarm occurs, the IWS will send an e-mail to each user configured to receive alarm e-mails. If the alarm is not acknowledged, the IWS will continue to send an alarm message once every six minutes for up to one hour. A user can acknowledge that there is an alarm in the chamber by clicking the **Acknowledge Alarms** button on the Monitor page. This will stop the IWS from sending e-mails for any current alarms. The user should investigate and correct any alarms at the chamber.

## **Modifying TCP/IP Setup Information**

The default TCP/IP setup information can be changed in the TCP/IP Settings section of the Setup page. The settings that can be configured are the device name, device name description, IP resolution method and fixed IP address.

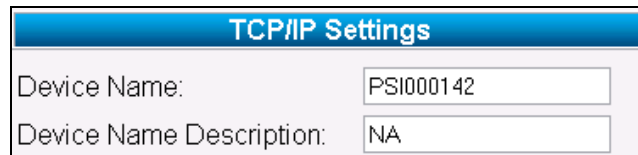
## Device Name/Device Name Description

The device name is the name the IWS registers on the network as the NetBIOS/DNS name. This name can be up to fifteen characters in length. Acceptable characters for the device name are 0 to 9, a to z, A to Z, and – (hyphen). The device name is indicated at the top of each web page. This name may be changed to something more meaningful if desired. Please note that if you change this name that it will become the new name used to connect to the IWS. For example, if the previous name was PSI000142 and you change it to PGC10 then the new browse at address would be http://PGC10.

The device name description is displayed in the subject line of alarm and current condition e-mails. By default the device name description is NA. You may change this to something more meaningful if desired.

To change the device name and device name description:

1. Locate the **TCP/IP Settings** section on the Setup page.
2. Enter the desired device name in the device name field.
3. Enter the desired device name description in the device name description field.
4. Click the **Save** button below the Fixed DNS Server field to save the device name and device name description.



TCP/IP Settings	
Device Name:	<input type="text" value="PSI000142"/>
Device Name Description:	<input type="text" value="NA"/>

## IP Resolution Method

The IWS supports the DHCP client, Auto IP and Static (Fixed) IP methods of assigning an IP address.

The IP resolution method used to obtain an IP address can be set to any one of the following:

- DHCP/Auto/Fixed
- DHCP/Fixed \*
- Auto/Fixed
- Fixed

\* This is the default method used to obtain an IP address.

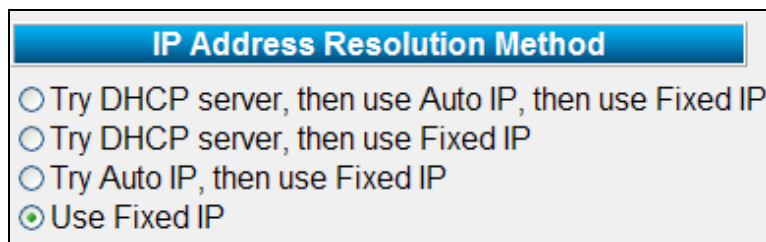
When the IP method is set to DHCP/Auto/Fixed or DHCP/Fixed, the IWS will follow the standard rules to seek out and receive an IP address from a DHCP server. If the IWS does not locate a DHCP server it will use either the Auto or Fixed method to receive an IP address. The method it uses depends on if you chose the DHCP/Auto/Fixed or DHCP/Fixed method. The IWS will continue to periodically attempt to discover a DHCP server if one cannot be located. If a router is located between the IWS and the DHCP server, make sure the router is capable of forwarding DHCP/BOOTP messages or that you have a DHCP relay agent in place.

When the IP method is set to Auto/Fixed, the IWS will follow the standard rules to seek out and receive an IP address using the Automatic Private IP Addressing (APIPA) scheme. The IWS will attempt to use an address in the 169.254.0.1-169.254.255.254 range with a subnet mask of 255.255.0.0. The IWS will randomly select an IP address in this range and attempt to use it. It will check to see if the address is already in use on the network before using the address. The Auto method is designed for small networks that do not have a need for a DHCP server. It does act as a failover when a DHCP server is not available but will only provide limited connectivity to the IWS. Do not use this method unless you have previously accommodated this scheme into your network design.

When the IP method is set to Fixed, you will need to either manually assign an IP address, subnet mask and default gateway address in the IWS or use the default values.

To change the IP Resolution Method:

1. Locate the **IP Address Resolution Method** section on the Setup page.
2. Select the desired IP resolution method.
3. Click the **Save** button below the Fixed DNS Server field to save the IP resolution method.
4. Cycle power to the chamber (turn chamber power off and then on again). The IP resolution method will not take effect until the chamber power is turned off and then on again.



The screenshot shows a web interface for selecting the IP Address Resolution Method. It features a blue header bar with the text "IP Address Resolution Method". Below the header, there are four radio button options:

- Try DHCP server, then use Auto IP, then use Fixed IP
- Try DHCP server, then use Fixed IP
- Try Auto IP, then use Fixed IP
- Use Fixed IP

# Monitor Page

**Click the Monitor hyperlink to open the Monitor page**

**Intellus Controller: Monitor**  
Controller PSI000142 Revision 10.32

PERCIVAL SCIENTIFIC, INC.

Monitor Manual Settings Diurnal Program Programming Calibration Setup Log Off

Input Status		
Input	Process	Set Point
Temp	24.1°C	24.0°C
%RH	75%RH	75%RH
Aux	500PPM	500PPM

Alarm Status	
Current Alarms	
No Current Alarms	

Acknowledge Alarms

Alarm Settings	
Alarm	Set Point
High Temperature	55.0°C
Low Temperature	-5.0°C
High Deviation	NA
Low Deviation	NA
RH High	NA
RH Low	NA
Auxiliary High	NA
Auxiliary Low	NA

Lighting															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
On	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Operation Mode			
Mode	Name	Step	Iteration
Program	PROG1	3	NA

Controller Time	
Current Controller Time	
09:37 AM	

Program Steps																				
#	Time	Temp	RH	Aux	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
3	09:00 AM	24.0	75	500	On	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4	02:30 PM	12.0	70	300	On	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1	03:00 AM	12.0	70	300	Off	Off	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	06:00 AM	20.0	75	400	On	Off	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

To open the Monitor page, click the **Monitor** hyperlink. The Monitor page provides you with an overview of the current status of your chamber. If you leave the browser on this page it will refresh automatically at the monitor page refresh rate interval.

Please refer to the **Intellus Ultra Manual** provided inside the chamber operation manual for more information regarding the items on this page.

The following status information is displayed on the Monitor page:

## Input Status

This table displays the current set points and process values for temperature, humidity (if provided) and auxiliary (if provided). Humidity and auxiliary values will display as NA (not available) if the corresponding system was not ordered.

## Alarm Status

This table displays any current alarms in the chamber. The **Acknowledge Alarms** button below the table is used to acknowledge any alarms for the purposes of sending e-mails. If a user acknowledges an alarm the IWS will send an e-mail indicating that the alarm has been acknowledged to all users configured to receive alarm e-mails. The IWS will not send any more alarm e-mails regarding the current alarm. The user should investigate and correct any alarms at the chamber. The **Acknowledge Alarms** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

## Alarm Settings

This table displays the current alarm settings in the Intellus Ultra controller. The High Temperature and Low Temperature values represent the high and low safety settings in the controller. The High Deviation and Low Deviation values represent the high and low deviation alarm settings in the controller. The RH High and RH Low values represent the high and low relative humidity alarm settings in the controller \*. The Auxiliary High and Auxiliary Low values represent the high and low auxiliary alarm settings in the controller \*. Any alarm that is not enabled in the controller will display as NA (not available).

\* Humidity and Auxiliary alarms are generally not enabled on controllers.

## Lighting Status

This table displays the current lighting set points for the chamber. Light set points will display as 'On' or 'Off' for on/off lighting or as a value between 0-100 for dimmable lighting. Any lighting output that is not enabled will display as NA (not available).

## Operation Mode

This table displays the current Intellus Ultra operation mode. If the controller is running manual settings, the Mode column will display "Manual". If the controller is running a diurnal program, the Mode column will display "Diurnal". If the controller is running a daily light integral program, the Mode column will display "DLI". If the controller is running a program, the Mode column will display "Program", the Name column will display the current running program name and the Step column will display the current step number running in the program. If the controller is running a sequence, the Mode column will display "Sequence", the Name

column will display the current running program name in the sequence, the Step column will display the current step number running in the sequence and the Iteration column will display the current iteration of the program running in the sequence.

## **Controller Time**

This table displays the current time configured for the Intellus Ultra controller.

## **Program Steps**

This table displays the current running program's step information. When manual settings are running this table is empty. When a diurnal or daily light integral program is running, the two steps of the diurnal or daily light integral program are displayed. The current running step of the diurnal or daily light integral program is shown in the first line of the table and is highlighted in yellow. When running a program or sequence the table displays the current running step highlighted in yellow followed by the next three steps of the program. If the last step of the current running program is displayed the following step will show step 1. This indicates that the program will repeat by running step 1 once the last step has finished running. If a sequence is running and the last step of the current running program is displayed the following step will show the first step of the next program that will run in the sequence.

# Manual Settings Page

PSI Device Gateway Manual - Windows Internet Explorer  
 http://psi000142/Manual.html

**Click the Manual Settings hyperlink to open the Manual Settings page**

Intellus Controller Manual Settings  
 Controller PSI000142 Revision 10.32  
 PERCIVAL SCIENTIFIC, INC.

[Monitor](#)
[Manual Settings](#)
[Diurnal Program](#)
[Programming](#)
[Calibration](#)
[Setup](#)
[Log Off](#)

### Temperature

Set Point:  °C  
 Safety High Alarm:  °C  
 Safety Low Alarm:  °C  
 Deviation Alarms:    
 High Deviation Alarm:  °C  
 Low Deviation Alarm:  °C  
 Deviation Latching:    
 Deviation Buzzer:

### Lighting

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Off	Off	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

### Humidity

Set Point:  %RH  
 Enable Humidification:    
 Enable Dehumidification:    
 High Alarm:  %RH  
 Low Alarm:  %RH

### Auxiliary

Set Point:  PPM  
 Enable Auxiliary Output 1:    
 Enable Auxiliary Output 2:    
 High Alarm:  PPM  
 Low Alarm:  PPM  
 Safety High Alarm:  PPM  
 Safety Low Alarm:  PPM

Done Local intranet 100%



To open the Manual Settings page, click the **Manual Settings** hyperlink. The Manual Settings page enables you to set the temperature, lighting (if provided), relative humidity (if provided) and auxiliary (if provided) set points that the chamber will achieve when running manual settings. It also allows you to enable or disable the humidification and auxiliary systems and to set alarm set points for temperature, relative humidity \* and auxiliary \*.

\* Humidity and Auxiliary alarms are generally not enabled on controllers.

**Important!** You must click the **Save** button at the bottom of the page in order to save any modified settings. Click the **Reset** button to reset the page data fields to what they were when the page was loaded. Click the **Run Manual** button to run manual settings.

Please refer to the **Intellus Ultra Manual** provided inside the chamber operation manual for more information regarding the items on this page and the concept of running manual settings.

The following settings can be configured on the Manual Settings page:

## Temperature

The following settings can be configured under the temperature section:

- Set Point – This is the temperature the chamber will run at when running manual settings.
- Safety High Alarm – This is the temperature at which a high safety alarm will occur.
- Safety Low Alarm – This is the temperature at which a low safety alarm will occur.
- Deviation Alarms – This setting allows you to enable or disable deviation alarms.
- High Deviation Alarm – This is the temperature the chamber must deviate above set point in order to trigger a high deviation alarm.
- Low Deviation Alarm – This is the temperature the chamber must deviate below set point in order to trigger a low deviation alarm.
- Deviation Latching - This setting allows you to enable or disable latching deviation alarms.
- Deviation Buzzer - This setting allows you to enable or disable the deviation alarm buzzer.
- Edit Defrost Settings button – Click this button to edit defrost settings. This button will be disabled when a defrost system has not been provided on your chamber. Please refer to the Defrost Settings Page section for more information.

Any setting not enabled on your controller will display as NA (not available).

## Lighting

When running manual settings, each individual light output can be configured to be on or off for on/off lighting or a percentage between 0 and 100 for dimmable lighting. For each output configured, enter either 'On' or 'Off' for on/off lighting or a value between 0 and 100 for dimmable lighting.

Clicking the View Light Lifetime button will take you to the Light Lifetime page. This button will be disabled if no light outputs have been provided on your chamber. The Light Lifetime page is used to view and reset the number of hours each light output has been on and to configure the light lifetime alarm value. Please refer to the Light Lifetime Page section for more information.

Any light output not enabled on your controller will display as NA (not available).

## Humidity (if provided)

The following settings can be configured under the humidity section:

- Set Point - This is the humidity level the chamber will run at when running manual settings.
- Enable Humidification – Select 'Yes' to enable the humidification system as necessary. Select 'No' to disable the humidification system.
- Enable Dehumidification – Select 'Yes' to enable the dehumidification system as necessary. Select 'No' to disable the dehumidification system.
- High Alarm - This is the humidity level at which a high humidity alarm will occur. \*
- Low Alarm - This is the humidity level at which a low humidity alarm will occur. \*

Any setting not enabled on your controller will display as NA (not available).

\* Humidity alarms are generally not enabled on controllers.

## Auxiliary (if provided)

The following settings can be configured under the auxiliary section:

- Set Point - This is the auxiliary level the chamber will run at when running manual settings.
- Enable Auxiliary Output 1 – Select 'Yes' to enable auxiliary output 1 as necessary. Select 'No' to disable auxiliary output 1. In almost all cases this setting should be set to 'Yes'.
- Enable Auxiliary Output 2 – Select 'Yes' to enable auxiliary output 2 as necessary. Select 'No' to disable auxiliary output 2.

- High Alarm - This is the auxiliary level at which a high auxiliary alarm will occur. \*
- Low Alarm - This is the auxiliary level at which a low auxiliary alarm will occur. \*
- Safety High Alarm - This is the temperature at which a high safety alarm will occur when the auxiliary channel has been configured to act as the safety alarm source.
- Safety Low Alarm - This is the temperature at which a low safety alarm will occur when the auxiliary channel has been configured to act as the safety alarm source.

Any setting not enabled on your controller will display as NA (not available).

\* Auxiliary alarms are generally not enabled on controllers.

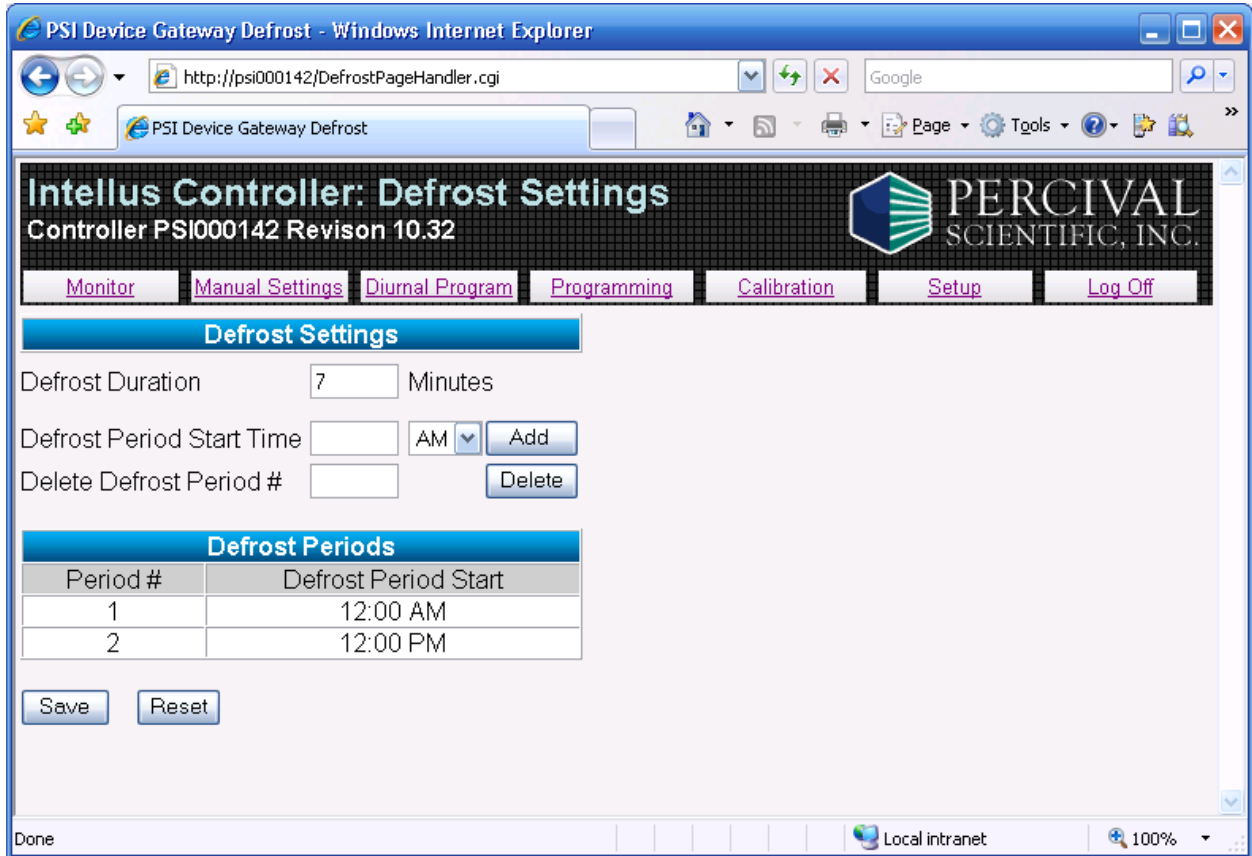
## **Saving Manual Settings**

To save any changes you make to the manual settings, click the **Save** button located at the bottom of the page. The **Save** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

## **Running Manual Settings**

To run manual settings, click the **Run Manual** button at the bottom of the page. Make sure that you have saved the settings using the **Save** button before running manual settings. The **Run Manual** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

## Defrost Settings Page



To open the Defrost Settings page, click the **Edit Defrost Settings** button in the Temperature section of the Manual Settings page. The Defrost Settings page enables you to set defrost periods for chambers ordered with a low temperature option. If a low temperature option was not ordered this button will be disabled.

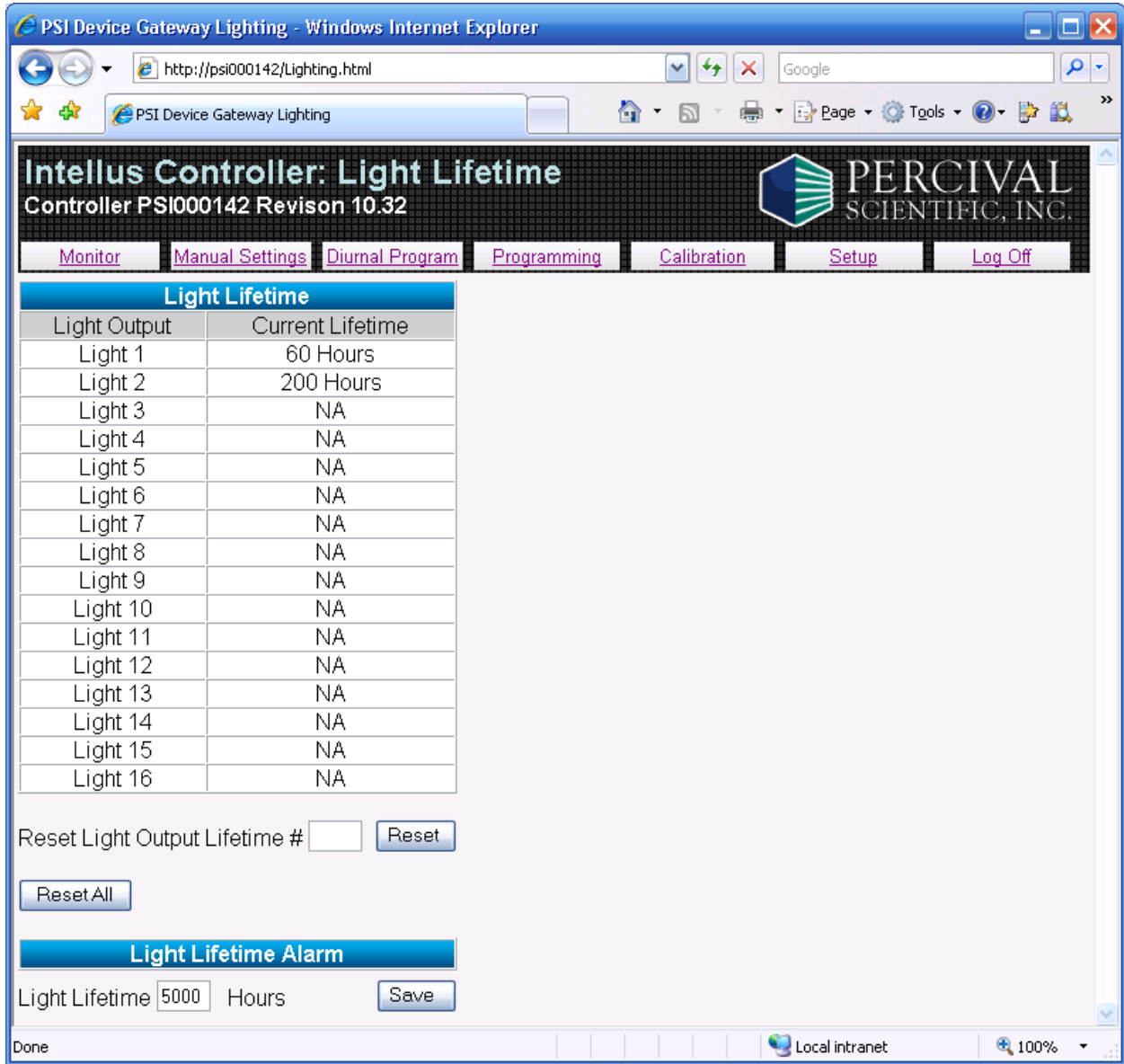
Please refer to the **Intellus Ultra Manual** provided inside the chamber operation manual for more information regarding the items on this page and the concept of programming defrost periods.

**Important!** You must click the **Save** button at the bottom of the page in order to save any changes made to the defrost duration. The **Save** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access. Click the **Reset** button to reset the page data fields to what they were when the page was loaded.

The following settings can be configured on the Defrost Settings page:

- Defrost Duration – This is the length of time each programmed defrost period will last.
- Defrost Periods – A total of six defrost periods can be programmed. To add a defrost period; enter the desired start time for the period in the Defrost Period Start Time field. Next, select AM or PM and click the **Add** button. The period will be added to the Defrost Periods table. To delete a defrost period, enter the defrost period number you wish to delete in the Delete Defrost Period # field and click the **Delete** button. The period will be removed from the Defrost Periods table. The **Add** and **Delete** buttons will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

# Light Lifetime Page



To open the Light Lifetime page, click the **View Light Lifetime** button in the Lighting section of the Manual Settings page. The Light Lifetime page enables you to view and reset the number of hours each light output has been on and to configure the light lifetime alarm value.

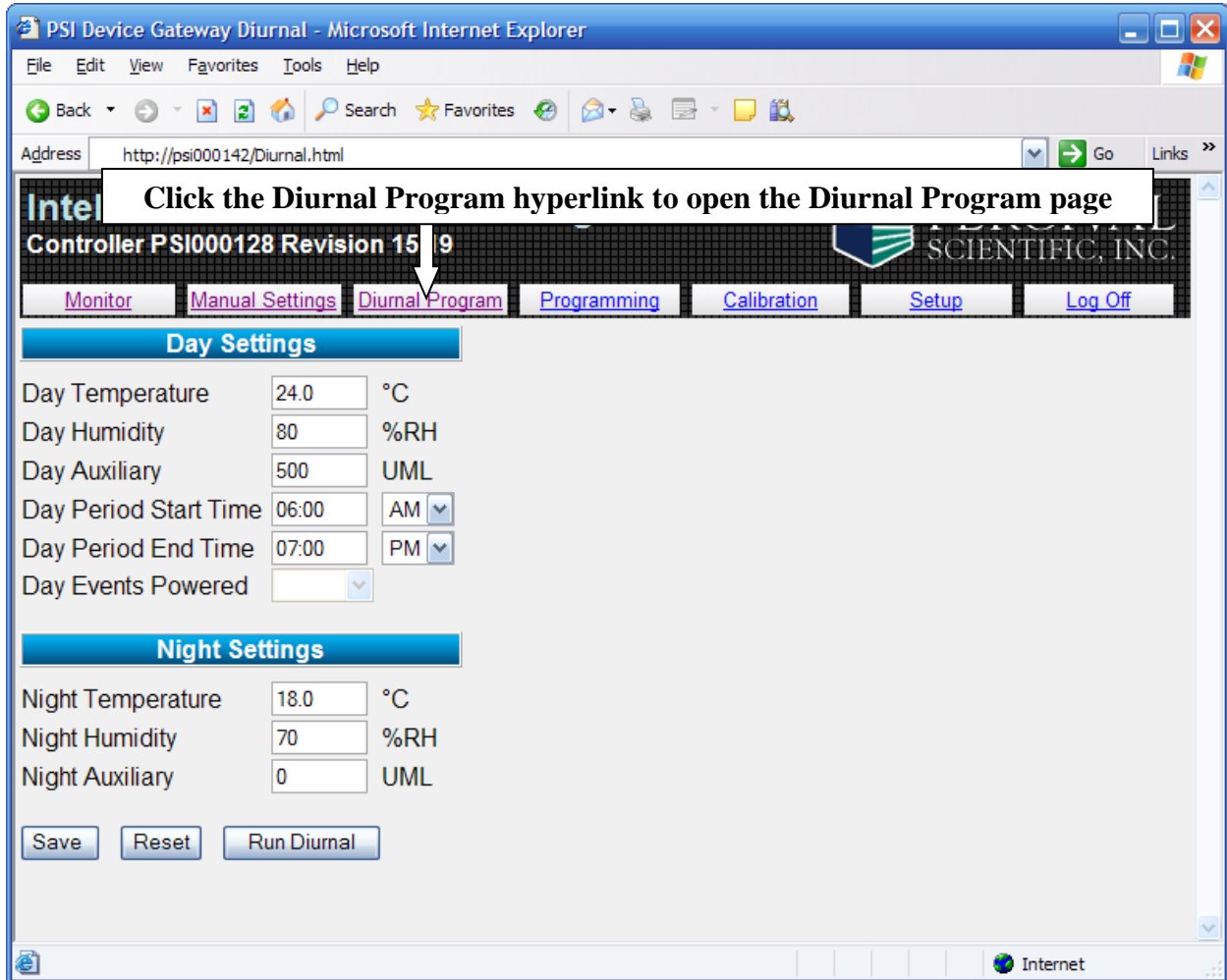
Please refer to the **IntelIus Ultra Manual** provided inside the chamber operation manual for more information regarding the items on this page.

The following actions can be performed on the Light Lifetime page:

- View light lifetimes – Each output displays the accumulated hours it has been programmed on in the Light Lifetime table.
- Reset light lifetimes – To reset an individual light output's lifetime to 0 hours, enter the number of the light output you'd like to reset in the Reset Light Output Lifetime # field and then click the **Reset** button.
- Reset all light lifetimes – To reset all light lifetime values to 0 hours, click the **Reset All** button.
- Set light lifetime alarm value – To set the light lifetime alarm value, enter the desired hours in the Light Lifetime Hours field and then click the **Save** button. The value can be between 1 to 99999 hours.
- The **Reset**, **Reset All** and **Save** buttons will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

Any light output not enabled on your controller will display as NA (not available).

## Diurnal Program Page



To open the Diurnal Program page, click the **Diurnal Program** hyperlink. The Diurnal Program page enables you to configure and run the diurnal program.

**Important!** You must click the **Save** button at the bottom of the page in order to save any modified settings. Click the **Reset** button to reset the page data fields to what they were when the page was loaded. Click the **Run Diurnal** button to run the diurnal program.

Please refer to the **Intellus Ultra Manual** provided inside the chamber operation manual for more information regarding the items on this page and the concept of running a diurnal program.

The following settings can be configured on the Diurnal Program page:



## Day Settings

The following settings can be configured under the day settings section:

- Day Temperature – This is the temperature that will run during the day period.
- Day Humidity – This is the humidity level that will run during the day period.
- Day Auxiliary – This is the auxiliary level that will run during the day period.
- Day Period Start Time – This is the time at which the day period will start.
- Day Period End Time – This is the time at which the day period will end and the night period will start.
- Day Events Powered – This setting determines if any outputs configured as event outputs should be on or off during the day period of the running program.

Any setting not enabled on your controller will display as NA (not available).

## Night Settings

The following settings can be configured under the night settings section:

- Night Temperature – This is the temperature that will run during the night period.
- Night Humidity – This is the humidity level that will run during the night period.
- Night Auxiliary – This is the auxiliary level that will run during the night period.

Any setting not enabled on your controller will display as NA (not available).

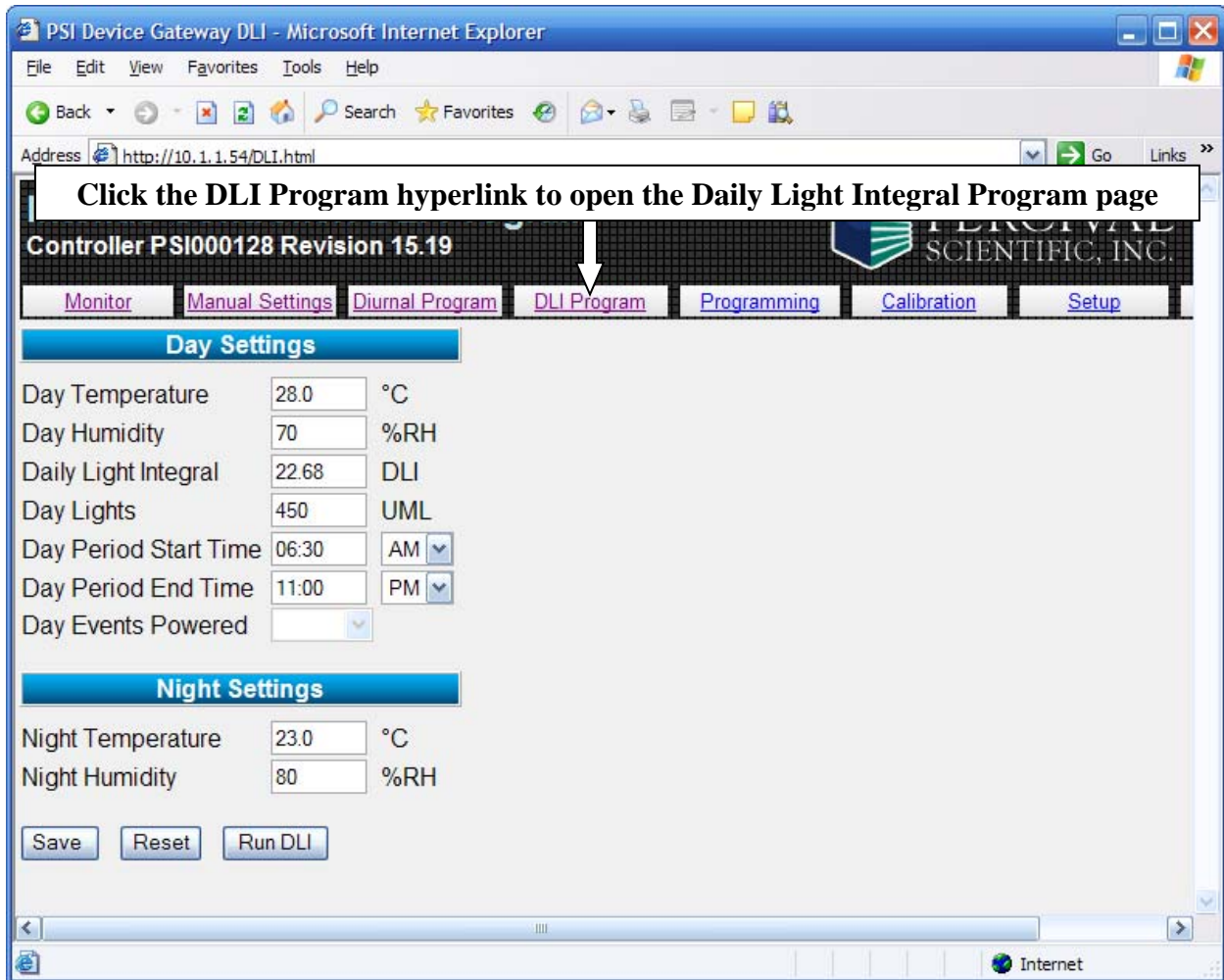
## Saving the Diurnal Program

To save any changes you make to the diurnal program, click the **Save** button located at the bottom of the page. The **Save** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

## Running the Diurnal Program

To run the diurnal program, click the **Run Diurnal** button at the bottom of the page. Make sure that you have saved the settings using the **Save** button before running the program. The **Run Diurnal** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

## Daily Light Integral (DLI) Program Page



To open the Daily Light Integral Program page, click the DLI Program hyperlink. The Daily Light Integral Program page enables you to configure and run the daily light integral program.

**Important!** You must click the **Save** button at the bottom of the page in order to save any modified settings. Click the **Reset** button to reset the page data fields to what they were when the page was loaded. Click the **Run DLI** button to run the daily light integral program.

Please refer to the **Intellus Ultra Manual** provided inside the chamber operation manual for more information regarding the items on this page and the concept of running a daily light integral program.

The following settings can be configured on the Daily Light Integral Program page:

## Day Settings

The following settings can be configured under the day settings section:

- Day Temperature – This is the temperature that will run during the day period.
- Day Humidity – This is the humidity level that will run during the day period.
- Daily Light Integral – This is the daily light integral value that the program will accumulate to each day.
- Day Lights – This is the lighting level the chamber will be set to during the day portion of the program.
- Day Period Start Time – This is the time at which the day period will start.
- Day Period End Time – This is the time at which the day period will end and the night period will start.
- Day Events Powered – This setting determines if any outputs configured as event outputs should be on or off during the day period of the running program.

Any setting not enabled on your controller will display as NA (not available).

## Night Settings

The following settings can be configured under the night settings section:

- Night Temperature – This is the temperature that will run during the night period.
- Night Humidity – This is the humidity level that will run during the night period.

Any setting not enabled on your controller will display as NA (not available).

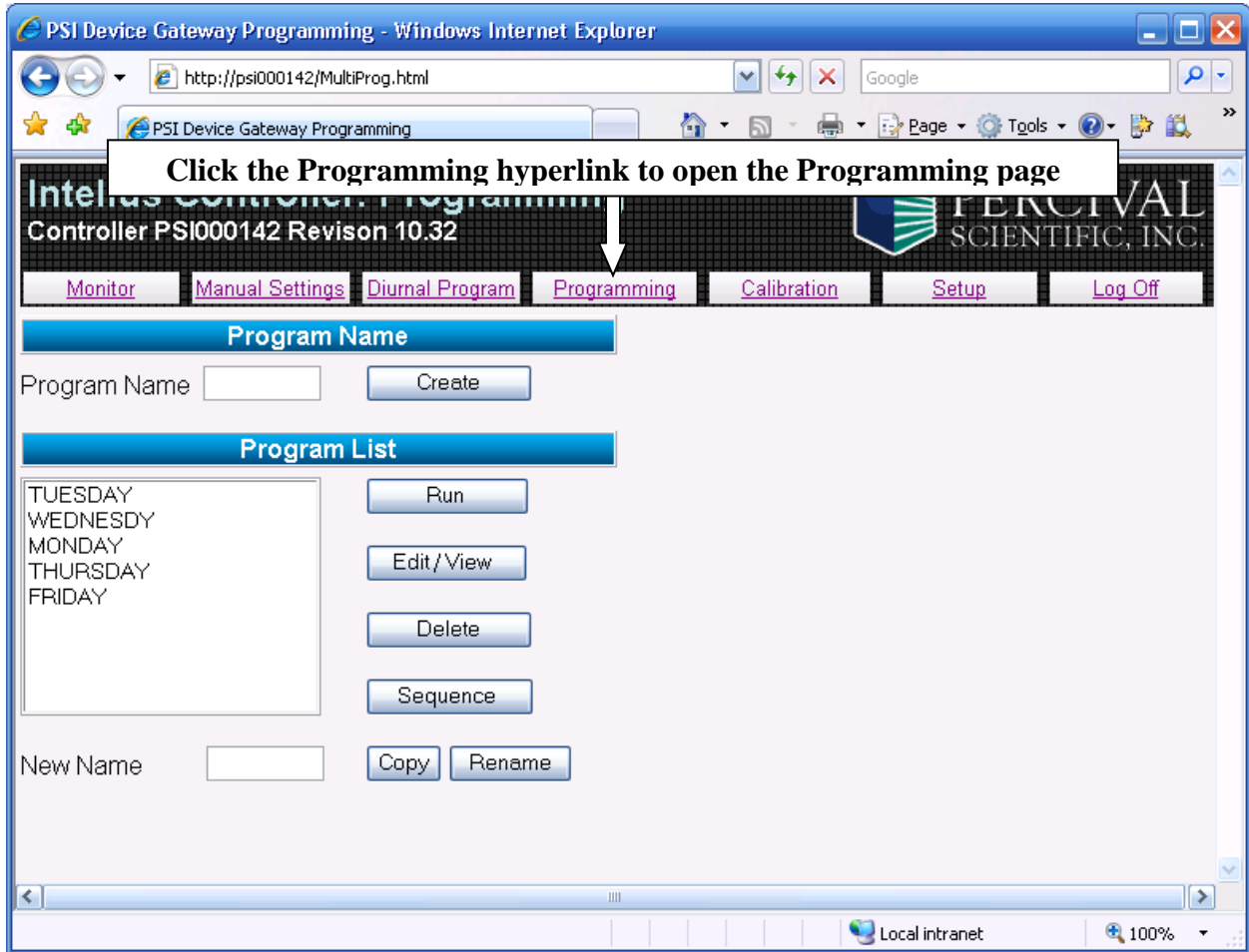
## Saving the Daily Light Integral Program

To save any changes you make to the daily light integral program, click the **Save** button located at the bottom of the page. The **Save** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

## Running the Daily Light Integral Program

To run the daily light integral program, click the **Run DLI** button at the bottom of the page. Make sure that you have saved the settings using the **Save** button before running the program. The **Run DLI** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

## Programming Page



To open the Programming page, click the **Programming** hyperlink. The Programming page enables you to create, edit, delete and run programs and sequences. When the Programming page is opened the Program List will display the programs currently in the controller. If the program step type is set to '24 Hour' then the list will reflect the 24 hour programs currently in the controller. If the program step type is set to 'Elapsed – Non 24 Hour' then the list will reflect the elapsed non 24 hour programs currently in the controller.

Please refer to the **Intellus Ultra Manual** provided inside the chamber operation manual for more information regarding programming.

## Creating a New Program

To create a new program:

1. Enter a name for the new program in the Program Name field.
2. Click the **Create** button. You will be taken to the Edit Program page where you will be able to add steps to the program. Please refer to the Edit Program Page section for more information on editing a program.

**Note:** The **Create** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

## Running a Program

To run a program:

1. Select the program you wish to run from the Program List.
2. Click the **Run** button.

**Note:** The **Run** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

## Editing/Viewing a Program

To edit or view a program:

1. Select the program you wish to edit/view from the Program List.
2. Click the **Edit/View** button.
3. You will be taken to the Edit Program page where you will be able to edit or view the program. Please refer to the Edit Program Page section for more information on editing/viewing a program.

## Deleting a Program

To delete a program:

1. Select the program you wish to delete from the Program List.
2. Click the **Delete** button.

**Note:** The **Delete** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

## Sequencing Programs

To create or edit a program sequence:

1. Click the **Sequence** button. You will be taken to the Sequence page. Please refer to the Sequence page section for more information on sequencing programs.

## Copying Programs

To copy a program:

1. Select the program you wish to copy from the Program List.
2. Enter a name for the copied program in the New Name field.
3. Click the **Copy** button.

**Note:** During the copy program process all communications from the IWS to the Intellus Ultra controller will be disabled. If you are copying a long program you may notice that all current programs no longer appear in the Program List. Please refresh the Programming page until you see the programs reappear.

The **Copy** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

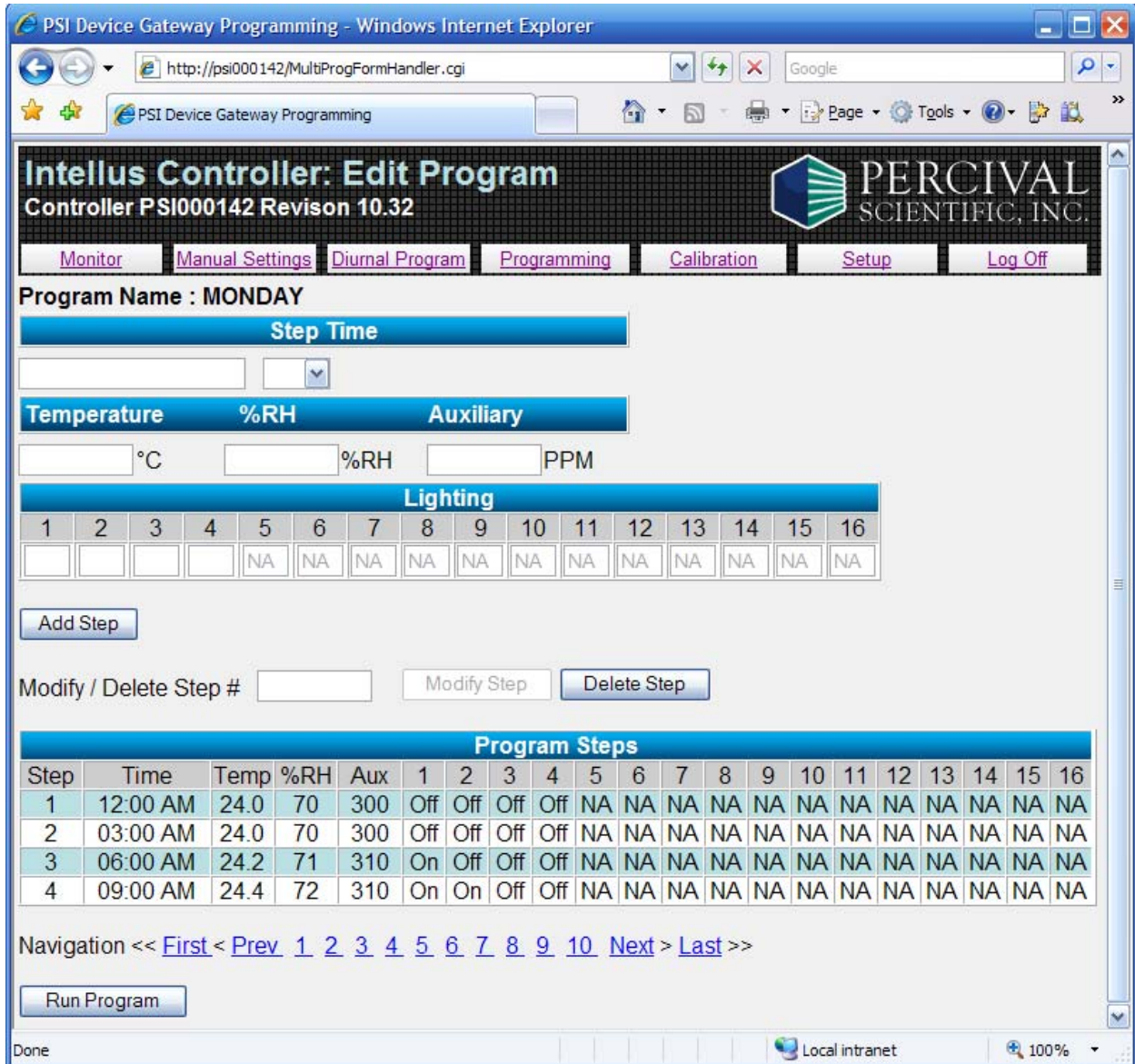
## Renaming Programs

To rename a program:

1. Select the program you wish to rename from the Program List.
2. Enter a new name for the program in the New Name field.
3. Click the **Rename** button.

**Note:** The **Rename** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

# Edit Program Page



To open the Edit Program page, either choose to create or edit a program on the Programming page. The Edit Program page enables you to edit or view programs. When the Edit Program page is opened the steps in the Program Steps table will reflect the steps in the program.

Please refer to the **Intellus Ultra Manual** provided inside the chamber operation manual for more information regarding programming.

**Note:** The **Add Step**, **Modify Step**, **Delete Step** and **Run Program** buttons will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

## Adding Steps to a Program

To add steps to a program:

1. Enter the relevant step information into the step fields. The information that is required for each step includes the step time, temperature, humidity level (if provided), auxiliary level (if provided) and lighting settings. If the program step type is set to '24 Hour' then enter the Step Time in the HH:MM AM/PM format (e.g. 12:00 AM). If the program step type is set to 'Elapsed – Non 24 Hour' then enter the Step Time in the HHH:MM format (e.g. 006:00 representing a step time of six hours). An elapsed non 24 hour step time can range from 000:01 to 999:59.
2. Click the **Add Step** button.

Any setting not enabled on your controller will display as NA (not available).

The following example shows the typical step information required for adding a step to a 24 Hour program:

Step Time															
12:00											PM				
Temperature				%RH				Auxiliary							
24.6 °C				73 %RH				315 PPM							
Lighting															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
On	On	On	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

The following example shows the typical step information required for adding a step to an Elapsed - Non 24 Hour program:

Step Time															
006:00															
Temperature				%RH				Auxiliary							
24.0 °C				75 %RH				100 PPM							
Lighting															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
On	On	On	On	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA



## Modifying Steps in a Program

To modify a program step when the program step type is set to 24 Hour:

1. Enter the step time for the step you want to modify in the Step Time field. For example, if you want to change the settings of a step that already exists at 12:00AM then you'd enter a step time of 12:00AM.
2. Enter the relevant step information into the step fields. This information will replace the current information in the step.
3. Click the **Add Step** button. The step information will now be updated.

To modify a program step when the program step type is set to Elapsed - Non 24 Hour:

1. Enter the step number for the step you want to modify in the Modify / Delete Step # field and click the **Modify Step** button. The current step information will be transferred into the step fields.
2. Change the fields as required.
3. Click the **Modify Step** button again to save changes.

## Deleting Steps in a Program

To delete a program step:

1. Enter the step number for the step you want to delete in the Modify / Delete Step # field and click the **Delete Step** button.

## Reviewing the Steps in a Program

To review the steps in a program:

1. Once you are editing a program, use the navigation page links below the Program Steps table to navigate through the steps. A total of ten steps are displayed on the Edit Program page. If you have more than ten steps in your program then you must use the First, Prev, Next or Last links to navigate through additional steps. The First link will load the first ten steps of your program. The Prev link will load the previous ten steps of your program. The Next link will load the next ten steps of your program. The Last link will load the last 10 steps of your program. Alternatively, you may select the page number to go directly to a set of ten steps. For example, if your program contains 55 steps, then you could click page 6 to view steps 46-55. Clicking page 5 would display steps 41-50.

## Running the Program

To run the program:

1. Click the Run Program button at the bottom of the page.

## Sequence Program Page

The screenshot shows a web browser window titled "PSI Device Gateway Programming - Windows Internet Explorer". The address bar shows the URL "http://psi000142/MultiProgSeqFormHandler.cgi". The page header includes "Intellus Controller: Sequence Program" and "Controller PSI000142 Revision 10.32". The Percival Scientific, Inc. logo is visible in the top right. A navigation menu contains buttons for "Monitor", "Manual Settings", "Diurnal Program", "Programming", "Calibration", "Setup", and "Log Off".

The main content area features a "Program List" section with a scrollable list of days: TUESDAY, WEDNESDY, MONDAY, THURSDAY, FRIDAY, SATURDAY, and WEEKEND. Below this list are three input fields with corresponding buttons: "Number of Iterations" (value: 1, button: Add), "Insert After Sequence Step #" (button: Insert), and "Delete Sequence Step #" (button: Delete).

A "Sequence Information" table is displayed below the input fields:

Step	Program Name	Iterations
1	MONDAY	1
2	TUESDAY	1
3	WEDNESDY	1
4	THURSDAY	1
5	FRIDAY	1
6	SATURDAY	1
7	WEEKEND	2

At the bottom of the page, there are three buttons: "Save", "Reset", and "Delete Sequence". A "Run Sequence" button is located next to two input fields: "Run sequence from step #" and "and iteration #".

To open the Sequence Program page, click the **Sequence** button on the Programming page. The Sequence Program page enables you to link programs together to run in series. When

the Sequence Program page is opened the program list will reflect the current programs in the controller and the sequence information table will reflect the steps in the sequence.

Please refer to the **Intellus Ultra Manual** provided inside the chamber operation manual for more information regarding sequencing programs.

## Adding Steps to the Sequence

To add steps to the sequence:

1. Select the program you wish to add to the sequence from the program list.
2. Enter the number of iterations you wish the program to run in the Number of Iterations field. The number of iterations can range between 1 and 500.
3. Click the **Add** button. You can add up to 50 programs to the sequence.

**Note:** The **Add** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

## Inserting Steps into the Sequence

To insert steps into the sequence:

1. Select the program you wish to insert into the sequence from the program list.
2. Enter the number of iterations you wish the program to run in the Number of Iterations field. The number of iterations can range between 1 and 500.
3. Enter the sequence step number you wish to insert the new program after in the Insert After Sequence Step # field.
4. Click the **Insert** button.

**Note:** The **Insert** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

## Deleting Steps from the Sequence

To delete steps from the sequence:

1. Enter the number of the step you wish to delete in the Delete Sequence Step # field.
2. Click the **Delete** button.

**Note:** The **Delete** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

## Running the Sequence

To run the sequence:

1. Enter the starting step you wish to run the sequence from in the Run sequence from step # field. Typically this would be step 1.
2. Enter the starting iteration you wish to run the sequence from in the Iteration # field. Typically this would be iteration 1.
3. Click the **Run Sequence** button.

**Note:** The **Run Sequence** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

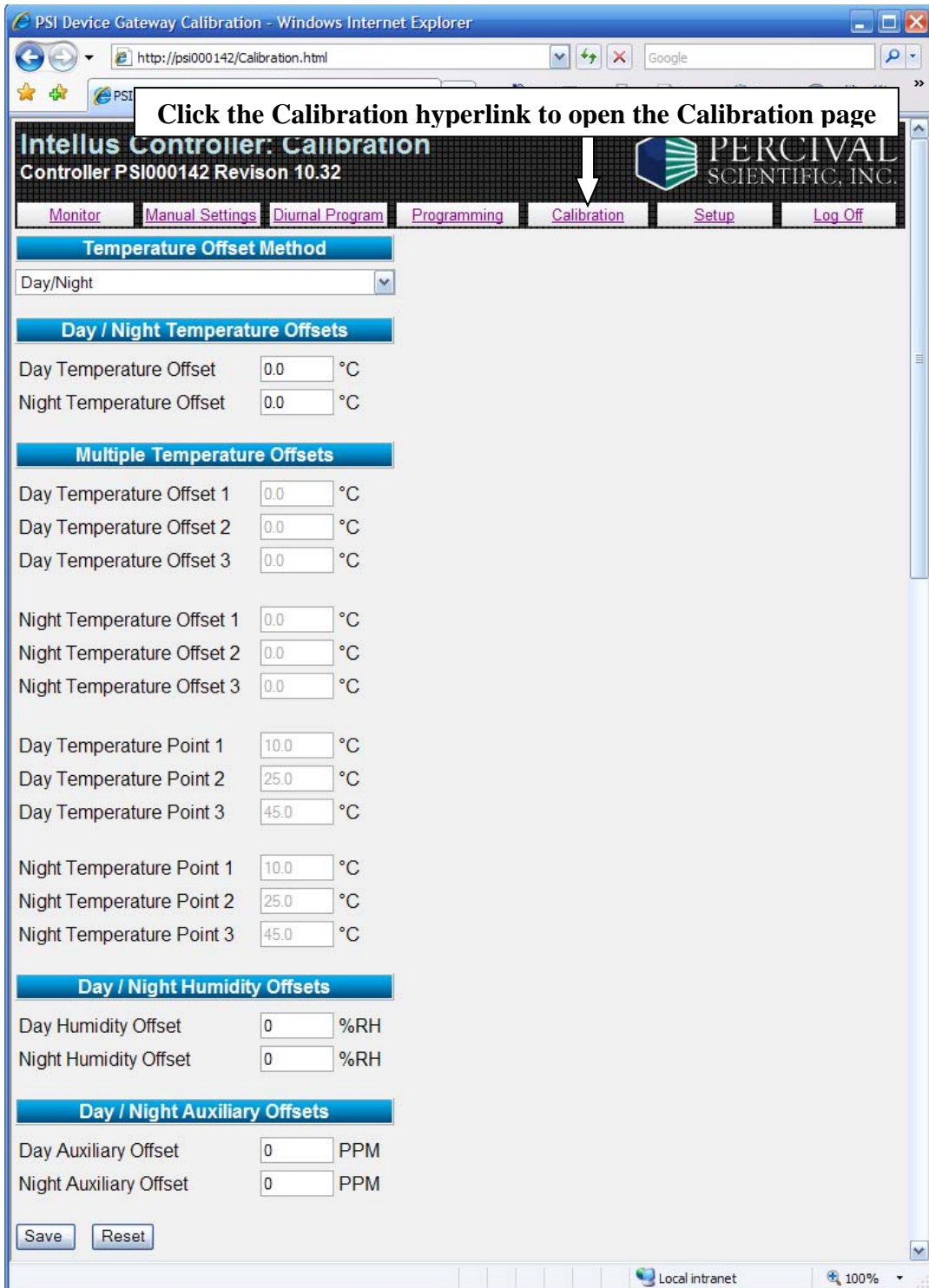
## Deleting the Entire Sequence

To delete the entire sequence:

1. Click the **Delete Sequence** button.

**Note:** The **Delete Sequence** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

# Calibration Page



To open the Calibration page, click the **Calibration** hyperlink. The Calibration page enables you to adjust the calibration offsets the chamber uses to control temperature, humidity and auxiliary.

Please refer to the **Intellus Ultra Manual** provided inside the chamber operation manual for more information regarding calibration offsets.

Any setting not enabled on your controller will display as NA (not available).

**Important!** Calibration offsets are not normally altered. Calibration offsets should only be changed when the temperature, humidity or auxiliary values displayed on the controller do not agree with your measurement device.

**Important!** You must click the **Save** button at the bottom of the page in order to save any modified settings. Click the **Reset** button to reset the page data fields to what they were when the page was loaded.

The following offsets can be configured on the Calibration page:

## Temperature

Selecting the temperature offset method:

1. Select the temperature offset method from the drop-down list. Select **Day/Night** to use day/night offsets. Select **Multiple** to use multiple offsets. Under normal circumstances use day/night offsets to calibrate the chamber.

When 'Day/Night' is selected as the offset method the following offsets can be configured for temperature:

- Day Temperature Offset – This is the offset that will be applied when any light output is configured to be on.
- Night Temperature Offset – This is the offset that will be applied when all light outputs are configured to be off.

When 'Multiple' is selected as the offset method the following offsets can be configured for temperature:

- Day Temperature Offset 1-3 – These are the temperature offsets that will be applied at day temperature points 1-3 when any light output is configured to be on.
- Night Temperature Offset 1-3 – These are the temperature offsets that will be applied at night temperature points 1-3 when all light outputs are configured to be off.
- Day Temperature Point 1-3 – These are the temperatures at which the day temperature offsets 1-3 will be applied when any light output is configured to be on.

- Night Temperature Point 1-3 – These are the temperatures at which the night temperature offsets 1-3 will be applied when all light outputs are configured to be off.

### **Humidity (if provided)**

The following offsets can be configured for humidity:

- Day Humidity Offset – This is the offset that will be applied when any light output is configured to be on.
- Night Humidity Offset – This is the offset that will be applied when all light outputs are configured to be off.

### **Auxiliary (if provided)**

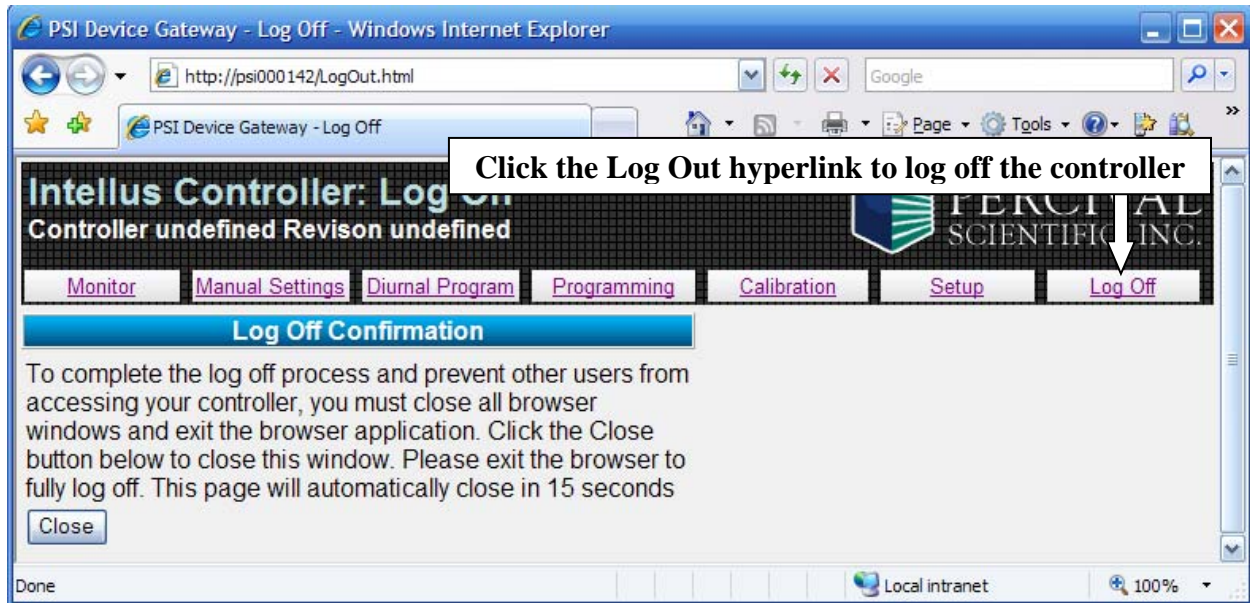
The following offsets can be configured for auxiliary:

- Day Auxiliary Offset – This is the offset that will be applied when any light output is configured to be on.
- Night Auxiliary Offset – This is the offset that will be applied when all light outputs are configured to be off.

### **Saving Calibration Offsets**

To save any changes you make to the calibration offsets, click the **Save** button located at the bottom of the page. Once the offsets are saved they will be applied immediately. The **Save** button will not be available if the current user is logged in as the general user and the general user has been assigned read-only access.

## Logging Out



To log out of the controller, click the **Log Out** hyperlink. You will be directed to the Log Off page. **In order to fully log off the IWS you will need to close Internet Explorer.** If you do not close Internet Explorer it is possible to continue working with the IWS by clicking the **Back** button.