

# PiLAB

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User Manual

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## 1. Introduction

PiLAB software is designed to improve experimental workflows for the POLSTAT3500 reaction system. It automates the tracking of key parameters like temperature and stirring, reducing the need for manual checks and saving lab time. This makes managing complex reactions easier and ensures reliable results. The software helps increase productivity, allowing researchers to focus on analysis instead of repetitive tasks, improving lab efficiency.

PiLAB also includes tools for secure data management, fully compliant with FDA 21 CFR Part 11 for electronic records. It offers real-time monitoring and remote control via an easy-to-use online interface, ensuring safe, compliant, and efficient lab operations

### Web-Based Architecture

**No Client Software Required:** Eliminates the need for installing client software on a PC.  
**Browser Access:** PiLAB can be accessed from any PC through a Chrome browser.

#### 1.1. Audit Trails

**Comprehensive Tracking:** Maintains detailed records of all actions and changes.

#### 1.2. Reports

**Electronic Signatures:** Supports electronic signatures for report authentication.

#### 1.3. Customized Print Reports

**Tailored Output:** Provides options for customized print reports to meet specific needs.

#### 1.4. User Management

**Account Administration:** Facilitates the creation and management of user accounts.

#### 1.5. Role Management

**Access Control:** Allows assignment and management of user roles and permissions.

#### 1.6. Compliance

**21 CFR Part 11 Support:** Ensures compliance with regulatory requirements for electronic records and signatures.

#### 1.7. Historical Data and Analysis

**Data Retention:** Supports storage and analysis of historical data for review and decision-making.

#### 1.8. Auto Backups

**Automated Backup:** Provides automatic backup of data to ensure data integrity and availability.

#### 1.9. Backup Review Option

**Backup Verification:** Allows for review and verification of backup data.

#### 1.10. Recipe Builder

The recipe builder is essentially a series of steps designed for starting an experiment.

## 2. Installation Details

### 2.1. System Requirements

#### Software

Operating System : Windows 10 Pro with 64 bit Operating system, Windows 2012R2Server and Windows 2016 Server.

Other Software's : PostgreSQL  
 JAVA  
 Software License (License is bound to the hardware of the server)PiLABMaster  
 PiLABVerify

#### Hardware

- Intel® Core™ i5-6500 CPU @3.20GHz or Higher Processor
- 16GB RAM
- 1 TB Hard drive
- Ethernet port 1 No
- USB ports 1 No

### 2.2. Installation Procedure for PiLAB

#### 2.2.1. Installation of PostgreSQL

PostgreSQL is a database, which is used to store the data of the application.



#### NOTE:

- Before going to install PostgreSQL server system must have internet.
- Connect the USB/CD-drive to the system then click on that in that select PiLAB folder.
- Then select postgresql-9.5.7-1-windows-x64.
- Then right click on the postgresql-9.5.7-1-windows-x64 file then select Run as administrator.
- For this setup installation system must have internet connection to download the setup file andalso all the certificates related to the setup of Microsoft visual C++ 2013 Redistributable (x64)– 12.0.40660.
- Click on Next.
- Click on Next.
- You can give password in these fields, after that click on next.
- Click on Next.
- Setup is installing, wait for few seconds this will take some time.
- Uncheck the check box and then click on finish.
- Then go to start menu and in that search for pgadmin.

- Click on PostgreSQL.9.5 (local host: 5432) then it will ask for password. Enter the password then click on OK.
- Right click on the database then select new database.
- Give polsoftdb as database name and also create another database with the database name sample.
- Then click on OK.
- Refer IQ document for installation

### 2.2.2. Installation of JAVA



#### NOTE:

- Software will not work unless you have Java installed. Java is fast and secure
- Open PiLAB folder which is available in USB/CD-drive folder in that selectjdk1.8.
- Select the folder jdk-8u131-windows-x64 and right click on that then click on Run as administrator.
- Click on next.
- Click on next.
- Java is installing this will take few seconds.
- Java successfully installed.
- After installation of java you need to set java path. Go to computer then select the PC and rightclick on that click on properties then go to advanced system settings.
- Click on advanced system settings.
- Click on Environment Variables.
- Click on new button in User variables.
- Select the path where java is installed and copy this path.
- Enter JAVA\_HOME in variable name field and paste the path (Java installation path).
- Click on OK.
- Click on new button in System variables.
- Enter JAVA\_HOME in variable name field and paste the path (java installation path).
- Click on OK.
- Click on OK.
- Java path is successfully configured. You can verify by entering javac in command prompt it show the details as below screen.
- Select the folder name as jCEPolicyJDK8 and copy both the files from USB drive.
- The copied files need to paste into a location like this C:\ProgramFiles\Java\jdk1.8.0\_131\jre\lib\security and also paste the files with another location C:\Program Files\Java\jre1.8.0\_121\lib\security.
- Replace the existing files with new files.
- Click on continue.
- Both files will be replaced.
- In software serial port is used so if you want to use the port dependencies have to install without installing dependencies serial port can't use.
- Go to PiLAB which is available on USB/CD-drive folder, go to Dependencies folder then select rxtxParallel.dll and rxtxSerial.dll files.



- Copy rtxParallel.dll and rtxSerial.dll files.
- Paste rtxParallel.dll and rtxSerial.dll to C:\Program Files\Java\jdk1.8.0\_131\jre\bin then click on continue.
- It will ask for permission just click on continue then rtxParallel and rtxSerial files are copied.
- Paste rtxParallel.dll and rtxSerial.dll to C:\Program Files\Java\jre1.8.0\_171\bin then click on continue.
- Go to PiLAB folder then go to Dependencies folder copy RXTXComm.jar file.
- Paste RXTXComm.jar to C:\Program Files\Java\jdk1.8.0\_131\jre\lib\ext and C:\Program Files\Java\jre1.8.0\_171\lib\ext.
- Refer IQ document for installation

### 2.2.3. Installation of PiLABMaster

- Go to the folder PiLAB which is available in USB/CD-Drive folder in that select Services folder.
- Create a folder in “C:” drive where you want to install the services. Give a folder name with PiLAB.
- Copy PiLABMaster.exe, PiLABMaster.war and PiLABMaster.xml file.
- You can verify the paths in PiLABMaster.xml file.
- Paste the selected folders to C:\PiLAB.
- Then open command prompt (Run as administrator). User must have administrator privileges.
- Then go to folder where PiLABMaster.exe file is available (C:\PiLAB) by using command prompt PiLABMaster.exe install you can install PiLABMaster service file.
- Click on start button search by services. In Services you can see PiLABMaster installed as a service.
- Right click on the PiLAB service there are various options available click on start.
- PiLAB service is started running.
- Refer IQ document for installation.


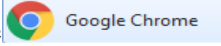
### 2.2.4. Installation of PiLABVerify

- PiLAB verify software used for verification of backup file.
- Go to PiLAB folder which is available in USB/CD-Drive folder in that folder select Services folder.
- Select PiLABVerify.exe, PiLABVerify.war and PiLABVerify.xml file and copy these files.
- Paste the folders in C:\PiLAB.
- You can verify the path and port in PiLABVerify.xml file.
- Then open command prompt (Run as administrator). User must have administrator privileges.
- Then go to folder where PiLABVerify.exe (C:\PiLAB) file is available by using command PiLABVerify.exe install you can install PiLABVerify service file.
- Go to start menu search for services click on services then search for PiLABVerify service.
- By right click on the PiLABVerify service there are various options available click on start.
- PiLABVerify service is started running.
- Refer IQ document for installation.

### 2.2.5. License File

- To run PiLAB software License file is required without License application won't run
- Open USB/CD-Drive folder in that License folder is available copy it. Paste the folder into the PC where service files are available (C:\PiLAB).
- You can verify the License file by entering the IP Address and port in the browser (default port: 8080). Application login form will open.

## 3. Login / Logout Procedure

- Click on start (Windows)  button on windows screen.
- Navigate to Google Chrome browser and click on chrome .
- Click on address bar and enter the IP address with port number. IP address is the IP address of the PiLAB running PC and port number is 8080 by default (Ex: 192.168.2.24:8080).
- Upon entering the IP address with port number, then PiLAB Login screen shall be appeared (Note: Wait for 2 minutes upon start of PiLABMaster service).
- Enter the username, password at the respective fields.
- Click on '**Sign in**' button, then PiLAB screen shall be appeared only if the entered username, password is correct and user information shall be displayed on top right corner of the web page with drop down.
- If wrong password entered, the screen shall be appeared with alert message "**Failed to sign in! 3 more attempts left**". (As per '**Failed Access attempts**' in System preference page).
- If wrong username entered, the screen shall be appeared with alert message "**Failed to signin! we do not know such user**".
- If user wants to logout from the PiLAB screen, click on drop down list at user and select the '**Sign out**'.
- Click on '**Sign out**' and then login screen shall be appeared.

## 4. Dashboard

### 1. Dashboard Page

- When we login to PiLAB or when we click on dashboard screen below screen will display.

The screenshot shows the PiLAB dashboard interface. The left sidebar contains a menu with 'Dashboard' highlighted by a red circle. The main content area displays a 'first floor lab' tab and a 'Polstat3500' device. Below the device name, there are four experiment cards, each labeled 'Experiment 1' through 'Experiment 4'. Each card shows a 'STOPPED' status, a flask icon, and a table of parameters: MPV °C, BPV °C, SP °C, and RPM.

MPV °C	BPV °C	SP °C	RPM
26.92	22.49	-	0
26.88	21.66	-	0
26.73	21.40	-	0
27.27	18.40	-	0

### 2. Areas Tab

- Areas Tab describe as Placement of devices in areas or devices located in which place.
- If we click on areas tab, devices will display as shown here.

The screenshot shows the PiLAB dashboard interface with the 'first floor lab' tab selected in the top navigation bar, circled in red. The main content area displays the same 'Polstat3500' device and four experiment cards as in the previous screenshot.

MPV °C	BPV °C	SP °C	RPM
26.92	22.49	-	0
26.88	21.66	-	0
26.73	21.40	-	0
27.27	18.40	-	0

### 3. Blocks

#### 3.1 Name of the Device

- Every device having unique name, will display on top of the device block as shown here.

The screenshot shows the PiLAB dashboard for the 'first floor lab'. The left sidebar contains navigation options: Dashboard, Devices, Recipe Builder, Dashboard Manager, User Management, Role Management, Device Manager, System Preferences, Report Templates, Reports, Audits, Scheduler, and Backup. The main area displays four experiment blocks for the device 'Polstat3500'. Each block shows a 'STOPPED' status, a recipe name, a flask icon, and a table of parameters.

MPV °C	BPV °C	SP °C	RPM
26.92	22.49	-	0
26.88	21.66	-	0
26.73	21.40	-	0
27.27	18.40	-	0

#### 3.2 Interact with Specific Block

We can see current status of experiment in home screen.

##### 3.2.1 Running

- Status Running means experiment is started in particular block.
- Running status will display with green color on top of block as shown here.

The screenshot shows the PiLAB dashboard for the 'first floor lab'. The main area displays four experiment blocks for the device 'Polstat3500'. The first block, 'Block1\_heating\_90 Manual', is in a 'RUNNING' state (indicated by a green bar and circled in red). The other three blocks are in a 'STOPPED' state.

MPV °C	BPV °C	SP °C	RPM
26.87	17.12	50.0	100
26.84	16.45	-	0
26.70	16.57	-	0
27.07	14.28	-	0

### 3.2.2 Paused

- Status paused means experiment is paused in particular block.
- Paused status will display with yellow color on top of device block as shown here.



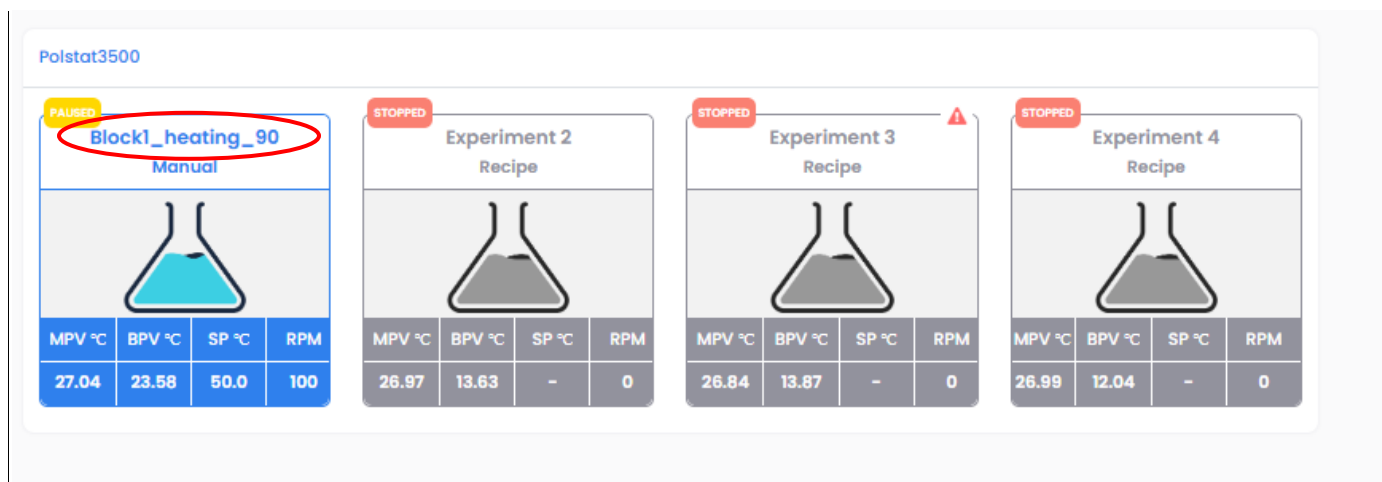
### 3.2.3 Stopped

- Status stopped means experiment is not started or stopped in particular block .
- Stopped status will display with red color on top of the device block as shown here.



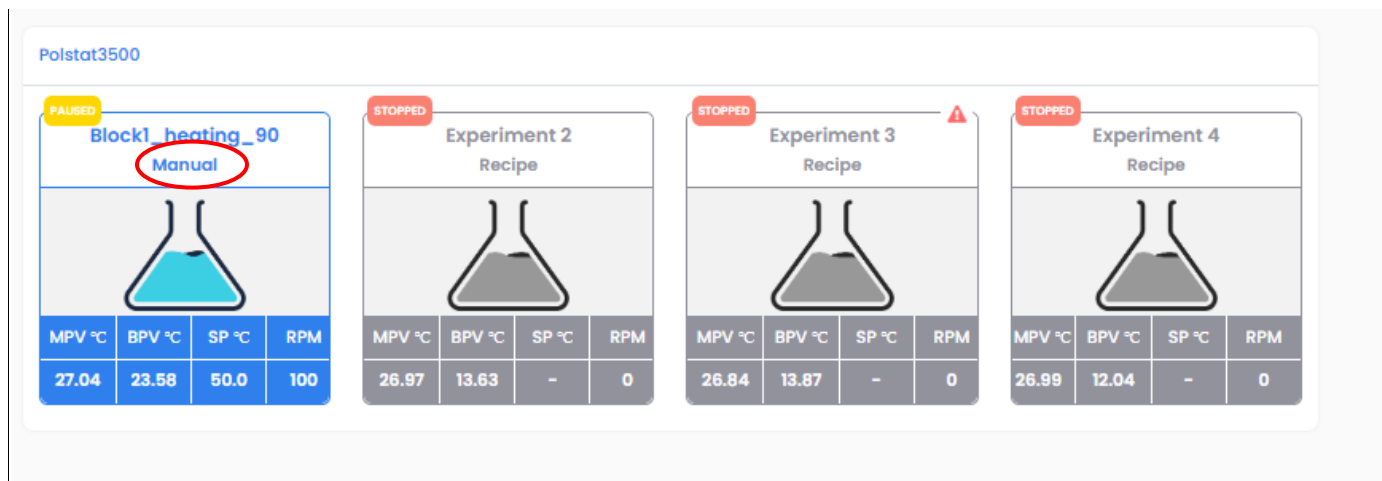
### 3.3 Experiment name

- Experiment name will display on top of device block as shown below.
- Experiment name will be given when we starting experiment.







### 3.4 Mode of Experiment

- We can run experiment in two modes 1. Recipe mode 2. Manual mode.
- We are able to see mode of Experiment on top of the device block as shown below.



**NOTE:**

- 
 If Image is in blue color with rotation then experiment is running in block.
- 
 If Image is in blue color without rotation then experiment is paused in block.
- 
 If Image is in grey color with rotation then stirrer is started in block.
- 
 If Image is in grey color without rotation then experiment is not started in block.


**3.5 Diagnostics**


- If any device parameter of block is not working then it will show warning symbol on blocks as shown in below screen.

Polstat3500

Block Name	Status	MPV °C	BPV °C	SP °C	RPM	Warning
Block1_heating_90 Manual	PAUSED	27.04	23.58	50.0	100	No
Experiment 2 Recipe	STOPPED	26.97	13.63	-	0	No
Experiment 3 Recipe	STOPPED	26.84	13.87	-	0	Yes
Experiment 4 Recipe	STOPPED	26.99	12.04	-	0	No

- If we click on that warning symbol below screen will display.

Overview Experiment Configurations Reports **Diagnostics** 

Components	Status
Block_IN_RTD	OK 
Block_OUT_RTD	OK
MASS_RTD	OK
Heater	OK
Cooling	OK
LH_PV	4.20 <span style="color: red;">Chiller Temperature Out Of Range</span>
Emergency stop switch	Connected


#### 4. Interact with Specific Block

- Click on particular block as shown here.

Polstat3500

PAUSED


**Block1\_heating\_90**  
Manual




MPV °C	BPV °C	SP °C	RPM
27.04	23.58	50.0	100

STOPPED


Experiment 2  
Recipe



MPV °C	BPV °C	SP °C	RPM
26.97	13.63	-	0

STOPPED 


Experiment 3  
Recipe



MPV °C	BPV °C	SP °C	RPM
26.84	13.87	-	0

STOPPED

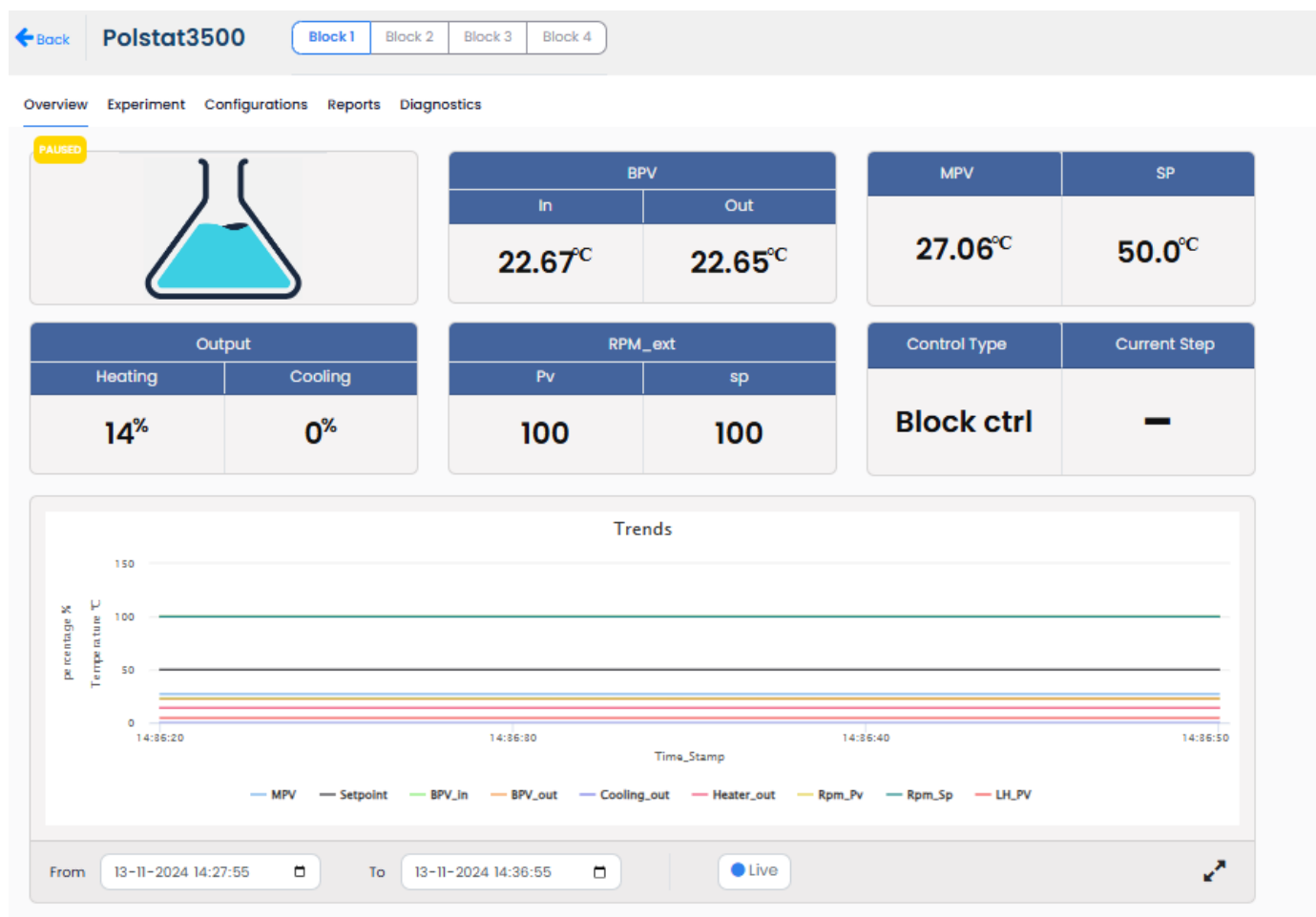
Experiment 4  
Recipe



MPV °C	BPV °C	SP °C	RPM
26.99	12.04	-	0



- After clicking on particular block below screen will display.



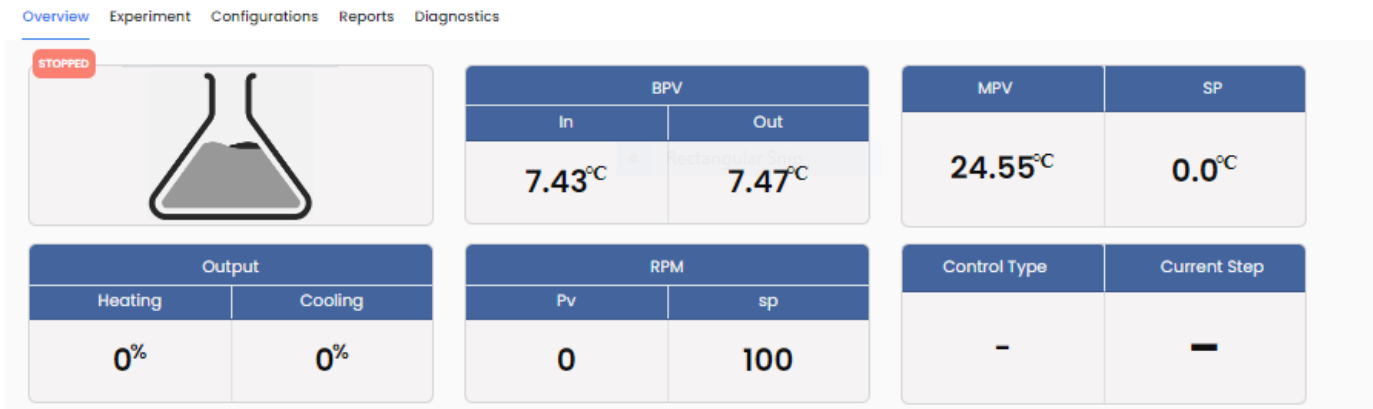
- This page consists of device name along with back button.
- Live data and graph also available in this page.

## 4.1 Overview

Features available in Overview page are listed below

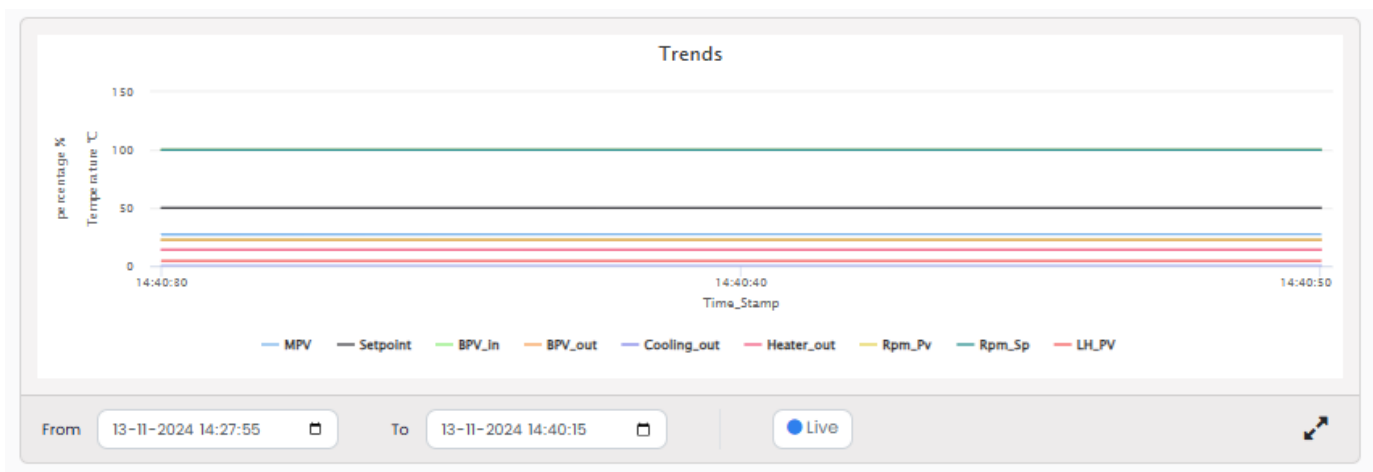
### 4.1.1 Live data

- We can see Live PV data in overview page which is coming from down level device.
- Live data will update for every 10 seconds.

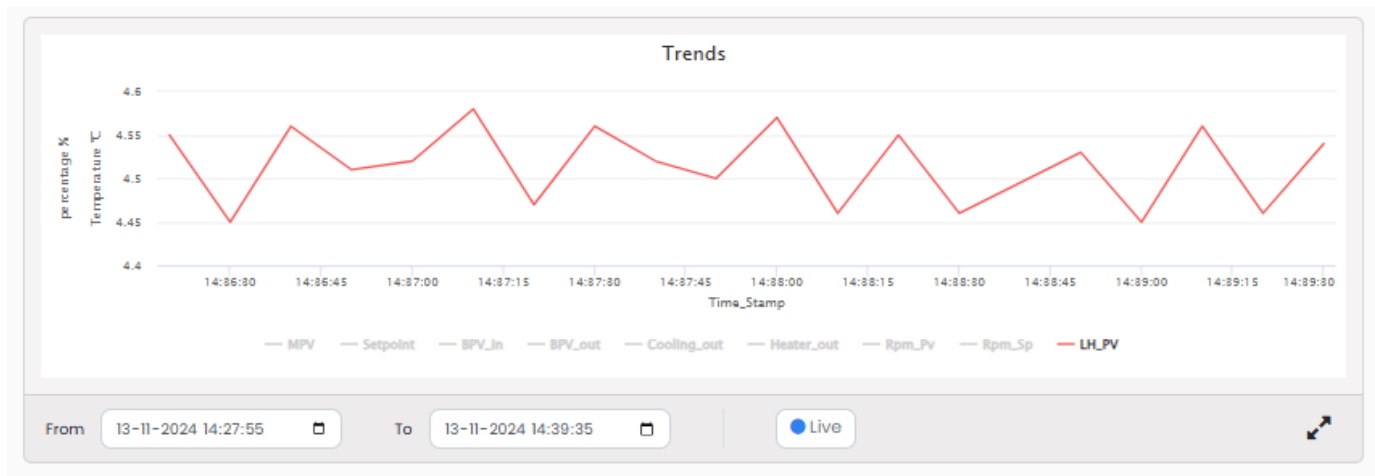


### 4.1.2 Live graph

- We can see live data in graph, graph will update for every 10 seconds.
- We can see different parameters data in single graph.

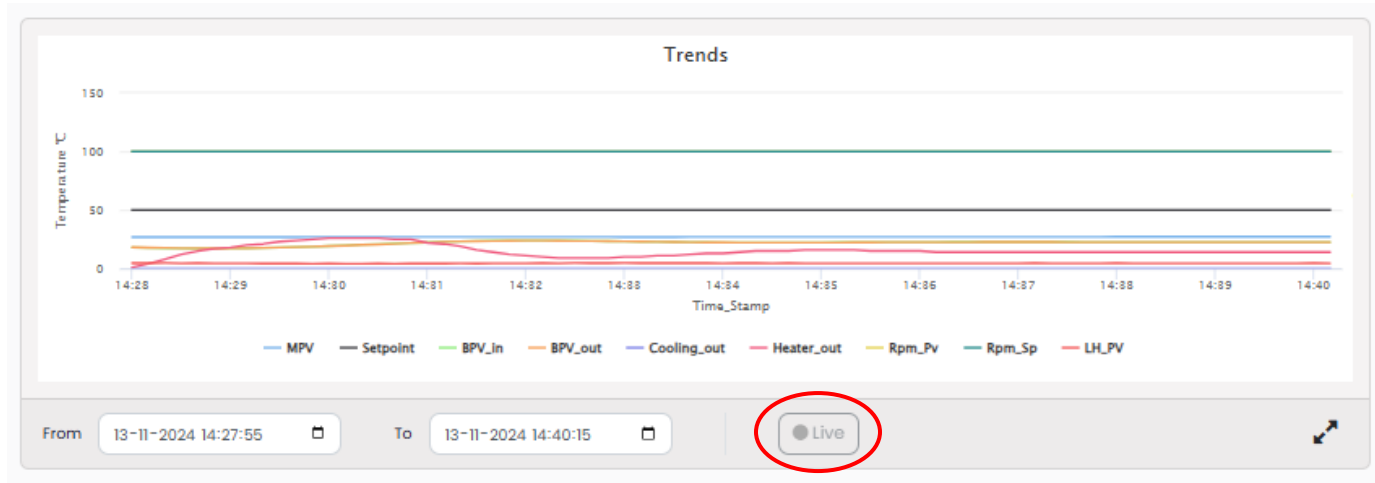


- We can select particular x axis parameter as shown in below screen



#### 4.1.3 Historical graph

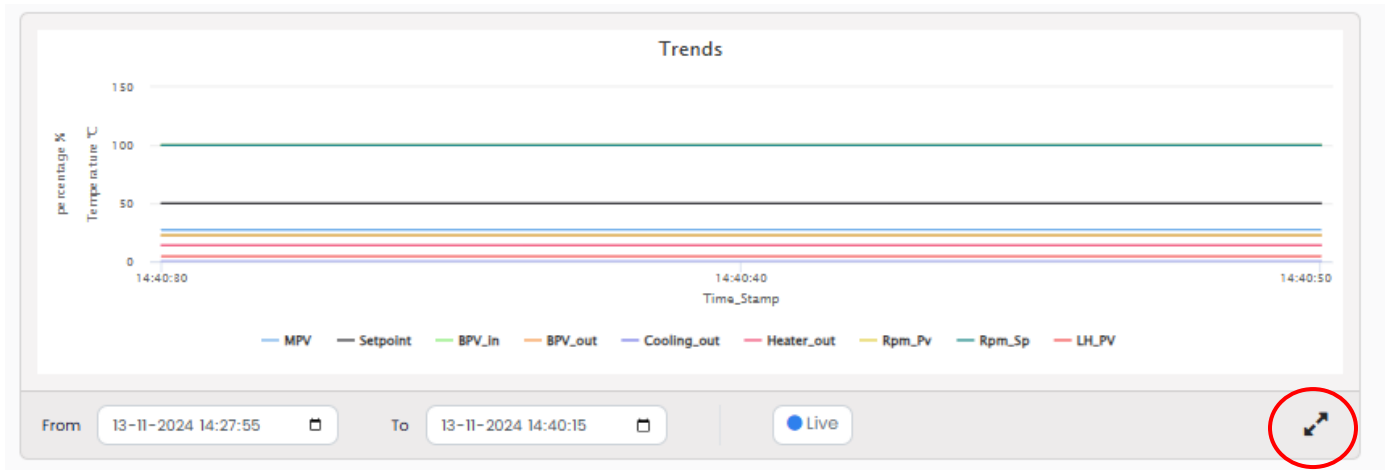
- We can also see historical data in graph.
- By selecting from and to date in Filters, we can see the historical data between the selected time period.
- Change from and to date then graph will display as shown here.



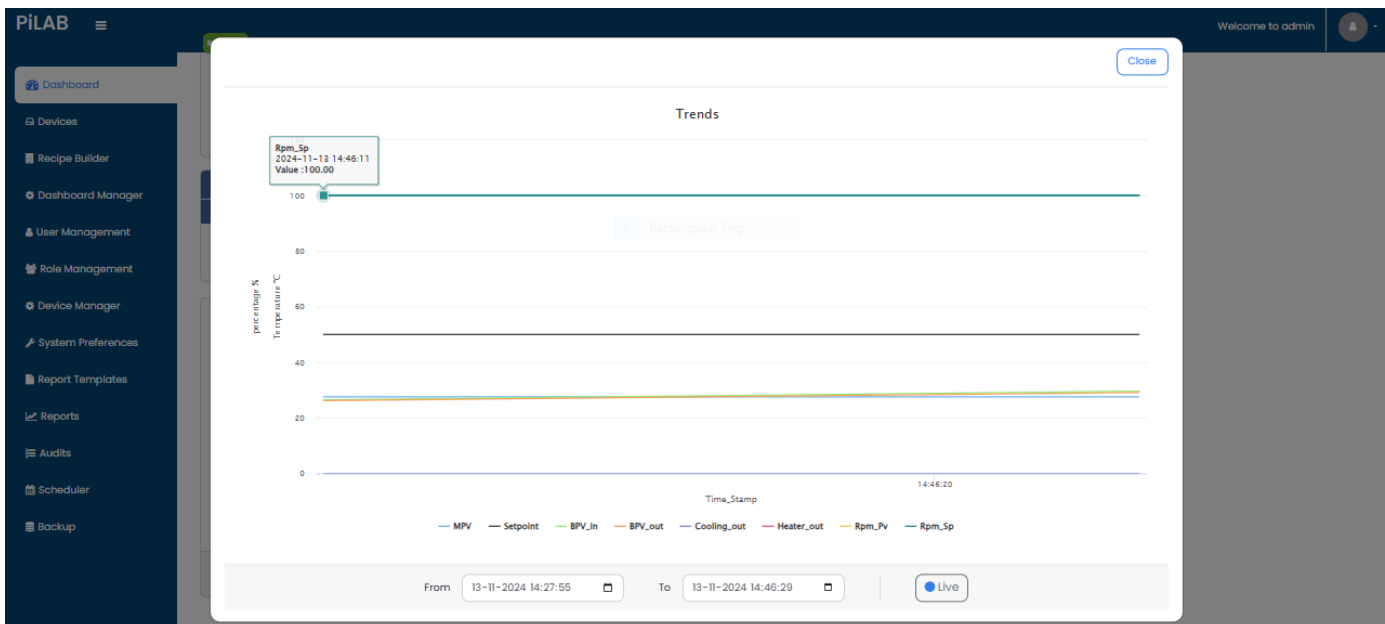
- If you click on Live button again Live data will display

#### 4.1.4 Zoom out for graph

- We increase the size of the graph using Zoom out feature.
- Click on zoom icon button as shown here.

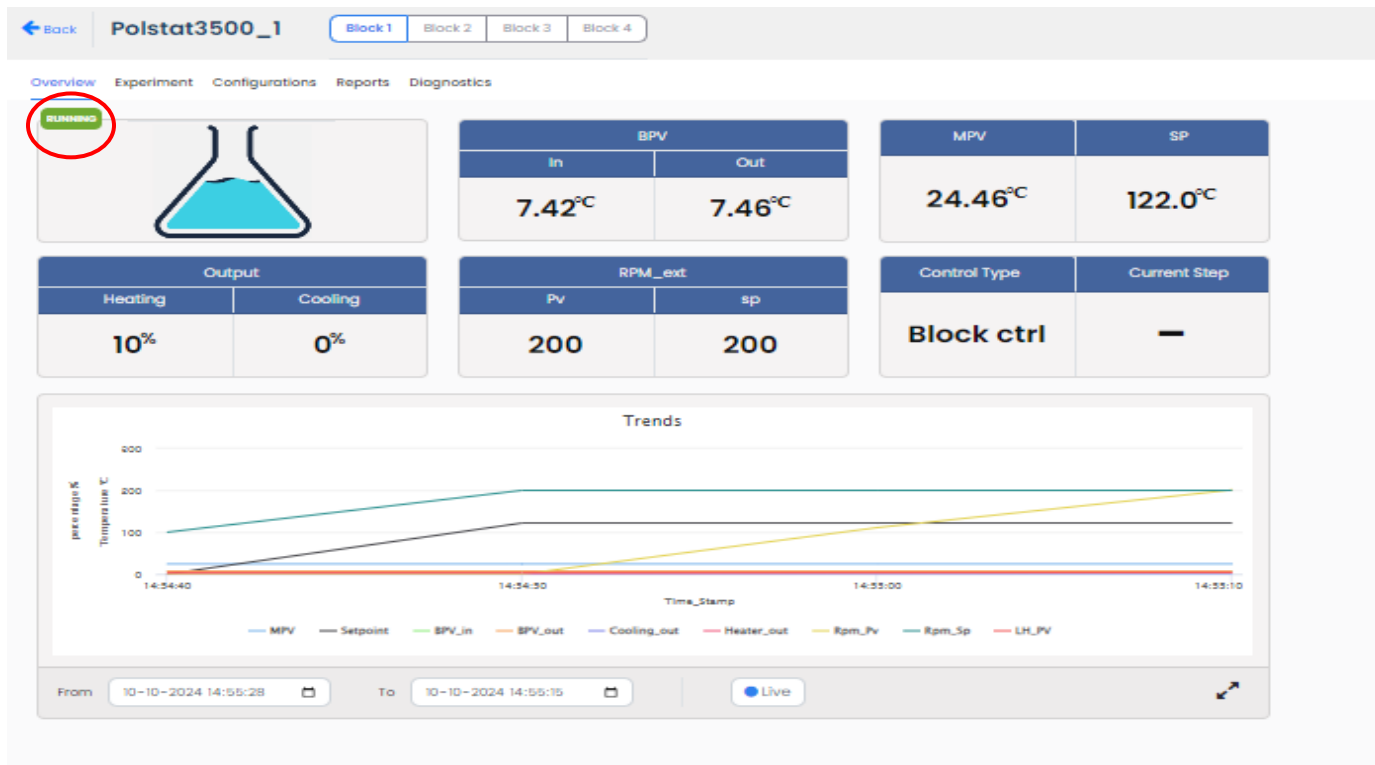


- After clicking on zoom button screen will display as shown here.



### 4.1.5 Current running status

- We can see current status of Experiment in overview page as shown here.



### 4.2 Experiment

- Click on Experiment tab then page will display as shown here.

The screenshot shows the 'Experiment' configuration page for 'Polstat3500'. The 'Experiment' tab is highlighted with a red circle. The page displays the following configuration parameters:

Manual Elapsed Time: 16 mins

Exp Name: Block1\_heating\_90 SetPoint: 90

Control Type: Block Control Ramp Rate: 2 °C / min

RPM: 260  INT  EXT

Control type	SP(°C)	Rate(°/min)	RPM
Block ctrl	50	2	100

Stirrer:  260  INT  EXT

### 4.2.1 Mode of Experiment

- We are having two modes of Experiment one is Recipe mode and the other is Manual mode.
- If experiment is not started in device then page will display as shown here.

← Back **DataLogger\_21** Block 1 Block 2 Block 3 Block 4

Overview **Experiment** Configurations Reports Diagnostics ▲

RCP  Manual Elapsed Time: 40 mins

Exp Name  Receipe

STEPS	Control type	SP	Rate	RPM (EXT)	Time	End	Status	Run Time	SKIP

RPM :    INT  EXT

- If we start experiment using recipe mode then experiment page display as shown here.

← Back **Polstat3500** Block 1 **Block 2** Block 3 Block 4

Overview **Experiment** Configurations Reports Diagnostics

RCP Elapsed Time: 1 mins

Exp Name  Receipe

STEPS	Control type	SP(°C)	Rate(°/min)	RPM (INT)	Time(mins)	End	Status	SKIP
1	Block ctrl	70	2	200	20	time	Running	<input type="button" value="No"/>
2	Block ctrl	90	2	250	20	time	Yet to start	<input type="button" value="No"/>

Stirrer :

- If we start experiment using manual mode then experiment page display as shown here.

Polstat3500

Block 1 Block 2 Block 3 Block 4

Overview Experiment Configurations Reports Diagnostics

Manual Rectangular Snip Elapsed Time: 43 mins

Exp Name: Block1\_heating\_90 SetPoint: 90

Control Type: Block Control Ramp Rate: 2 °C / min

RPM: 260  INT  EXT

Control type	SP(°C)	Rate(%/min)	RPM
Block ctrl	50	2	100

Stirrer: Start 260  INT  EXT Comments Pause Stop

#### 4.2.2 Recipe view/Edit button

- Recipe view button is used to view recipe steps.
- By saving the recipe we can send recipe details to down level device.
- Click on view button of the recipe as shown here.

Polstat3500

Block 1 Block 2 Block 3 Block 4

Overview Experiment Configurations Reports Diagnostics

RCP Elapsed Time: 1 mins

Exp Name: Block2\_heating\_recipe Recipe: recipe4

STEPS	Control type	SP(°C)	Rate(%/min)	RPM (INT)	Time(mins)	End	Status	SKIP
1	Block ctrl	70	2	200	20	time	Running	No
2	Block ctrl	90	2	250	20	time	Yet to start	No

Stirrer: Start Comments Pause Stop

- After clicking on view button dialog will open as shown here.
- Click on save button to send configuration to down level device.

View a Receipt

Receipt Id: 4349      Receipt Name: recipe4      RPM:  INT  EXT

Steps	SP	DeltaT	BSP	Bias	Rate	RPM(int)	Ctrl Type	PID	Time	End
1	70	2	2	2	2	200	Block ctrl	Fixed	20	<input type="checkbox"/> value <input checked="" type="checkbox"/> Time
2	90	2	2	2	2	250	Block ctrl	Fixed	20	<input type="checkbox"/> value <input checked="" type="checkbox"/> Time

Cancel      Save

#### 4.2.3 Recipe steps display

- If Experiment is running in recipe mode all recipe steps will display in Experiment page as shown here.

Polstat3500      Block 1      Block 2      Block 3      Block 4

Overview      Experiment      Configurations      Reports      Diagnostics

RCP      Elapsed Time: 1 mins

Exp Name: Block2\_heating\_recipe      Receipt: recipe4

STEPS	Control type	SP(°C)	Rate(%/min)	RPM (INT)	Time(mins)	End	Status	SKIP
1	Block ctrl	70	2	200	20	time	Running	No
2	Block ctrl	90	2	250	20	time	Yet to start	No

Stirrer: Start      Comments      Pause      Stop



#### 4.2.4 Current running step data

- If Experiment is running in recipe mode then current running step data will display in experiment page.

Polstat3500

Block 1 **Block 2** Block 3 Block 4

Overview **Experiment** Configurations Reports Diagnostics

RCP Elapsed Time: 1 mins

Exp Name: Block2\_heating\_recipe Recipe: recipe4

STEPS	Control type	SP(°C)	Rate(°/min)	RPM (INT)	Time(mins)	End	Status	SKIP
1	Block ctrl	70	2	200	20	time	Running	No
2	Block ctrl	90	2	250	20	time	Yet to start	No

Stirrer: Start

#### 4.2.5 Start

- Start button is used start new experiment in device block.
- If we click on Start button experiment will start.
- Enter the required data click on start button as shown below.

Polstat3500

Block 1 Block 2 Block 3 **Block 4**

Overview **Experiment** Configurations Reports Diagnostics

RCP Manual Rectangular Snip

Exp Name: Block4\_heating\_rcp Recipe: recipe4

STEPS	Control type	SP(°C)	Rate(°/min)	RPM (INT)	Time(mins)	End	Status	SKIP
1	Block ctrl	70	2	200	20	time		
2	Block ctrl	90	2	250	20	time		

Stirrer: Stop   INT  EXT

## 4.2.6 Stop

- Stop button is used to stop the experiment.
- If we click on stop button experiment will stop in device block.
- Click on stop button as shown here.

The screenshot displays the Polstat3500 control interface. At the top, there is a navigation bar with a 'Back' button and the device name 'Polstat3500'. Below this, there are tabs for 'Block 1', 'Block 2', 'Block 3', and 'Block 4', with 'Block 2' currently selected. A secondary navigation bar includes 'Overview', 'Experiment', 'Configurations', 'Reports', and 'Diagnostics', with 'Experiment' selected.

The main control area is titled 'RCP' and shows 'Elapsed Time: 1 mins'. It contains two input fields: 'Exp Name' with the value 'Block2\_heating\_recipe' and 'Receipe' with a dropdown menu showing 'recipe4'. Below these fields is a table with the following columns: STEPS, Control type, SP(°C), Rate(°/min), RPM (INT), Time(mins), End, Status, and SKIP.

STEPS	Control type	SP(°C)	Rate(°/min)	RPM (INT)	Time(mins)	End	Status	SKIP
1	Block ctrl	70	2	200	20	time	Running	No
2	Block ctrl	90	2	250	20	time	Yet to start	No

Below the table, there is a summary row with buttons for each parameter: 1, Block ctrl, 70, 2, 0, 20, time. At the bottom left, there is a 'Stirrer:' section with 'Start' and 'Comments' buttons. At the bottom right, there are 'Pause' and 'Stop' buttons, with the 'Stop' button circled in red.

#### 4.2.7 Pause

- Pause button is used to pause the experiment
- Click on pause button as shown here.

The screenshot displays the Polstat3500 control interface. At the top, there are navigation tabs for 'Block 1', 'Block 2' (selected), 'Block 3', and 'Block 4'. Below this, a menu bar includes 'Overview', 'Experiment' (selected), 'Configurations', 'Reports', and 'Diagnostics'. The main area shows the 'RCP' control panel with an 'Elapsed Time: 1 mins' indicator. It features input fields for 'Exp Name' (Block2\_heating\_recipe) and 'Receipe' (recipe4). A table lists the experimental steps:

STEPS	Control type	SP(°C)	Rate(°/min)	RPM (INT)	Time(mins)	End	Status	SKIP
1	Block ctrl	70	2	200	20	time	Running	No
2	Block ctrl	90	2	250	20	time	Yet to start	No

Below the table, there are input fields for step 1: 1, Block ctrl, 70, 2, 0, 20, time. At the bottom, there are buttons for 'Stirrer: Start', 'Comments', and 'Pause' (highlighted with a red circle), and a 'Stop' button.

## 4.2.8 Stirrer

- Manual Stirrer starts only before the experiment or after the experiment
- Start**
- When stirrer start below screen will display and it rotates with given number(as per below screen)per minute

The screenshot shows the 'Manual' control interface for a stirrer. At the top right, it says 'Elapsed Time: mins'. Below this, there are input fields for 'Exp Name' (Block1\_heating\_135) and 'SetPoint' (135). Underneath, 'Control Type' is set to 'Block Control' and 'Ramp Rate' is set to '2 °C / min'. The 'RPM' field is set to '200', with radio buttons for 'INT' and 'EXT' (the 'EXT' option is selected). At the bottom, there is a 'Stirrer:' label followed by a 'Start' button, a '200' RPM input field, and 'INT'/'EXT' radio buttons. A red circle highlights the 'Start' button and the '200' RPM field. To the right of these are 'Comments', 'Pause', and 'Stop' buttons.

- **Stop**
- When stirrer is stop below screen will display

This screenshot shows the same 'Manual' control interface as above, but the 'Stirrer:' label now has a 'Stop' button highlighted with a red circle. The 'Start' button is no longer visible, and the '200' RPM field is now empty. The 'INT' and 'EXT' radio buttons are also present but not selected. The rest of the interface, including the 'Exp Name', 'SetPoint', 'Control Type', 'Ramp Rate', and 'RPM' fields, remains the same.

## 4.2.9 Elapsed Time

- Elapsed time is defined as the difference between starting time of experiment and current time.
- It will come from down level device.
- Elapsed time is shown here.

← Back Polstat3500 Block 1 **Block 2** Block 3 Block 4

Overview Experiment Configurations Reports Diagnostics

● RCP Elapsed Time: 1 mins

Exp Name: Block2\_heating\_recipe      Recepte: recipe4

STEPS	Control type	SP(°C)	Rate(°/min)	RPM (INT)	Time(mins)	End	Status	SKIP
1	Block ctrl	70	2	200	20	time	Running	No
2	Block ctrl	90	2	250	20	time	Yet to start	No

1    Block ctrl    70    2    0    20    time

Stirrer: Start Comments Pause Stop

#### 4.2.10 Comments

- Comments feature is used to write comments for experiment.
- Click on comments button as shown here.

Overview [Experiment](#) Configurations Reports Diagnostics

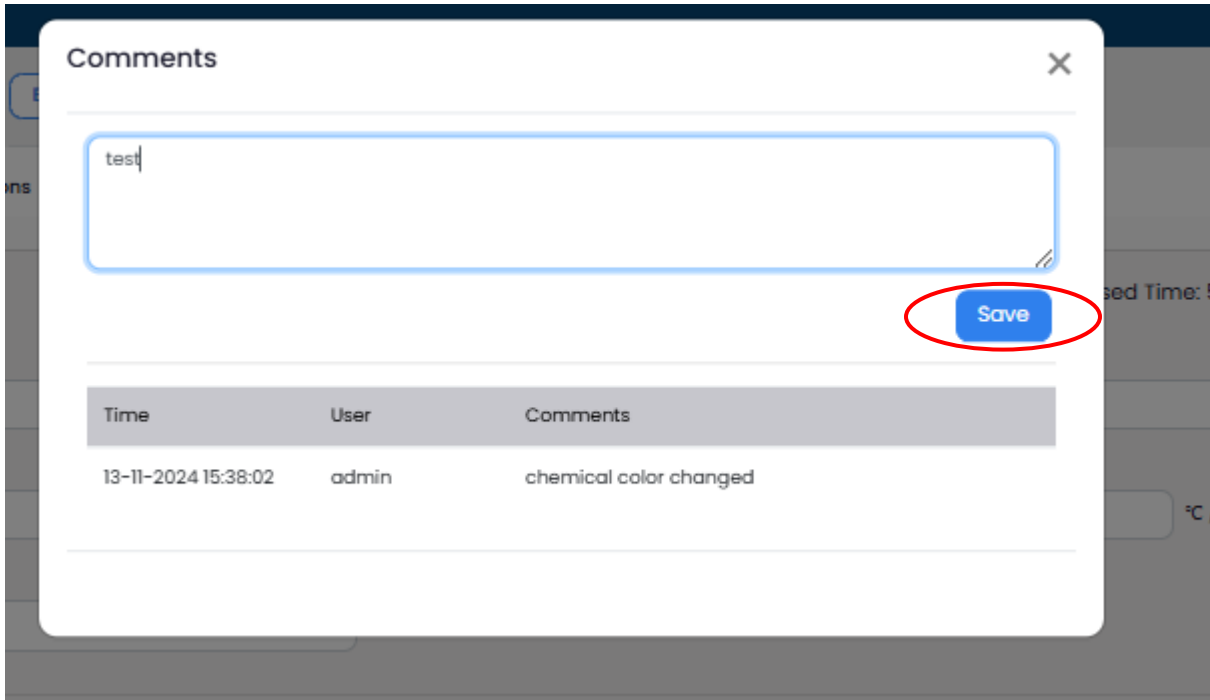
The screenshot shows the 'Manual' control interface for an experiment. At the top right, it indicates 'Elapsed Time: 53 mins'. The interface includes several input fields: 'Exp Name' (Block1\_heating\_90), 'SetPoint' (90), 'Control Type' (Block Control), 'Ramp Rate' (2 °C / min), and 'RPM' (260). Below these, there are summary buttons for 'Control type', 'SP(°C)', 'Rate(°/min)', and 'RPM'. At the bottom, there is a 'Stirrer' section with a 'Start' button, a value of 260, and radio buttons for 'INT' and 'EXT'. A blue 'Comments' button with a speech bubble icon is circled in red. To its right are 'Pause' and 'Stop' buttons.

- After clicking on comments button dialog will open as shown here.

The 'Comments' dialog box is open, featuring a text input field at the top. Below the input field is a blue 'Save' button. At the bottom of the dialog, there is a table with the following data:

Time	User	Comments
13-11-2024 15:38:02	admin	chemical color changed

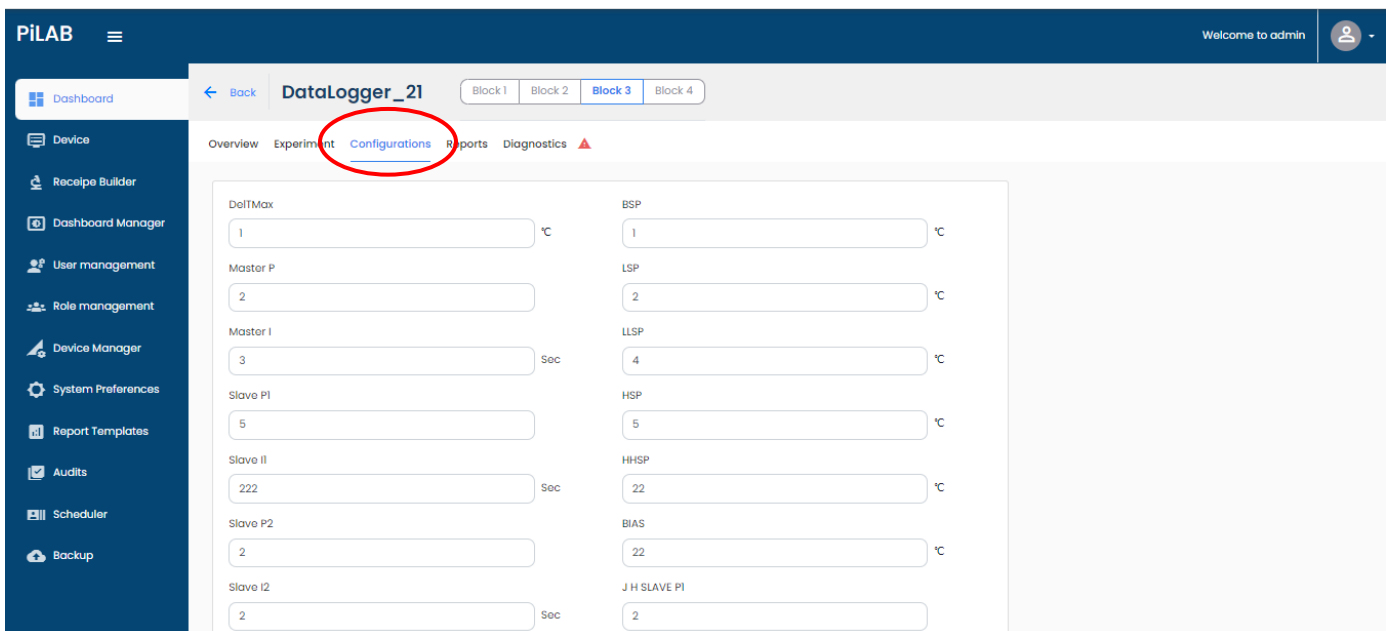
- Now enter comment click on save comment button as shown here.
- Then comment will save.



## 4.3 Configurations

### 4.3.1 Save Configurations

- Configurations page contain all configuration parameters needed for device as shown here.



- Click on save button to save all configurations.

The screenshot shows the PiLAB configuration interface. On the left is a navigation menu with options like Dashboard, Device, Recipe Builder, Dashboard Manager, User management, Role management, Device Manager, System Preferences, Report Templates, Audits, Scheduler, and Backup. The main area contains configuration fields for Master I, Slave P1, Slave I1, Slave P2, Slave I2, J H SLAVE I1, and J C SLAVE I2. Each field has a numerical input, a unit (Sec or °C), and a label. A 'Save' button is circled in red at the bottom right of the configuration area.

#### 4.4 Reports

- In reports page we can download reports and we can also view reports directly.

The screenshot shows the Reports page in PiLAB. The 'Reports' tab is circled in red. The page features a 'Report Templates' dropdown menu set to 'Custom Report'. Below it is a list of checkboxes for various data points: SP(°C), MPV(°C), BPV\_IN(°C), BPV\_OUT(°C), CONTROL\_TYPE, Ramp\_Rate(deg/min), RPM\_SP, RPM\_PV, PELTIER\_OUTPUT(%), HEATER\_OUTPUT(%), M\_PID\_RESULT(%), M\_P\_TERM, M\_I\_TERM, JACKET\_SP(°C), CURRENT\_RAMP\_SP(°C), J\_P\_TERM, J\_I\_TERM, LH\_PV, and RESET\_SOURCE. There is a 'Sampling Interval' field and a 'Select..' dropdown. At the bottom, there are 'From' and 'To' date/time pickers, and two buttons: 'View Reports' and 'Download Reports'.

- We can download reports when experiment is running or experiment is stopped.



## Report Templates Filter

- There are 2 types of report templates
  1. Custom reports.
  2. Manual reports.
- In custom reports we directly select required parameters and download the report.
- Manual reports are created in reports page those created reports will display under templates dropdown.
- If we click on report templates dropdown reports will display as shown here.

The screenshot shows the Polstat3500 interface with the 'Reports' tab selected. The 'Report Templates' dropdown menu is highlighted with a red circle. Below it, there is a 'Template\_Filter' dropdown, a 'Sampling Interval' input field, and a 'Select..' dropdown. The 'From' and 'To' date and time filters are set to '13-11-2024 14:27:55' and '13-11-2024 15:47' respectively. At the bottom, there are 'View Reports' and 'Download Reports' buttons.

## From and To date Filters

- From and to date Filters are used to download reports between the selected duration of time.
- From time is the experiment start time and to time is the current time as shown.

The screenshot shows the Polstat3500 interface with the 'Reports' tab selected. The 'Report Templates' dropdown menu is highlighted with a red circle. Below it, there is a 'Template\_Filter' dropdown, a 'Sampling Interval' input field, and a 'Select..' dropdown. The 'From' and 'To' date and time filters are set to '13-11-2024 14:27:55' and '13-11-2024 15:47' respectively. At the bottom, there are 'View Reports' and 'Download Reports' buttons.

#### 4.4.1 View Report

- We can view the reports between selected periods of time.
- Report view contains recipe data, graph and parameter data.
- Select report template change from and to date click on view reports as shown.

Polstat3500

Block 1 Block 2 Block 3 Block 4

Overview Experiment Configurations **Reports** Diagnostics

Report Templates

first floor

Sampling Interval : 10 Secs

From 13-11-2024 14:27:55 To 13-11-2024 15:48:28

View Reports Download Reports

- After clicking on view reports button report will display as shown here.

PiLAB

Welcome to admin

Device Name: DataLogger\_21\_Block3

Recipe : more recipe

Step	Control Type	SP	Rate	RPM	DeltaT	BSP	Bias	Time	End
1	Jacket Control	10	2	4	1	1	1	10	value
2	Jacket Control	1	1	1	2	2	2	11	time

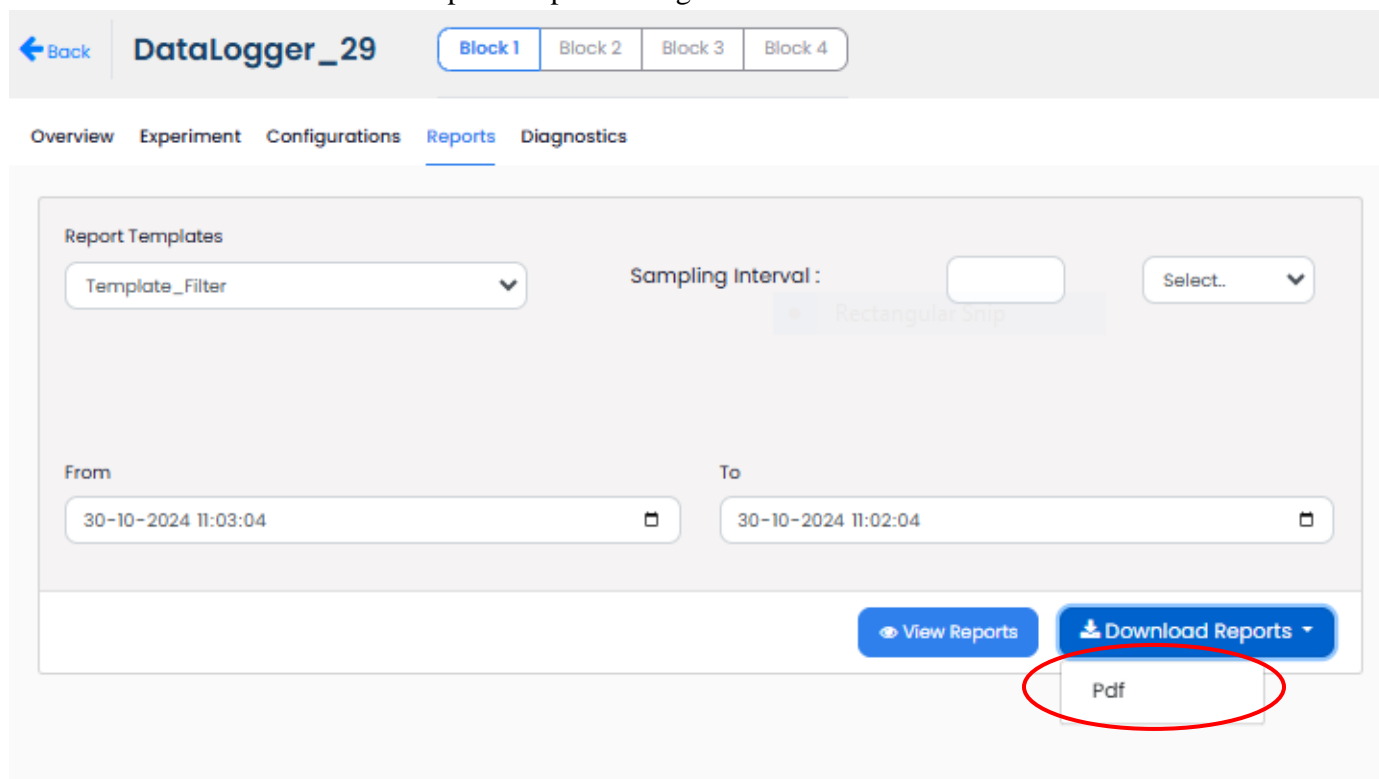
Trend Data

Graph showing Temperature (°C) vs Time (h). The y-axis ranges from 34 to 52. The x-axis ranges from 0 to 11. A horizontal line is plotted at approximately 50°C.

Cancel

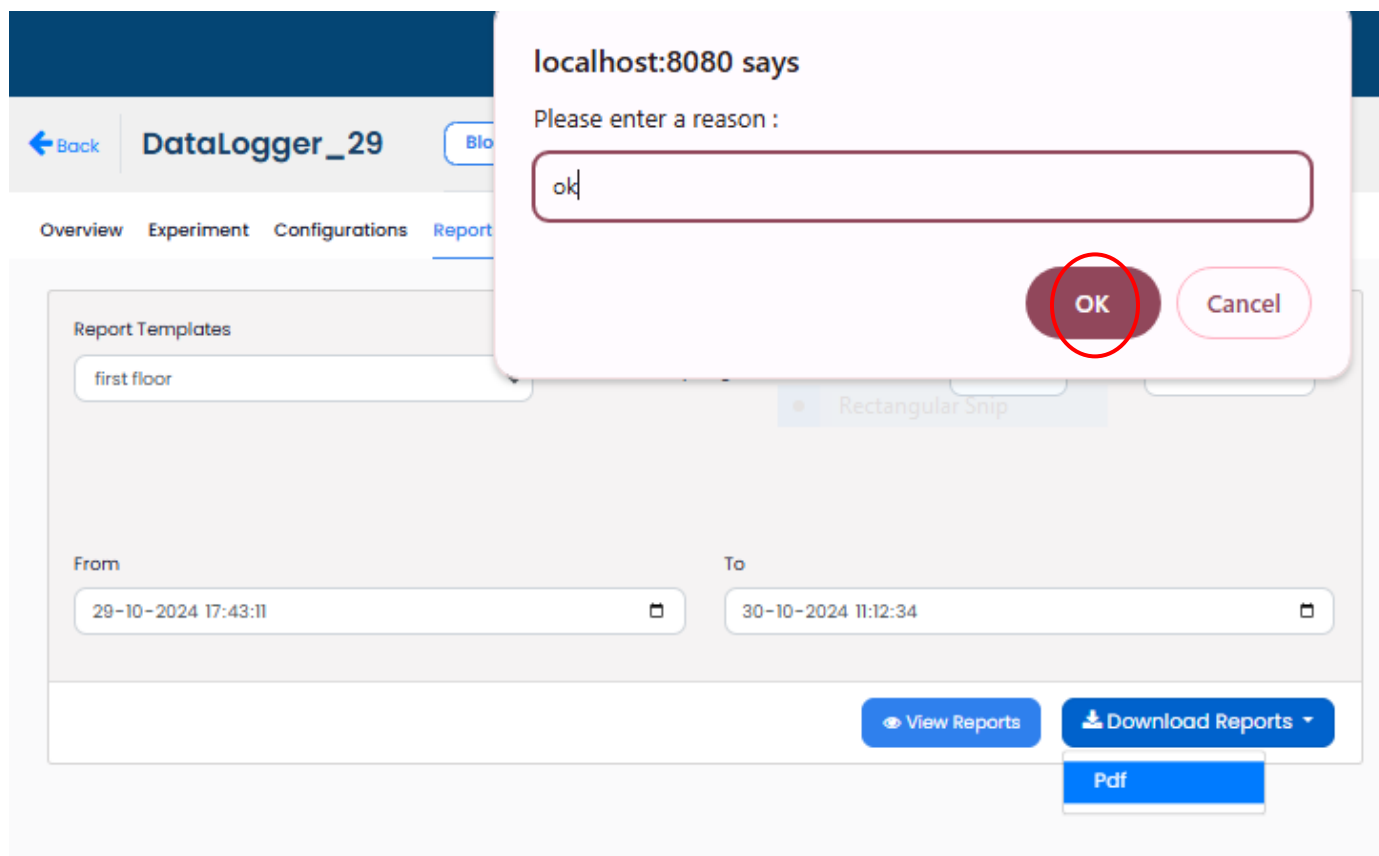
#### 4.4.2 Download Reports

- We can download reports between selected time periods.
- Downloaded report will contain recipe data, graph, parameter data and comments.
- Select report template change from and to date then click on download button as shown.

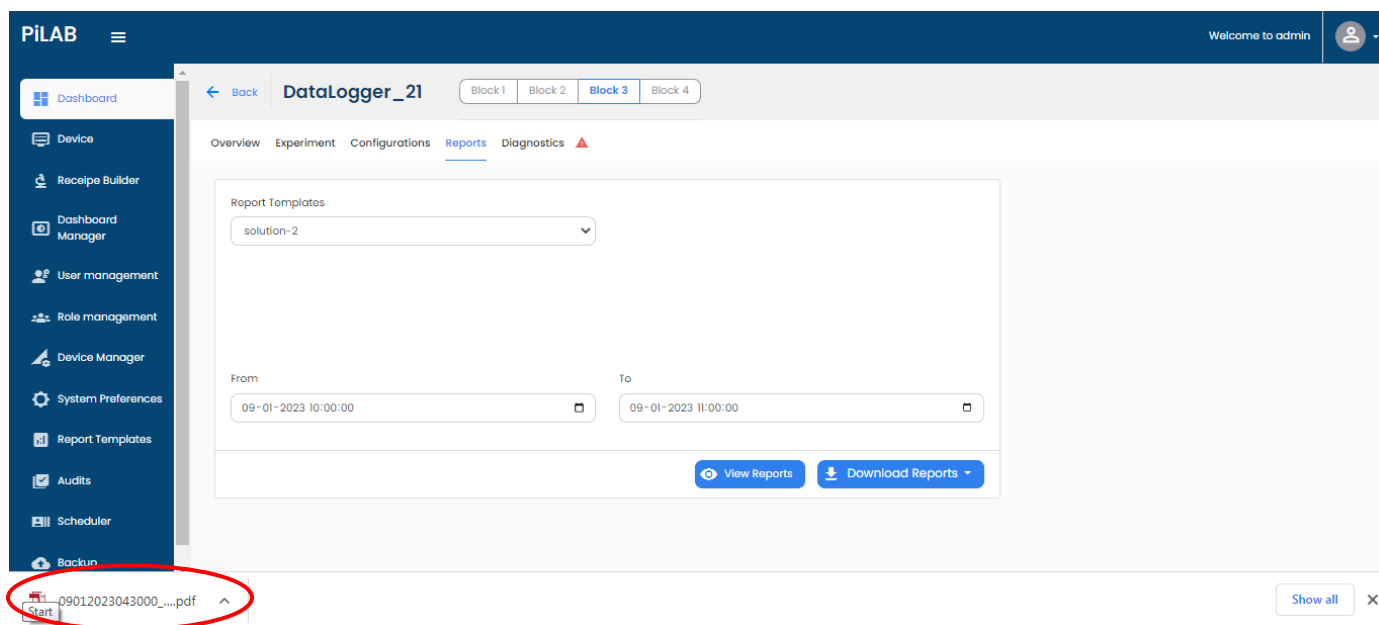


The screenshot displays the 'DataLogger\_29' interface. At the top, there are navigation tabs for 'Block 1', 'Block 2', 'Block 3', and 'Block 4'. Below this, a menu bar includes 'Overview', 'Experiment', 'Configurations', 'Reports', and 'Diagnostics'. The 'Reports' section is active, showing a 'Report Templates' dropdown set to 'Template\_Filter'. A 'Sampling Interval' field is present with a 'Select..' dropdown. Below these are 'From' and 'To' date pickers, both set to '30-10-2024 11:03:04' and '30-10-2024 11:02:04' respectively. At the bottom right, there are two buttons: 'View Reports' and 'Download Reports'. The 'Download Reports' button is highlighted with a red circle, and its dropdown menu is open, showing the 'Pdf' option selected.

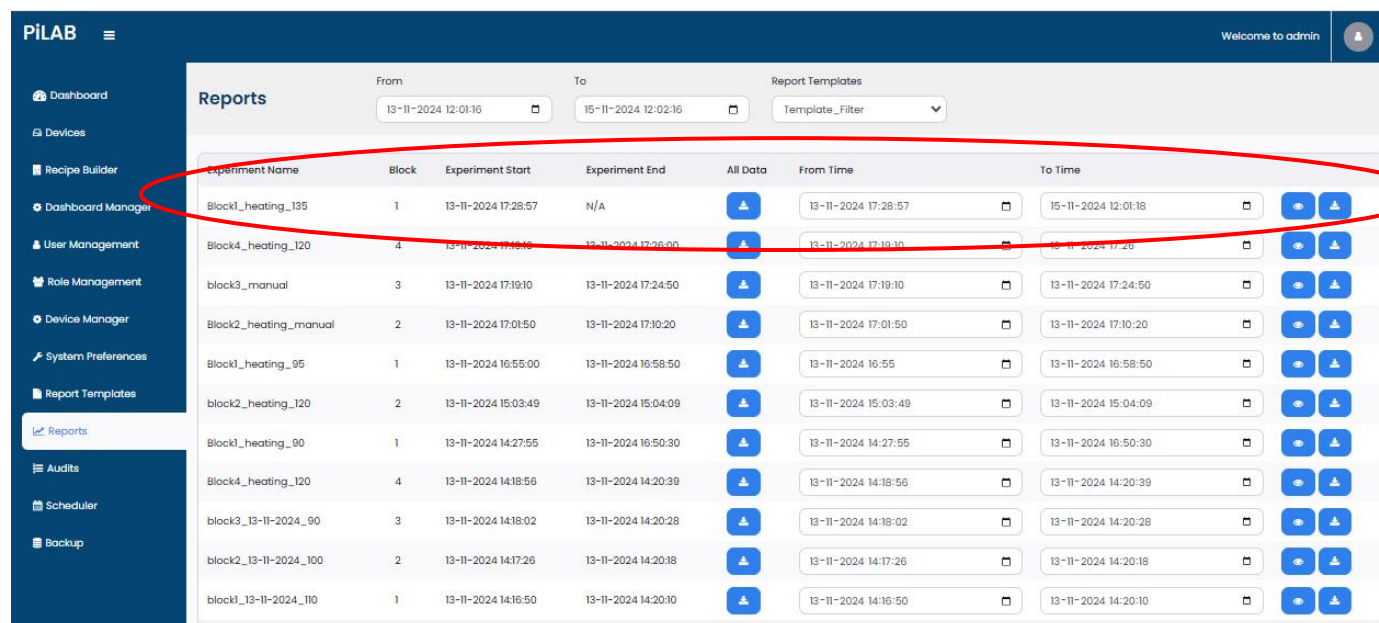
- Then click on PDF shown and enter reason and click OK as shown.



- Then report will download as shown here.



When the experiment begins, an experiment record will be created as shown on the screen below



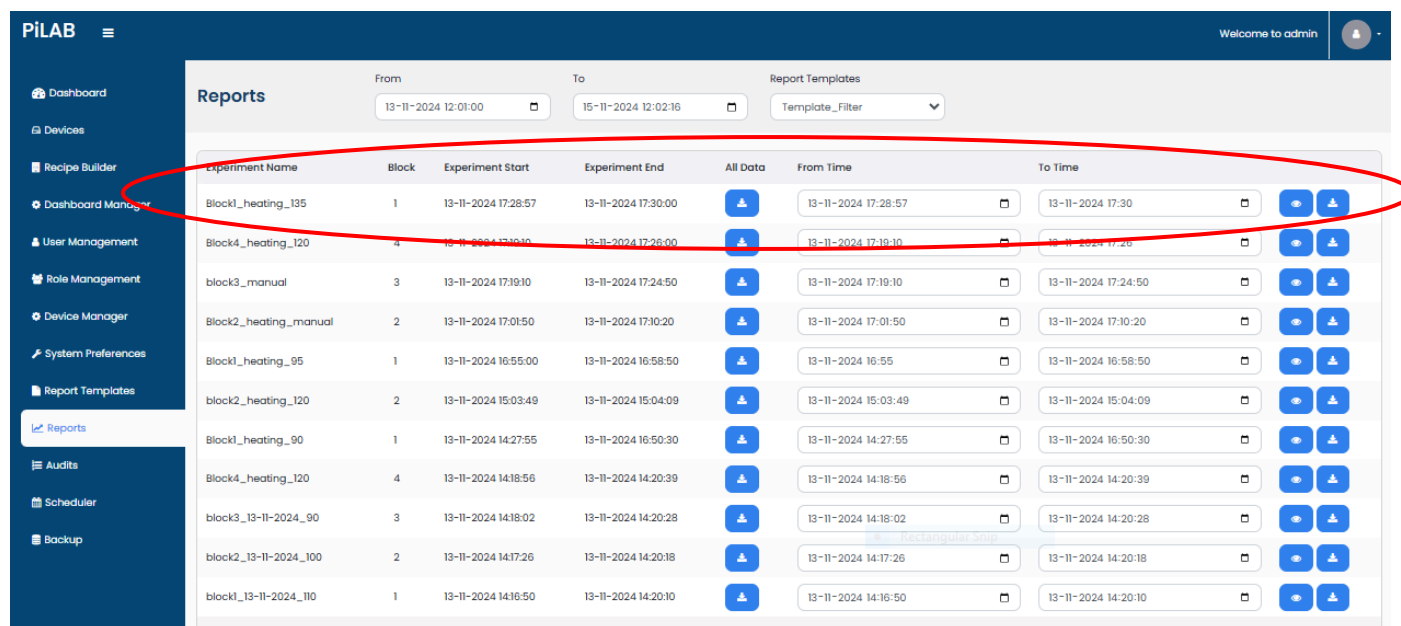
Experiment Name	Block	Experiment Start	Experiment End	All Data	From Time	To Time
Block1_heating_135	1	13-11-2024 17:28:57	N/A		13-11-2024 17:28:57	15-11-2024 12:01:18
Block4_heating_120	4	13-11-2024 17:19:10	13-11-2024 17:26:00		13-11-2024 17:19:10	13-11-2024 17:26:00
block3_manual	3	13-11-2024 17:19:10	13-11-2024 17:24:50		13-11-2024 17:19:10	13-11-2024 17:24:50
Block2_heating_manual	2	13-11-2024 17:01:50	13-11-2024 17:10:20		13-11-2024 17:01:50	13-11-2024 17:10:20
Block1_heating_95	1	13-11-2024 16:55:00	13-11-2024 16:58:50		13-11-2024 16:55	13-11-2024 16:58:50
block2_heating_120	2	13-11-2024 15:03:49	13-11-2024 15:04:09		13-11-2024 15:03:49	13-11-2024 15:04:09
Block1_heating_90	1	13-11-2024 14:27:55	13-11-2024 16:50:30		13-11-2024 14:27:55	13-11-2024 16:50:30
Block4_heating_120	4	13-11-2024 14:18:56	13-11-2024 14:20:39		13-11-2024 14:18:56	13-11-2024 14:20:39
block3_13-11-2024_90	3	13-11-2024 14:18:02	13-11-2024 14:20:28		13-11-2024 14:18:02	13-11-2024 14:20:28
block2_13-11-2024_100	2	13-11-2024 14:17:26	13-11-2024 14:20:18		13-11-2024 14:17:26	13-11-2024 14:20:18
block1_13-11-2024_110	1	13-11-2024 14:16:50	13-11-2024 14:20:10		13-11-2024 14:16:50	13-11-2024 14:20:10



## NOTE:

- If the experiment has not yet ended, the "Experiment End" column will display "N/A" and the "To Time" column will show the current time.

When experiment completed, below screen will display.



Experiment Name	Block	Experiment Start	Experiment End	All Data	From Time	To Time
Block1_heating_135	1	13-11-2024 17:28:57	13-11-2024 17:30:00		13-11-2024 17:28:57	13-11-2024 17:30
Block4_heating_120	4	13-11-2024 17:19:10	13-11-2024 17:26:00		13-11-2024 17:19:10	13-11-2024 17:26
block3_manual	3	13-11-2024 17:19:10	13-11-2024 17:24:50		13-11-2024 17:19:10	13-11-2024 17:24:50
Block2_heating_manual	2	13-11-2024 17:01:50	13-11-2024 17:10:20		13-11-2024 17:01:50	13-11-2024 17:10:20
Block1_heating_95	1	13-11-2024 16:55:00	13-11-2024 16:58:50		13-11-2024 16:55	13-11-2024 16:58:50
block2_heating_120	2	13-11-2024 15:03:49	13-11-2024 15:04:09		13-11-2024 15:03:49	13-11-2024 15:04:09
Block1_heating_90	1	13-11-2024 14:27:55	13-11-2024 16:50:30		13-11-2024 14:27:55	13-11-2024 16:50:30
Block4_heating_120	4	13-11-2024 14:18:56	13-11-2024 14:20:39		13-11-2024 14:18:56	13-11-2024 14:20:39
block3_13-11-2024_90	3	13-11-2024 14:18:02	13-11-2024 14:20:28		13-11-2024 14:18:02	13-11-2024 14:20:28
block2_13-11-2024_100	2	13-11-2024 14:17:26	13-11-2024 14:20:18		13-11-2024 14:17:26	13-11-2024 14:20:18
block1_13-11-2024_110	1	13-11-2024 14:16:50	13-11-2024 14:20:10		13-11-2024 14:16:50	13-11-2024 14:20:10

click on all data button as below screen.

When click on all data button below report will be download

DATE & TIME		Block1					Block2					Block3					Block4							
	Mpv	B In	B out	H out	C_out	LH Pv	Mpv	B In	B out	H out	C_out	LH Pv	Mpv	B In	B out	H out	C_out	LH Pv	Mpv	B In	B out	H out	C_out	LH Pv
13-11-2024 17:29:00	28.70	7.42	7.54	0	0	4.31	28.67!	8.27	8.33	0	0	4.54	28.52!	19.44	Open	0	0	5.91	28.49!	25.24	25.07	0	0	5.69
13-11-2024 17:29:10	28.71	7.40	7.52	2	0	4.29	28.67!	8.24	8.30	0	0	4.47	28.52!	19.22	Open	0	0	5.86	28.50!	24.70	24.55	0	0	5.62
13-11-2024 17:29:20	28.69	7.39	7.51	4	0	4.39	28.66!	8.19	8.27	0	0	4.56	28.52!	18.89	Open	0	0	5.91	28.51!	24.35	24.21	0	0	5.66
13-11-2024 17:29:30	28.68	7.38	7.50	6	0	4.20	28.66!	8.16	8.23	0	0	4.42	28.52!	18.68	Open	0	0	5.88	28.52!	23.87	23.73	0	0	5.64
13-11-2024 17:29:40	28.67	7.38	7.50	9	0	4.30	28.65!	8.12	8.20	0	0	4.48	28.52!	18.39	Open	0	0	5.82	28.51!	23.56	23.42	0	0	5.58
13-11-2024 17:29:50	28.66	7.47	7.57	11	0	4.32	28.64!	8.09	8.16	0	0	4.51	28.52!	18.19	Open	0	0	5.89	28.53!	23.10	23.12	0	0	5.63
13-11-2024 17:30:00	28.68	7.60	7.69	14	0	4.08	28.67!	8.07	8.13	0	0	4.40	28.54!	17.90	Open	0	0	5.82	28.54!	22.80	22.67	0	0	5.53

Remarks :


Reviewed By : \_\_\_\_\_ Date : \_\_\_\_\_

Rectangular Snip

Note:-! -Experiment Stop,# -Chiller Temp out of range and \* -Experiment Pause

## 4.5 Diagnostics

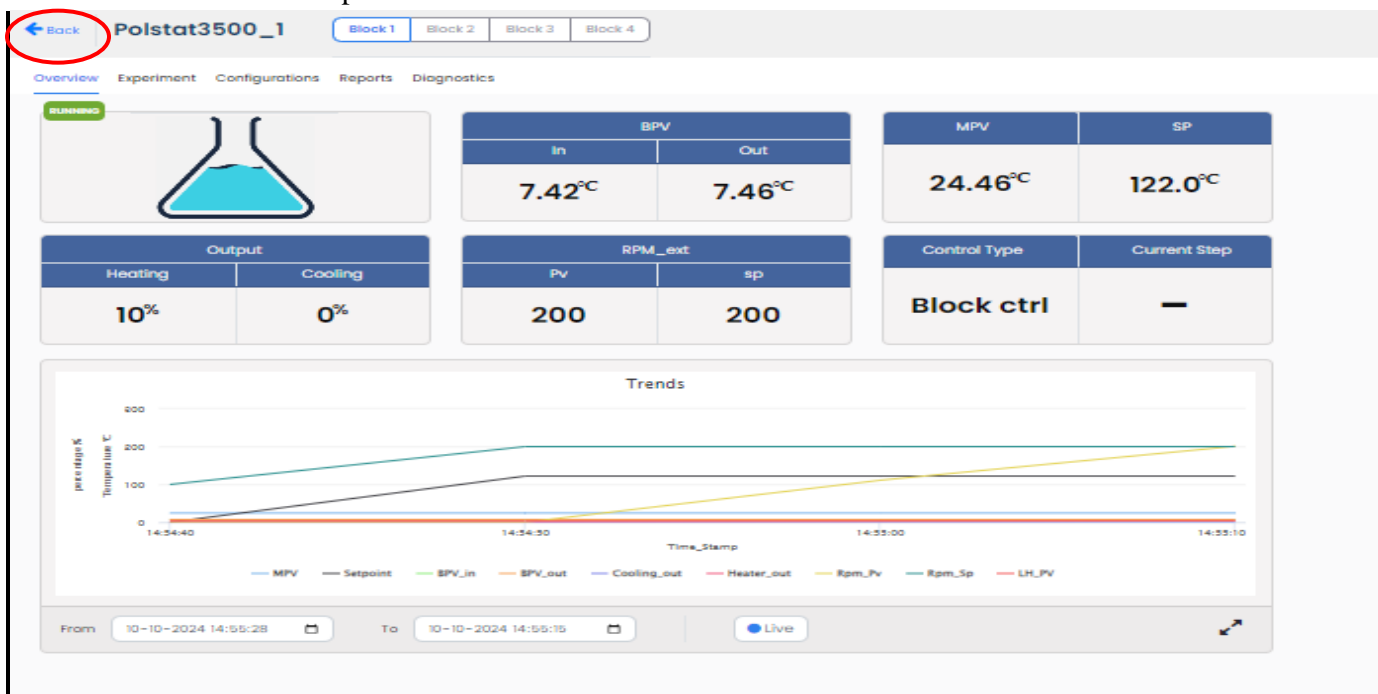
- In Diagnostics page device parameters status will display.
- If we go to diagnostics tab below page will display.

Overview Experiment Configurations Reports **Diagnostics** 

Components	Status
Block_IN_RTD	OK <span>Rectangular Snip</span>
Block_OUT_RTD	OK
MASS_RTD	OK
Heater	OK
Cooling	OK
LH_PV	4.20 <span>Chiller Temperature Out Of Range</span>
Emergency stop switch	Connected

## 4.6 Back button





- Back button is present in blocks screen as shown here.



- If we click on back button it will redirects to the home screen as shown here.

first floor lab


Polstat3500

Block1_heating_90 Manual	Experiment 2 Recipe	Experiment 3 Recipe	Experiment 4 Recipe
<b>RUNNING</b>	<b>STOPPED</b>	<b>STOPPED</b>	<b>STOPPED</b>
			
MPV °C 26.87	MPV °C 26.84	MPV °C 26.70	MPV °C 27.07
BPV °C 17.12	BPV °C 16.45	BPV °C 16.57	BPV °C 14.28
SP °C 50.0	SP °C -	SP °C -	SP °C -
RPM 100	RPM 0	RPM 0	RPM 0

## 5. Device





### 1. Device Page

- When we go to Device in side bar all devices will display which are created as shown here.

PiLAB ☰ Welcome to admin 

Dashboard **Devices** + Create new Device

**Device**

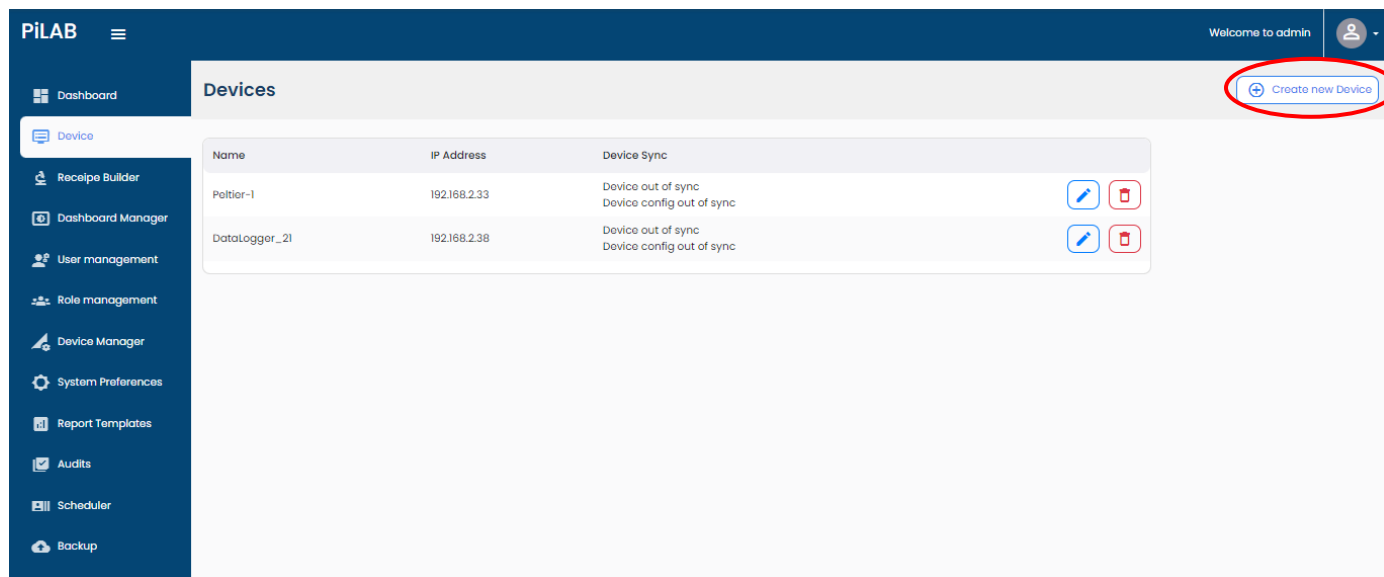
Name	IP Address	Device Sync	
Peltier-1	192.168.2.33	Device out of sync Device config out of sync	 
Datalogger_21	192.168.2.38	Device out of sync Device config out of sync	 

Recipe Builder  
Dashboard Manager  
User management  
Role management  
Device Manager  
System Preferences  
Report Templates  
Audits  
Scheduler  
Backup

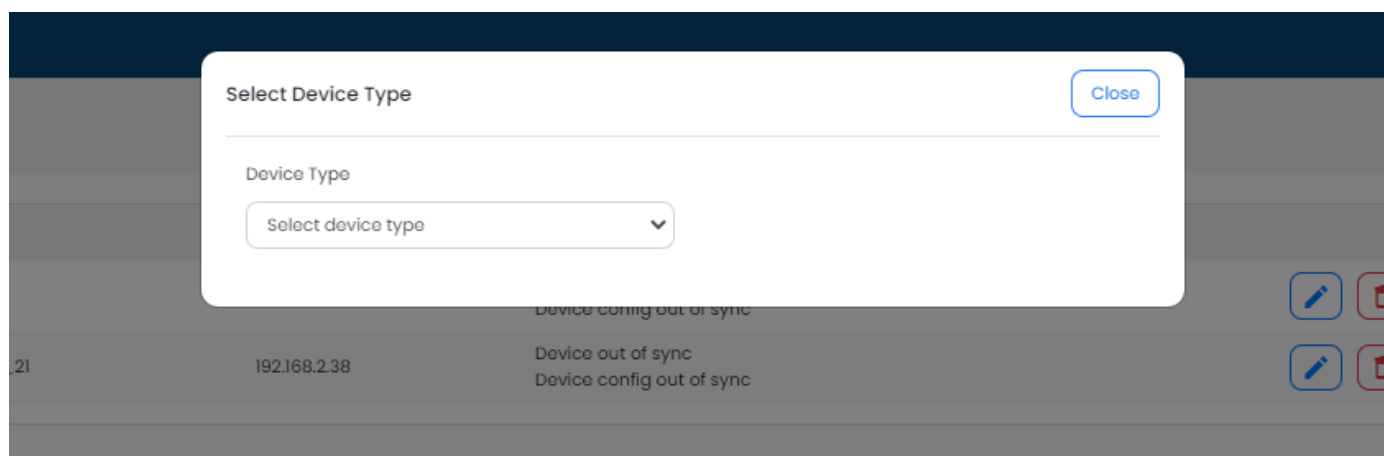


## 2. Device Creation

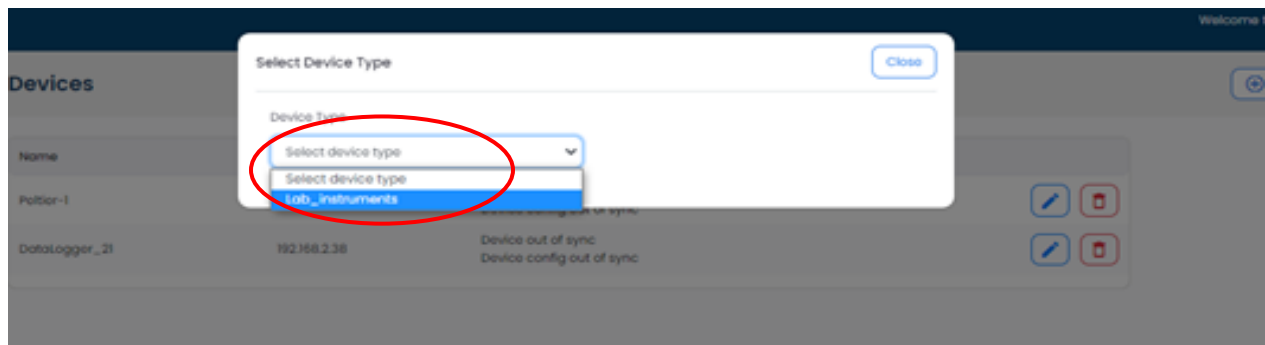
- Click on Create new Device button to create device as shown.



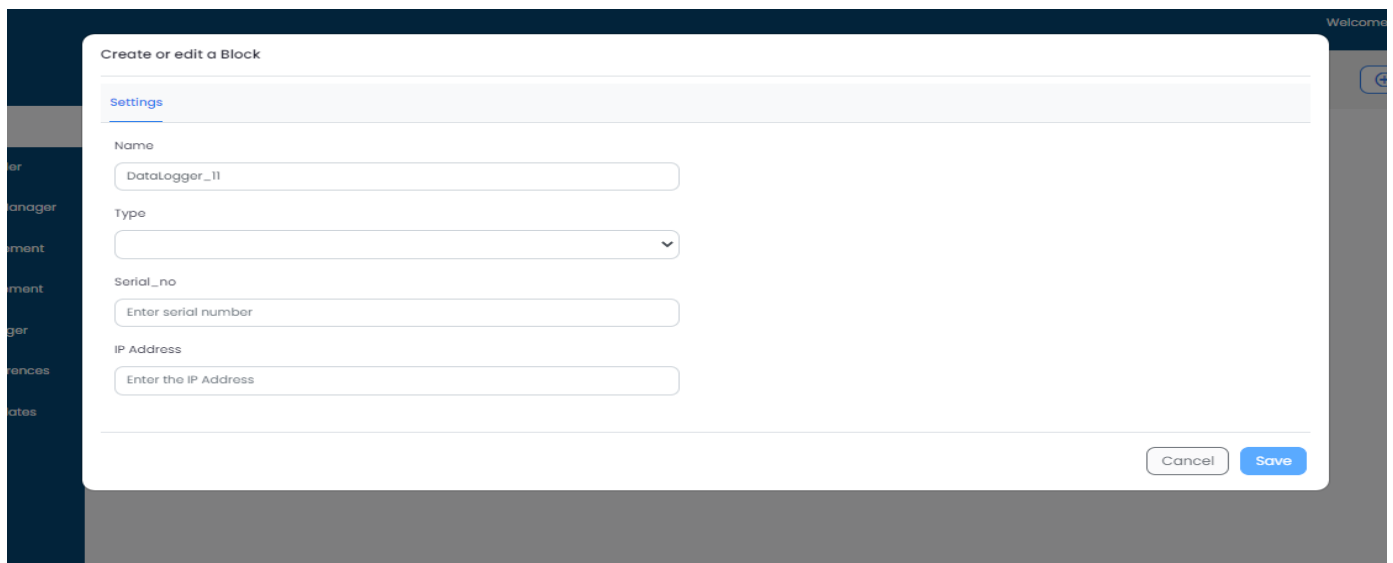
- After clicking on Create new Device button Dialog will open as shown here.



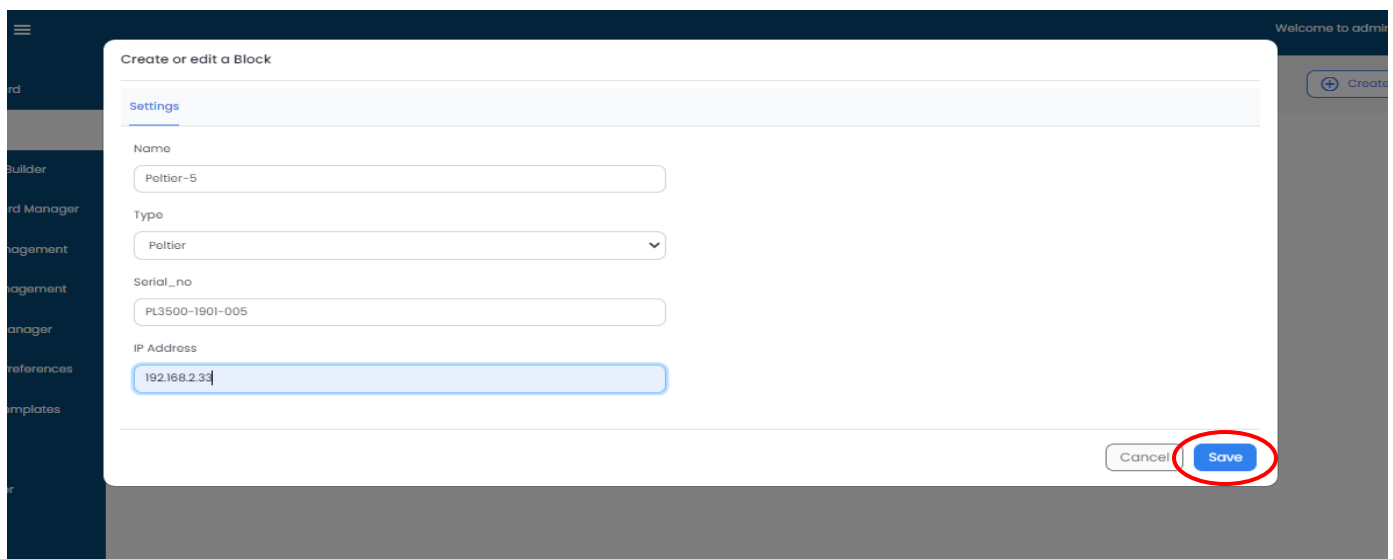
- Now select device type as Lab Instruments as shown.



- After selecting Lab Instruments below dialog will open as shown here.

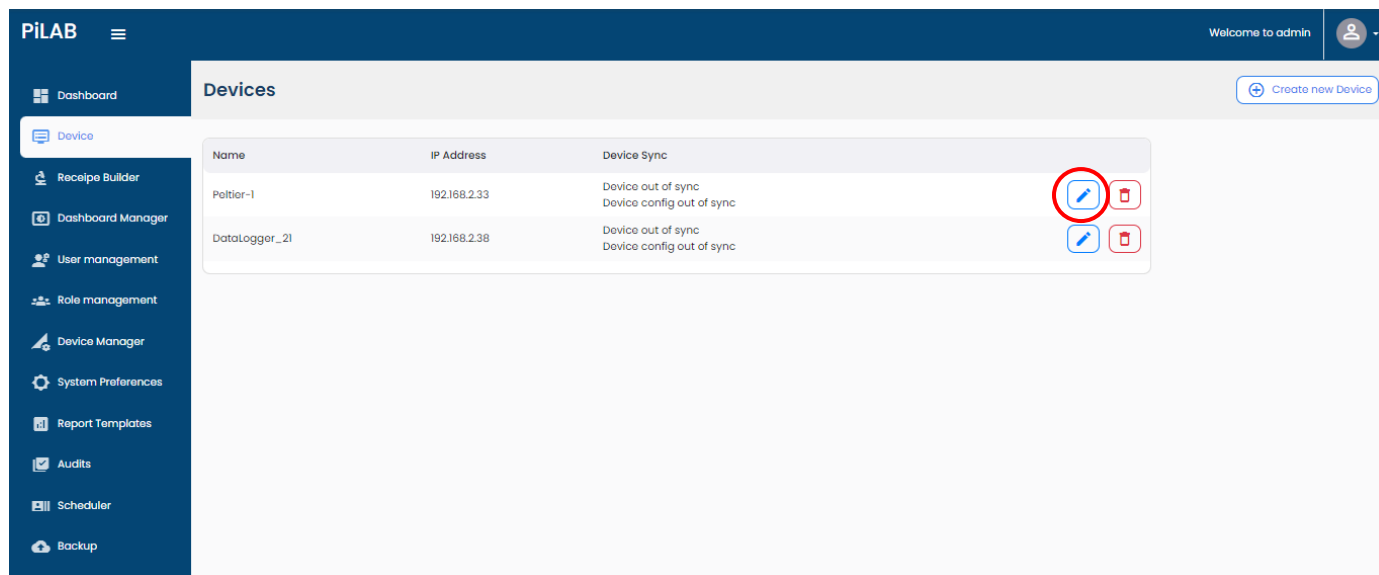






- Now enter required details click on save button as shown.
- Then device will save.



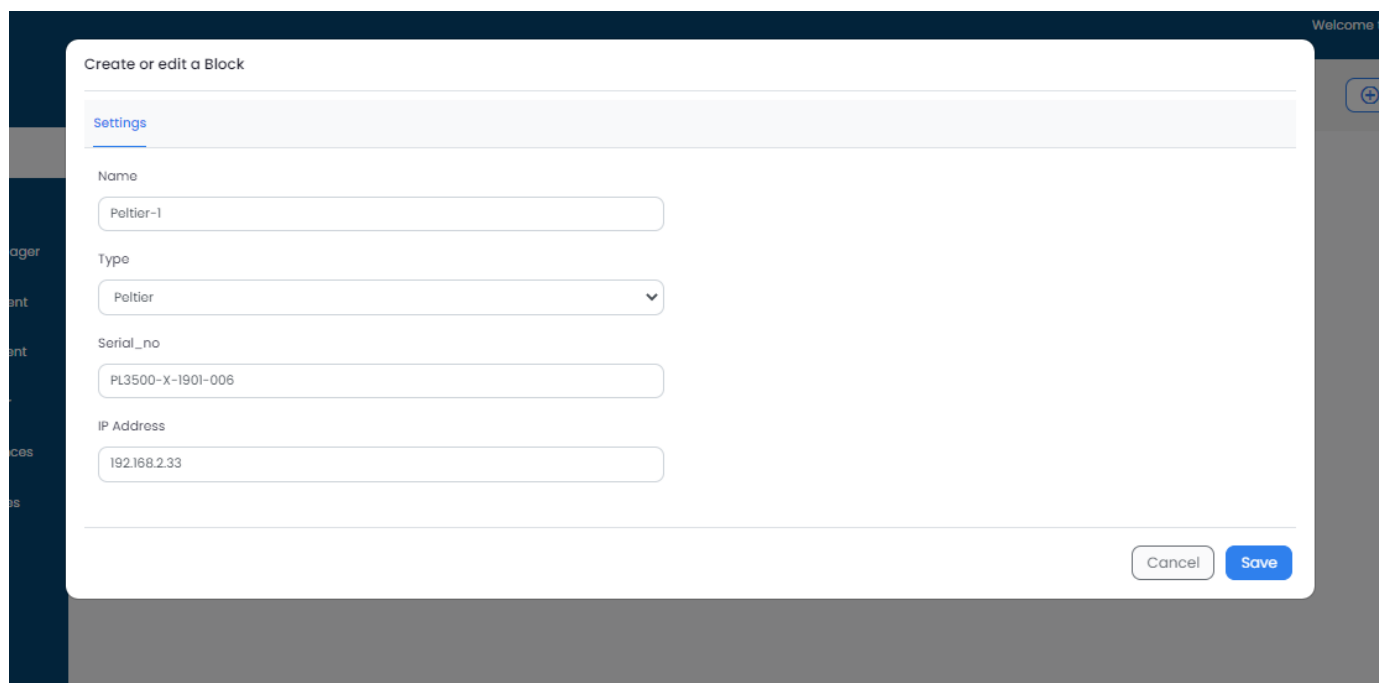
### 3. Device Edit

- We can edit device data by clicking on edit button.



Name	IP Address	Device Sync	
Peltier-1	192.168.2.33	Device out of sync Device config out of sync	 
Datalogger_21	192.168.2.38	Device out of sync Device config out of sync	 

- After clicking on edit button device dialog will open as shown here.



Create or edit a Block

Settings

Name  
Peltier-1

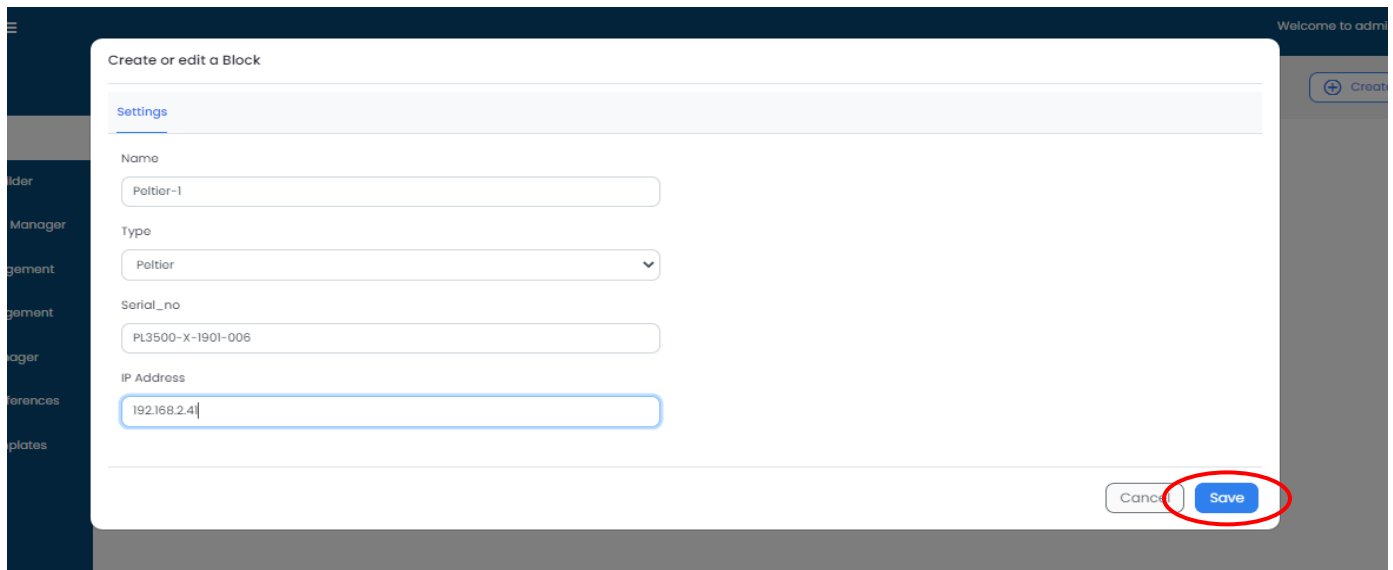
Type  
Peltier

Serial\_no  
PL3500-X-1901-006

IP Address  
192.168.2.33

Cancel Save

- Edit required data and click on save button as shown.



Create or edit a Block

Settings

Name  
Peltier-1

Type  
Peltier

Serial\_no  
PL3500-X-1901-006

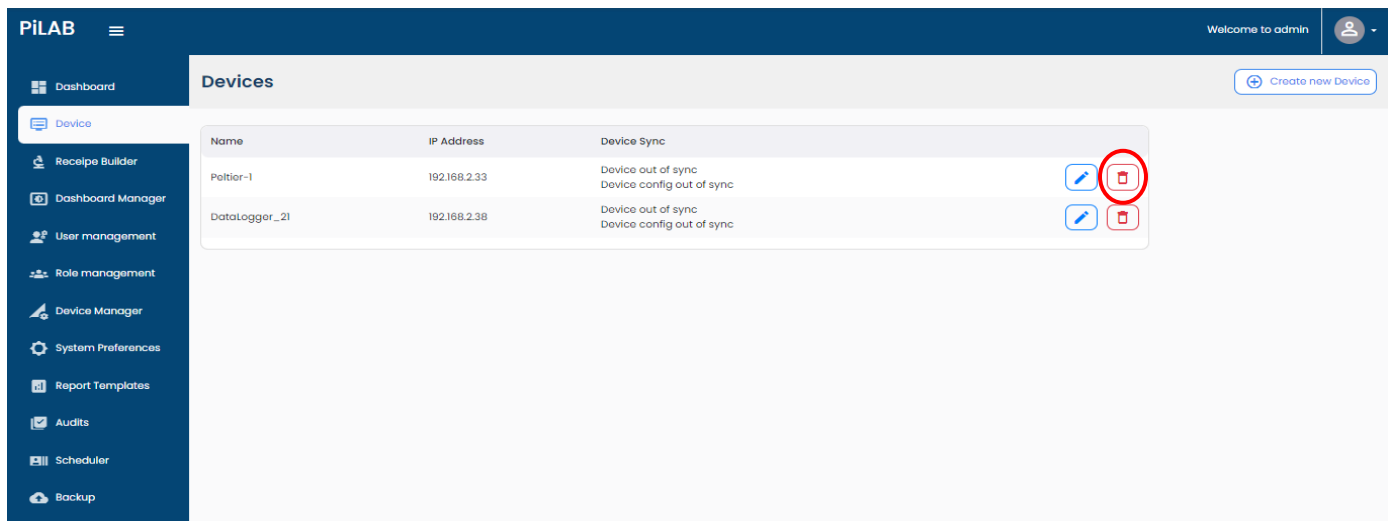
IP Address  
192.168.2.4

Cancel Save

- Then device data will update.

#### 4. Device Delete

- Click on delete button if you want delete device as shown.



PiLAB

Welcome to admin

Dashboard

Device

Recipe Builder

Dashboard Manager

User management

Role management

Device Manager

System Preferences

Report Templates





Audits

Scheduler

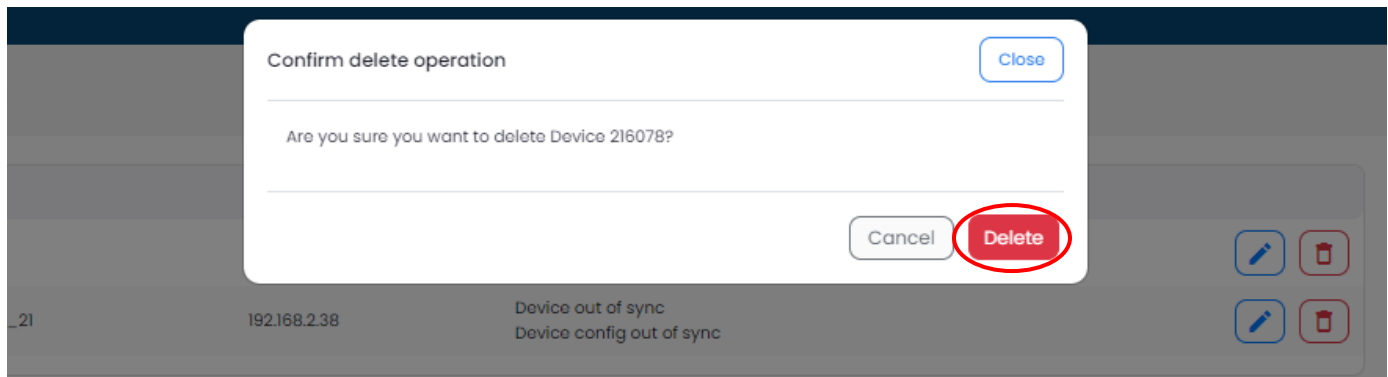
Backup

Devices

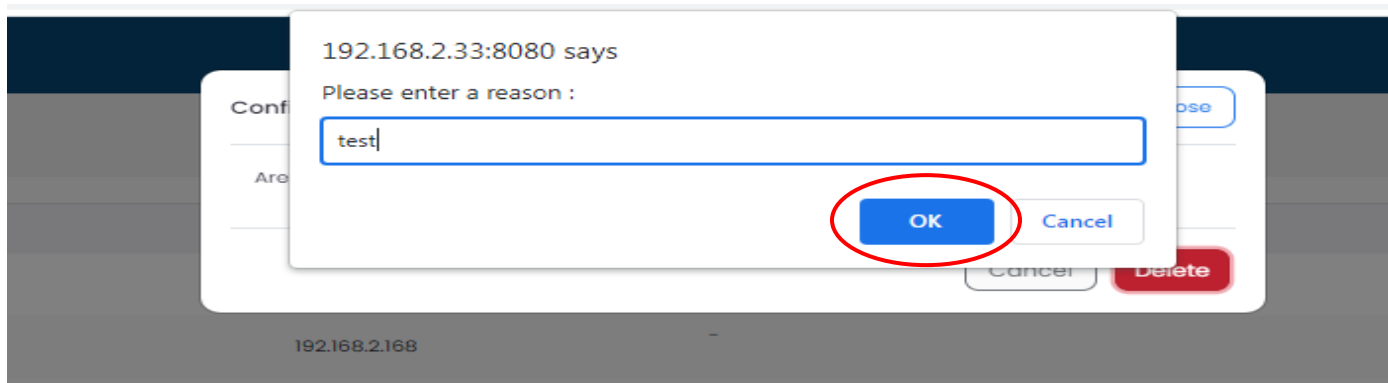
Create new Device

Name	IP Address	Device Sync	
Peltier-1	192.168.2.33	Device out of sync Device config out of sync	 
DataLogger_21	192.168.2.38	Device out of sync Device config out of sync	 

- After clicking on delete button dialog will open as shown here.



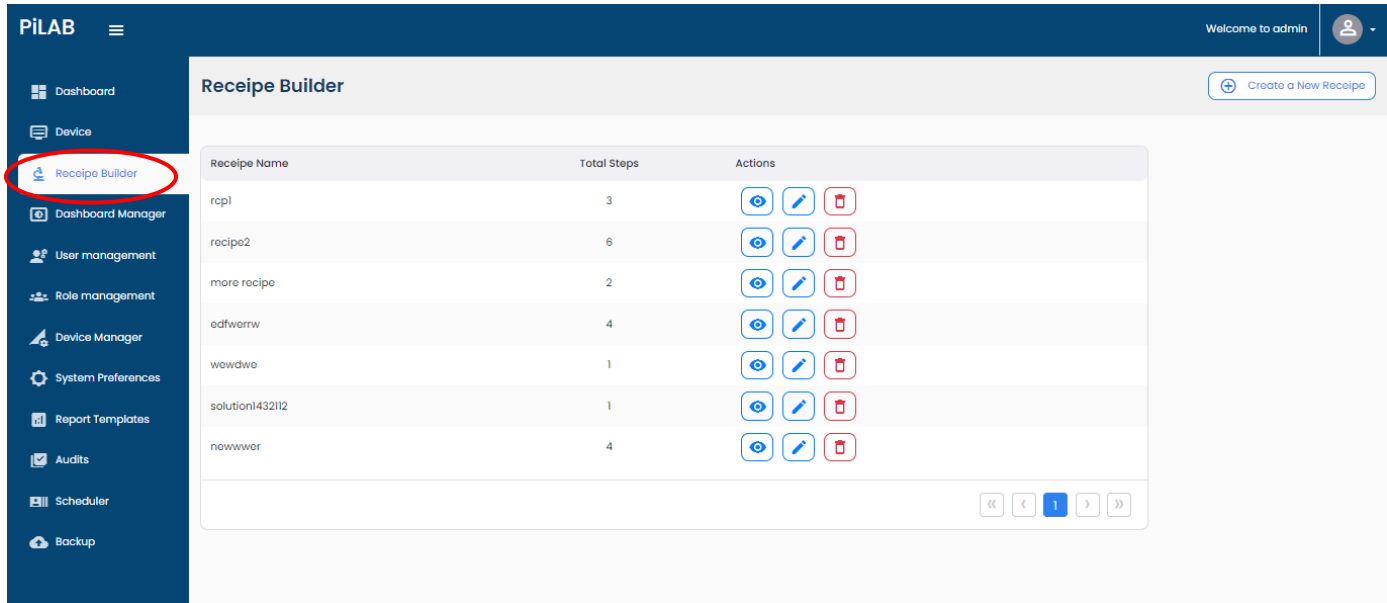
- After click on delete button it will ask for reason, after entering reason click on OK then device will delete.
























## 6. Recipe Builder

### 1. Recipe Page

- Recipe builder contain all the created recipes as shown here.

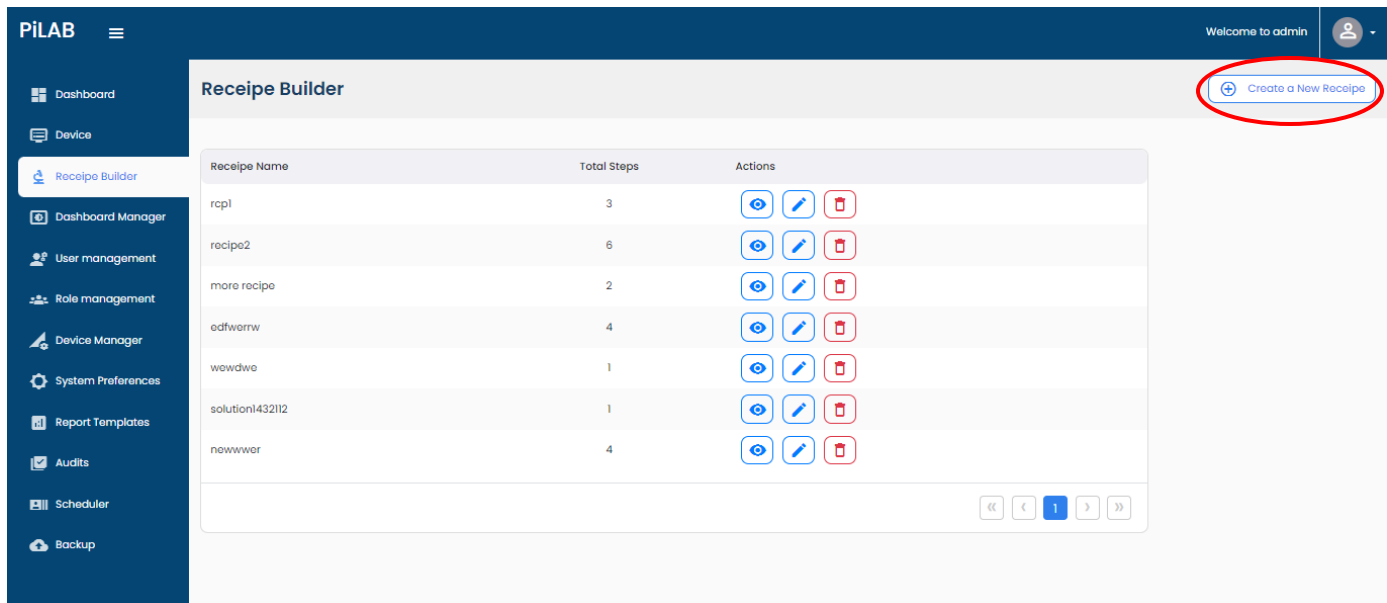


The screenshot shows the PiLAB interface with the 'Recipe Builder' section selected in the sidebar. The main content area displays a table of recipes with columns for 'Recipe Name', 'Total Steps', and 'Actions'. A 'Create a New Recipe' button is visible in the top right corner.

Recipe Name	Total Steps	Actions
rcpl	3	  
recipe2	6	  
more recipe	2	  
odfworrv	4	  
wowdwo	1	  
solution143212	1	  
nowwwor	4	  

### 2. Recipe Creation

- Click on Create new Recipe as shown here.



The screenshot shows the PiLAB interface with the 'Recipe Builder' section selected in the sidebar. The 'Create a New Recipe' button in the top right corner is highlighted with a red circle.

- After clicking on Create new Recipe button dialog will open as shown here.

Create a Recipe

Recipe Name:  RPM:  INT  EXT

Steps	SP	DeltaT	BSP	Bias	Rate	Ctrl Type	PID	Time	End
1	sp	Delta T	Bsp	Bias	Rate	Select type	Fixed	mins	<input type="checkbox"/> value <input type="checkbox"/> Time

Cancel Save

- **RPM selection:**
- We need to select any rpm type for experiments 1. Rpm internal 2.Rpm external
- We can select only one type of rpm for experiment.
- Enter recipe data click on save button as shown below.

Create a Recipe

Recipe Name:  RPM:  INT  EXT

Steps	SP	DeltaT	BSP	Bias	Rate	RPM(int)	Ctrl Type	PID	Time	End
1	1	1	1	1	1	1	Mass ctrl	Fixed	1	<input checked="" type="checkbox"/> value <input type="checkbox"/> Time
2	2	2	2	2	2	2	Jacket c	Fixed	1	<input type="checkbox"/> value <input checked="" type="checkbox"/> Time






















Cancel Save

- Then new recipe will create.

### 3. Recipe View

- Recipe view is used to see recipe data.
- Click on recipe view button as shown here.

The screenshot shows the PiLAB Recipe Builder interface. On the left is a navigation menu with options like Dashboard, Device, Recipe Builder, Dashboard Manager, User management, Role management, Device Manager, System Preferences, Report Templates, Audits, Scheduler, and Backup. The main area is titled 'Recipe Builder' and contains a table of recipes. The 'View' button for the first recipe, 'rcpl', is circled in red.

Recipe Name	Total Steps	Actions
rcpl	3	  
recipe2	6	  
more recipe	2	  
odfwerw	4	  
wowdwe	1	  
solution143212	1	  
newwwwer	4	  

- After clicking on View button dialog will open as shown here.

The screenshot shows the 'Create a Recipe' dialog box. It has fields for 'Recipe Id' (1007) and 'Recipe Name' (rcpl). There are checkboxes for 'RPM' (checked), 'INT', and 'EXT'. Below is a table with 3 steps, each with various configuration options like SP, Delta T, BSP, Bias, Rate, RPM(Int), Ctrl type, PID, Time, and End.

Steps	SP	Delta T	BSP	Bias	Rate	RPM(Int)	Ctrl type	PID	Time	End
1	sp	Delta T	Bsp	Bias	Rate	Rpm	Delta T	Fixed	mins	<input type="checkbox"/> value <input type="checkbox"/> Time
2	sp	Delta T	Bsp	Bias	Rate	Rpm	Select type	Fixed	mins	<input type="checkbox"/> value <input type="checkbox"/> Time
3	sp	Delta T	Bsp	Bias	Rate	Rpm	Select type	Fixed	mins	<input type="checkbox"/> value <input type="checkbox"/> Time

Buttons: Cancel, Save



#### 4. Recipe Edit

- Recipe Edit is used to edit recipe data
- Click on recipe view button as shown here.

The screenshot shows the PiLAB Recipe Builder interface. On the left is a navigation menu with options like Dashboard, Device, Recipe Builder, Dashboard Manager, User management, Role management, Device Manager, System Preferences, Report Templates, Audits, Scheduler, and Backup. The main area displays a table of recipes with columns for Recipe Name, Total Steps, and Actions. The 'newwwer' recipe has 4 steps, and its edit button (pencil icon) is circled in red.

Recipe Name	Total Steps	Actions
rcpl	3	
recipo2	6	
more recipo	2	
odfwerw	4	
wowdwe	1	
solution143212	1	
newwwer	4	

- After clicking on edit button dialog will open as shown here.

The screenshot shows the 'Create a Recipe' dialog box. It includes fields for Recipe ID (219302) and Recipe Name (newwwer). The RPM setting is set to INT. Below these fields is a table of steps with columns for Steps, SP, DeltaT, BSP, Bias, Rate, RPM(Int), Ctrl Type, PID, Time, and End. The dialog also includes checkboxes for 'value' and 'Time' for each step, and a 'Save' button at the bottom right.

Steps	SP	DeltaT	BSP	Bias	Rate	RPM(Int)	Ctrl Type	PID	Time	End
1	1	1	1	1	1	1	Mass ctrl	Custom	1	<input checked="" type="checkbox"/> value <input type="checkbox"/> Time
Master P: 1    Master I: 1    Slave P1: 1    Slave I1: 1    Slave P2: 11    Slave I2: 1										
2	2	2	2	2	2	2	Jacket ct	Custom	2	<input type="checkbox"/> value <input checked="" type="checkbox"/> Time
JH Slave I1: 2    JH Slave p1: 2    JC Slave I2: 2    JC Slave p2: 2										
3	3	3	3	3	3	3	Mass ctrl	Fixed	3	<input checked="" type="checkbox"/> value <input type="checkbox"/> Time

- Edit required data then click on save button as shown.
- Then recipe will update.

Create a Recepte

Recepte Id:  Recepte Name:  RPM:  INT  EXT

Steps	SP	DeltaT	BSP	Bias	Rate	RPM(Int)	Ctrl Type	PID	Time	End	
1	<input type="text" value="10"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	Mass ctrl	Custom	<input type="text" value="1"/>	<input checked="" type="checkbox"/> value <input type="checkbox"/> Time	
Master P		Master I	Slave P1	Slave I1	Slave P2	Slave I2					
<input type="text" value="1"/>		<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="11"/>	<input type="text" value="1"/>					
2	<input type="text" value="2"/>	<input type="text" value="2"/>	<input type="text" value="2"/>	<input type="text" value="2"/>	<input type="text" value="2"/>	<input type="text" value="2"/>	Jacket ct	Custom	<input type="text" value="2"/>	<input type="checkbox"/> value <input checked="" type="checkbox"/> Time	
JH Slave I1		JH Slave p1	JC Slave I2	JC Slave p2							
<input type="text" value="2"/>		<input type="text" value="2"/>	<input type="text" value="2"/>	<input type="text" value="2"/>							
3	<input type="text" value="3"/>	<input type="text" value="3"/>	<input type="text" value="3"/>	<input type="text" value="3"/>	<input type="text" value="3"/>	<input type="text" value="3"/>	Mass ctrl	Fixed	<input type="text" value="3"/>	<input checked="" type="checkbox"/> value <input type="checkbox"/> Time	
4	<input type="text" value="4"/>	<input type="text" value="4"/>	<input type="text" value="4"/>	<input type="text" value="4"/>	<input type="text" value="4"/>	<input type="text" value="4"/>	Mass ctrl	Custom	<input type="text" value="4"/>	<input checked="" type="checkbox"/> value <input type="checkbox"/> Time	

Cancel **Save**

## 5. Recipe Delete

- Recipe delete is used to delete recipe.
- Click delete button as shown here.

PiLAB ☰ Welcome to admin

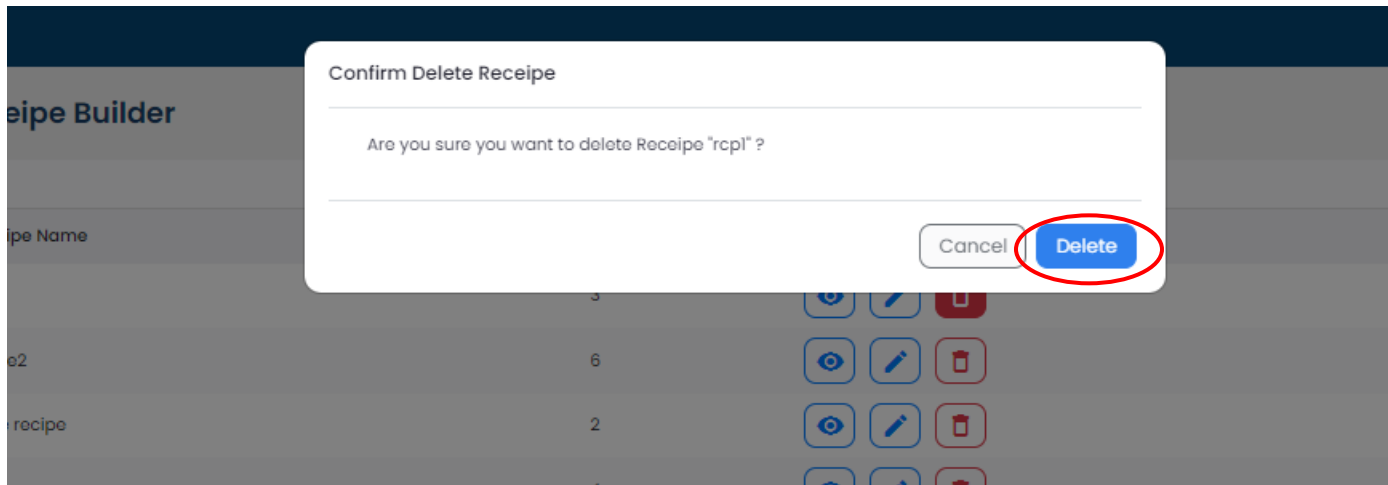
Dashboard Builder

Recipe Builder Create a New Recepte

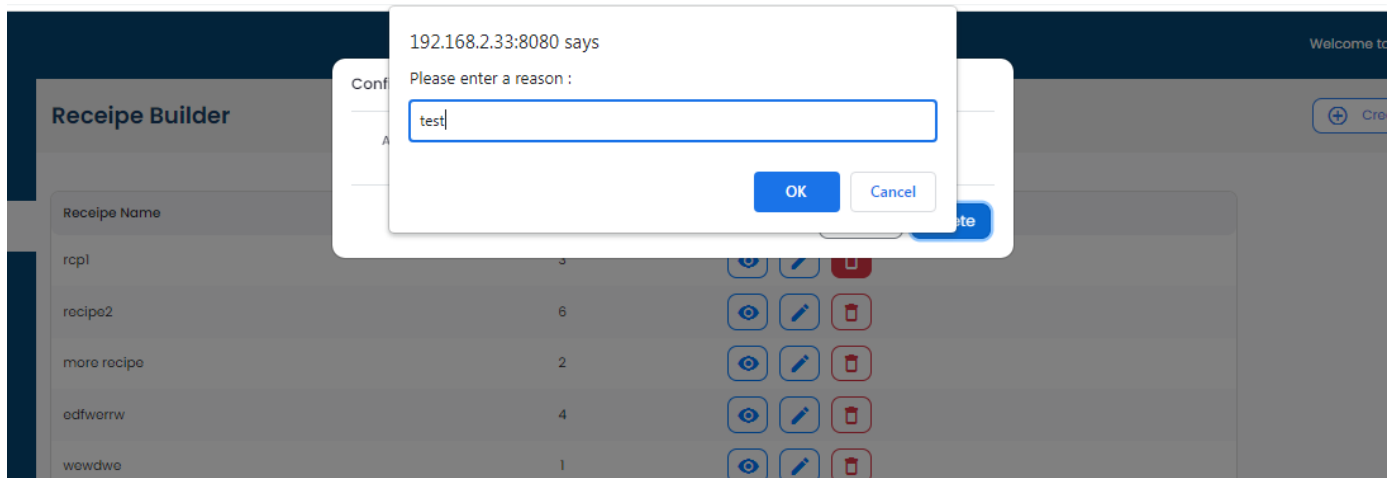
Recepte Name	Total Steps	Actions
rcp1	3	
recepte2	6	
more recepte	2	
odfwerrw	4	
wowdwo	1	
solution143212	1	
newwwer	4	

« < 1 > »

- Then dialog will open as shown here.
- Click on delete button.



- After clicking on delete button, it will ask for reason then enter reason click on OK button as shown.
- Then recipe will delete.







## 7. Dashboard Manager

### 1. Dashboard Manager Page

- Dashboard Manager contains all the created Tabs/Areas as shown here.
- These created tabs will display in dashboard page.

The screenshot shows the PiLAB Dashboard Manager interface. The left sidebar contains a menu with the following items: Dashboard, Device, Recipe Builder, **Dashboard Manager** (highlighted with a red circle), User management, Role management, Device Manager, System Preferences, Report Templates, Audits, Scheduler, and Backup. The main content area is titled 'Dashboard Manager' and features a table with the following data:

TAB Name	Devices	
Hot_spot-1	Peltier-1,DataLogger_21	 
Hot_spot-2	Peltier-2	 

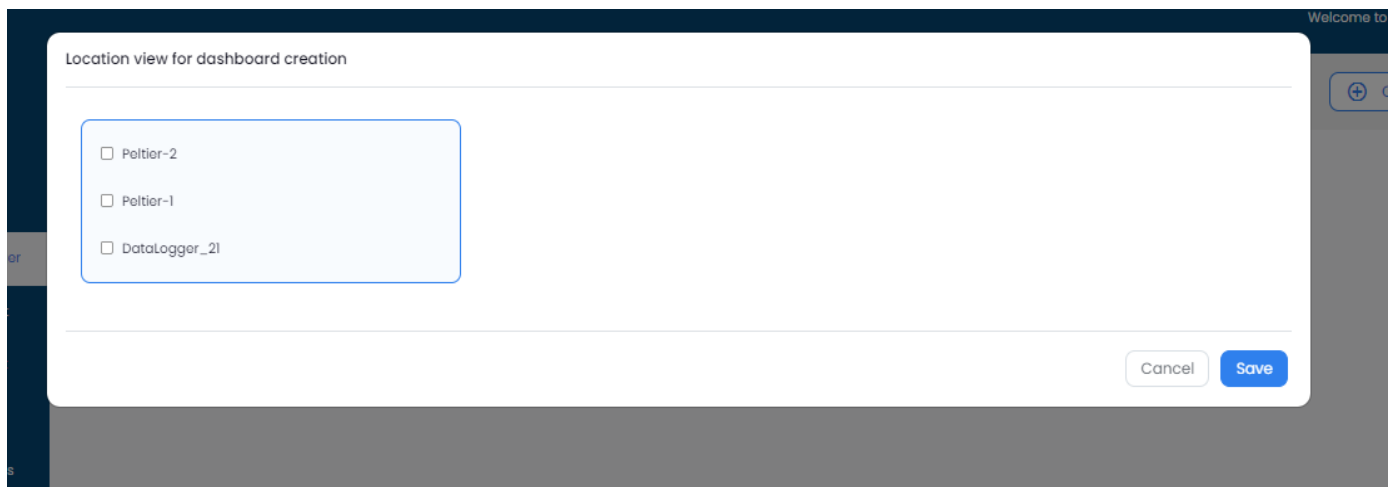
At the bottom right of the table, there are navigation controls: « < 1 > ». In the top right corner of the main content area, there is a button labeled 'Create new Tab' with a plus icon.

### 2. Dashboard Tab(Area) Creation

- Click on Create new Tab button to create new tab(area) as shown here.

This screenshot is identical to the one above, showing the PiLAB Dashboard Manager interface. The 'Create new Tab' button in the top right corner of the main content area is highlighted with a red circle.

- After clicking on create new tab dialog will open as shown here.



Location view for dashboard creation

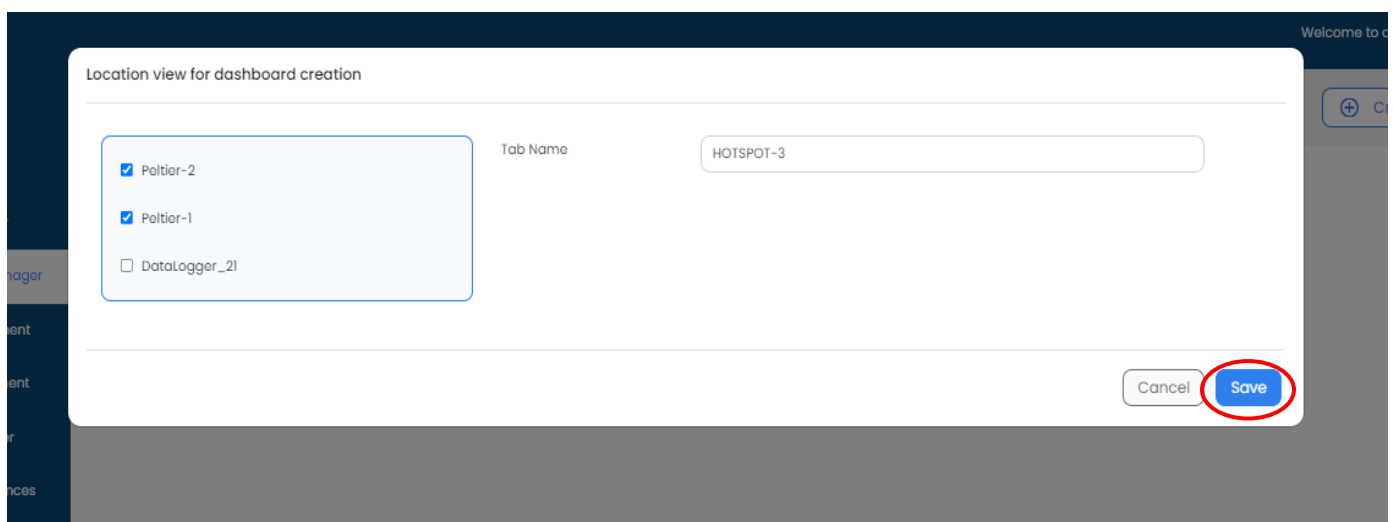
Peltier-2

Peltier-1

DataLogger\_21

Cancel Save

- Click on check boxes of devices and enter data click on save button as shown here.



Location view for dashboard creation

Peltier-2

Peltier-1

DataLogger\_21

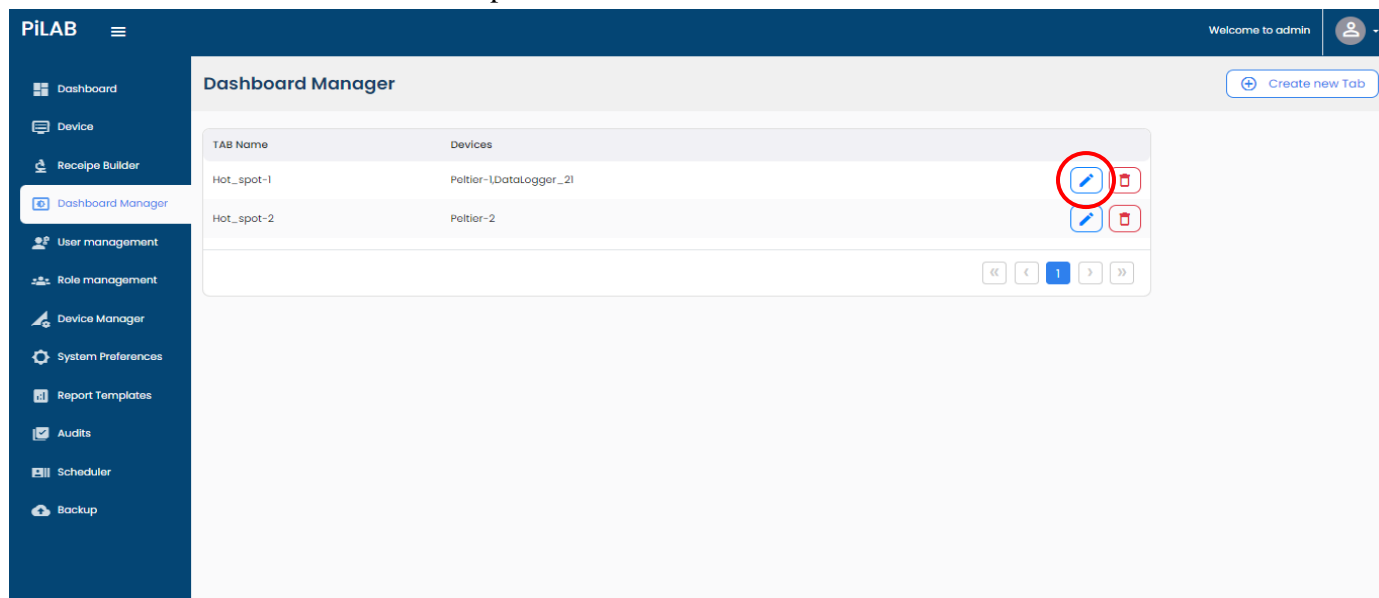
Tab Name

Cancel Save

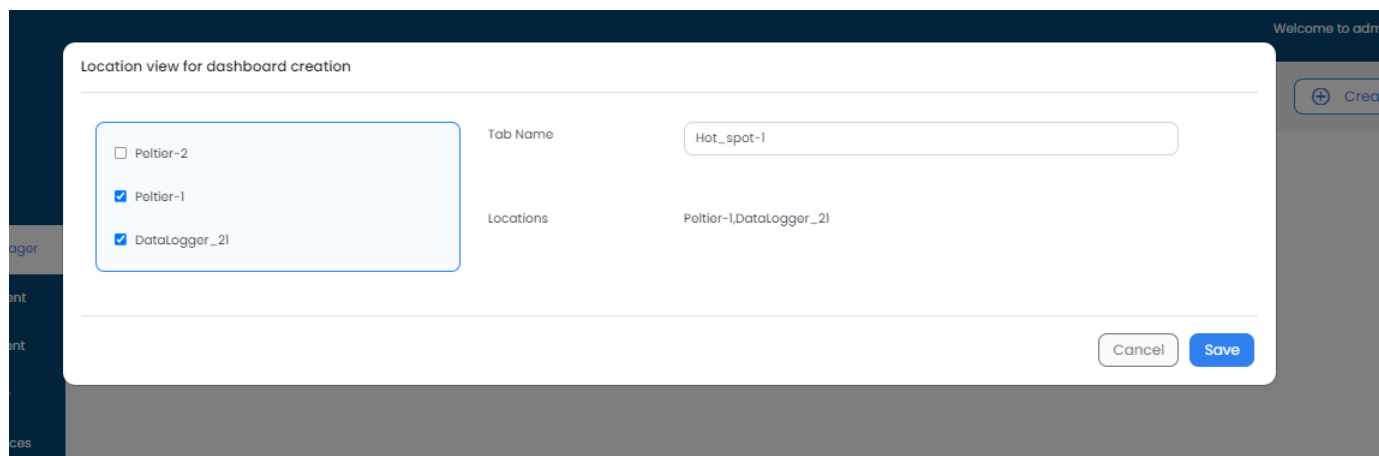
Then dashboard tab(area) will create

### 3. Dashboard Tab(Area) Edit

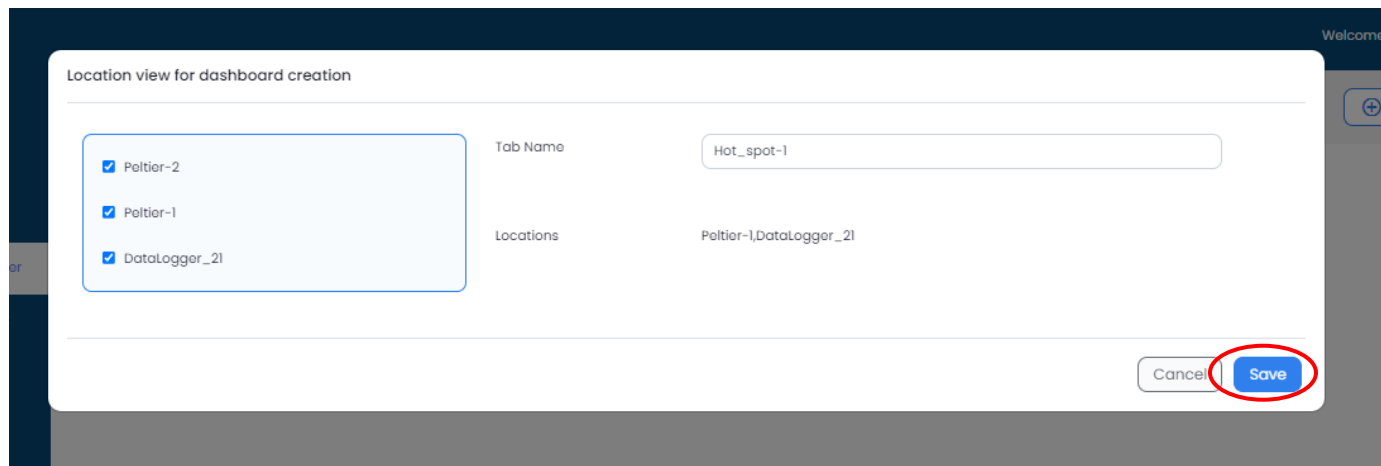
- Click on Edit button to update details as shown here.



- After clicking on edit button dialog will open as shown here.

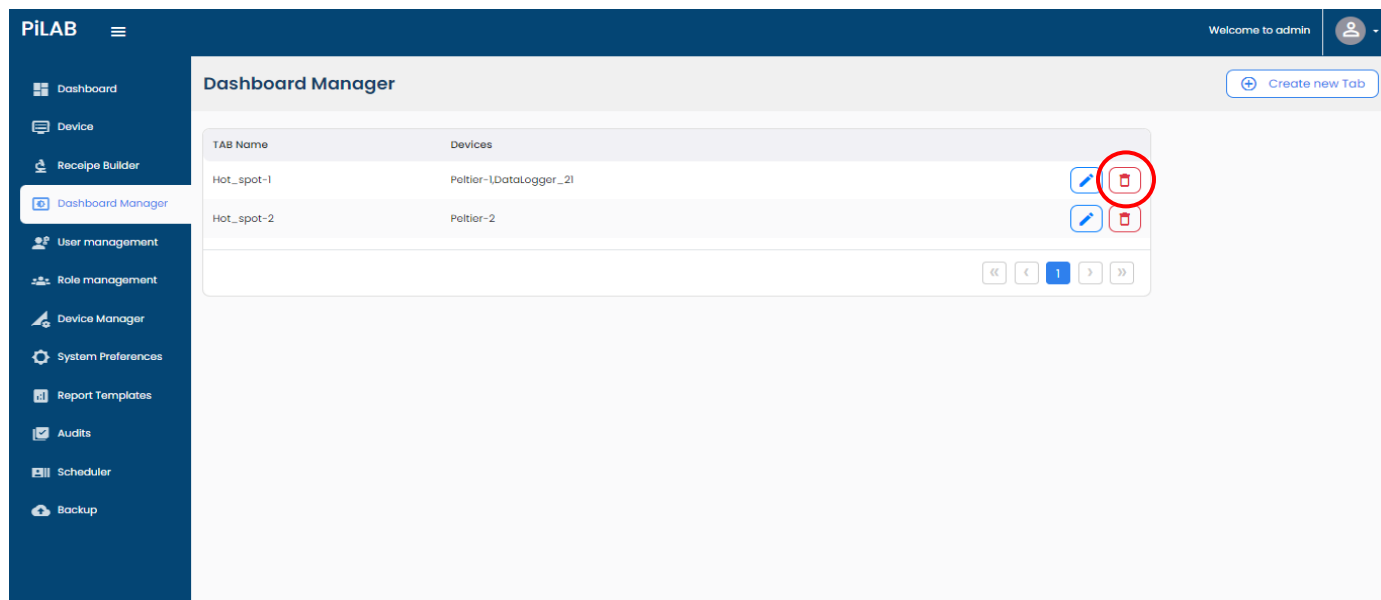


- Update the required details click on save button as shown here.
- Then dashboard tab will update.

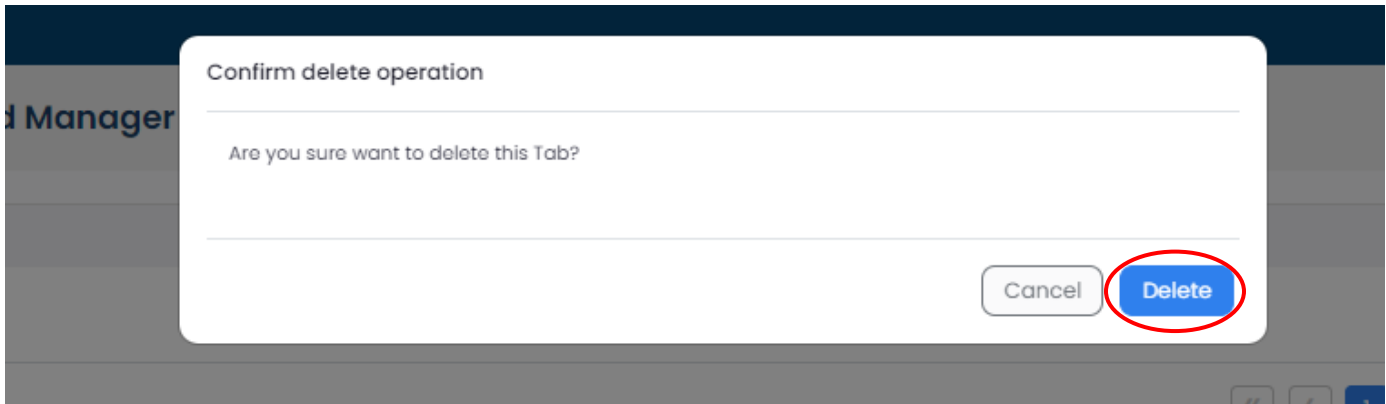


#### 4. Dashboard Tab(Area) Delete

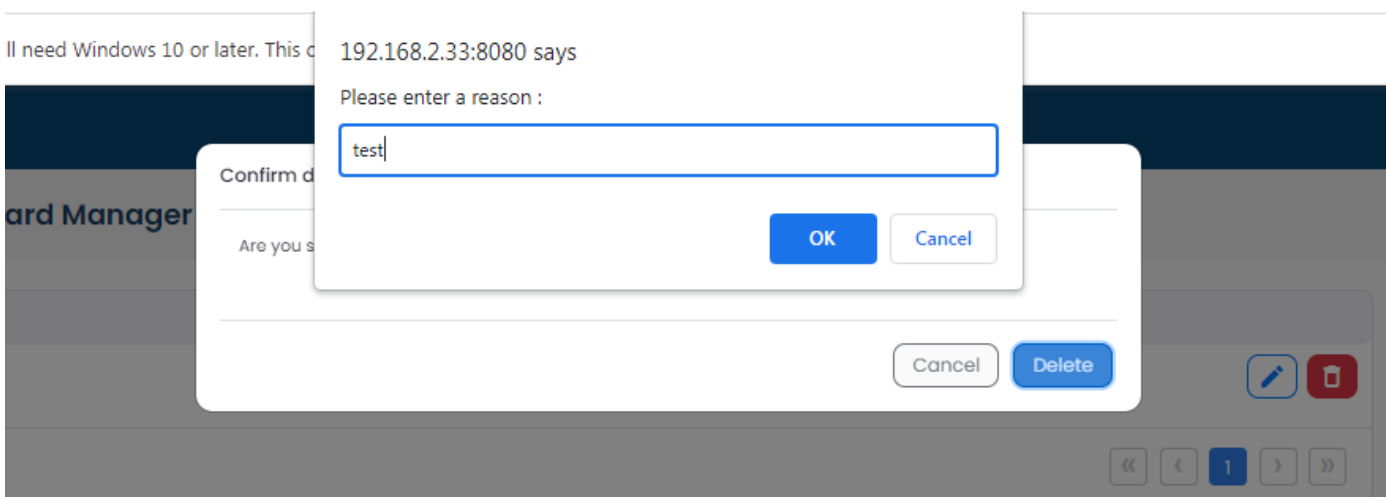
- Click on delete button to delete tab(area) as shown here.



- After clicking delete button dialog will open as shown here.
- Then click on delete button.



- After clicking delete button it will ask for reason, enter reason click on OK button as shown here.
- Then tab(area) will delete.





## 8. User Management

### 1. User Management Page

- All the created users will display in User Management page as shown here.

The screenshot displays the PiLAB User Management interface. The left sidebar contains a menu with 'User management' highlighted. The main content area shows a table of users:

Login Name	Email	Status	Roles	Created On	Expires On	Modified On	
admin	admin@localhost		Administrator	14-03-2022 11:52:18		14-03-2022 11:52:18	[Key] [Eye] [Edit]
polmon		Activated	Operator	20-04-2022 11:31:00	20-04-2023 00:00:00	20-04-2022 11:31:56	[Key] [Eye] [Edit]
test		Activated	Operator	29-10-2022 10:49:27	29-10-2023 00:00:00	31-10-2022 15:19:03	[Key] [Eye] [Edit]
test12		Activated	Supervisor	29-11-2022 11:33:35	29-11-2023 00:00:00	29-11-2022 11:33:35	[Key] [Eye] [Edit]

Showing 1 - 4 of 4 items.

### 2. User creation

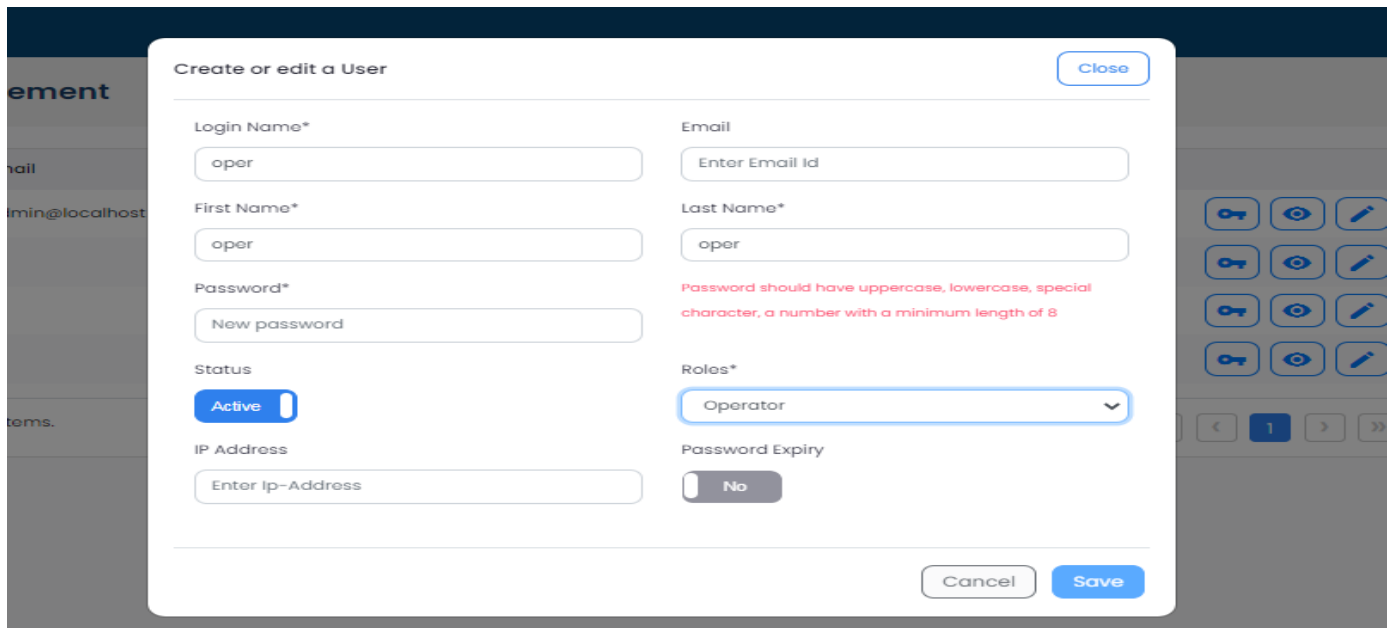
- Click on Create new User button to create user as shown here.

The screenshot shows the 'Create or edit a User' modal form. The form contains the following fields and options:

- Login Name\***: Enter LoginId
- Email**: Enter Email Id
- First Name\***: Enter FirstName
- Last Name\***: Enter LastName
- Password\***: New password. Note: Password should have uppercase, lowercase, special character, a number with a minimum length of 8.
- Status**: Active (selected)
- Roles\***: [Dropdown menu]
- IP Address**: Enter Ip-Address
- Password Expiry**: No (selected)

Buttons: Close, Cancel, Save.

- Enter required details as shown here.

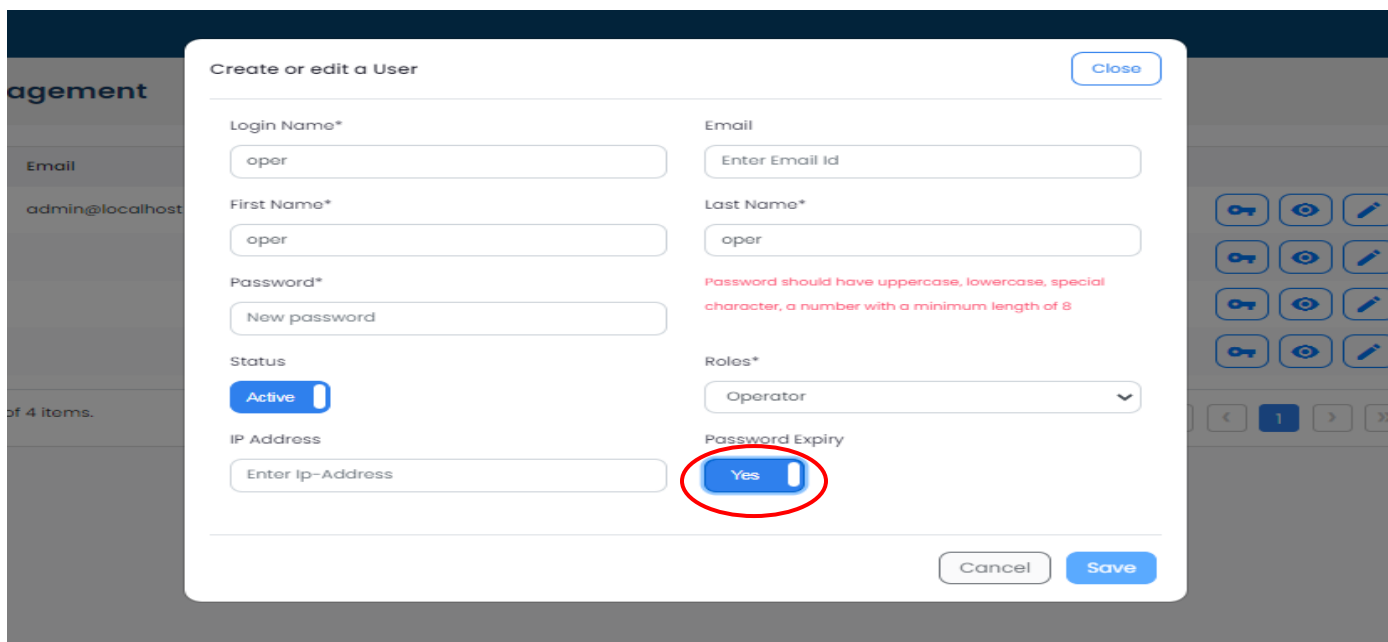


The screenshot shows a modal window titled "Create or edit a User" with a "Close" button in the top right corner. The form contains the following fields and controls:

- Login Name\***: Input field containing "oper".
- First Name\***: Input field containing "oper".
- Password\***: Input field containing "New password".
- Status**: Toggle switch set to "Active".
- IP Address**: Input field containing "Enter Ip-Address".
- Email**: Input field containing "Enter Email Id".
- Last Name\***: Input field containing "oper".
- Roles\***: Dropdown menu set to "Operator".
- Password Expiry**: Toggle switch set to "No".

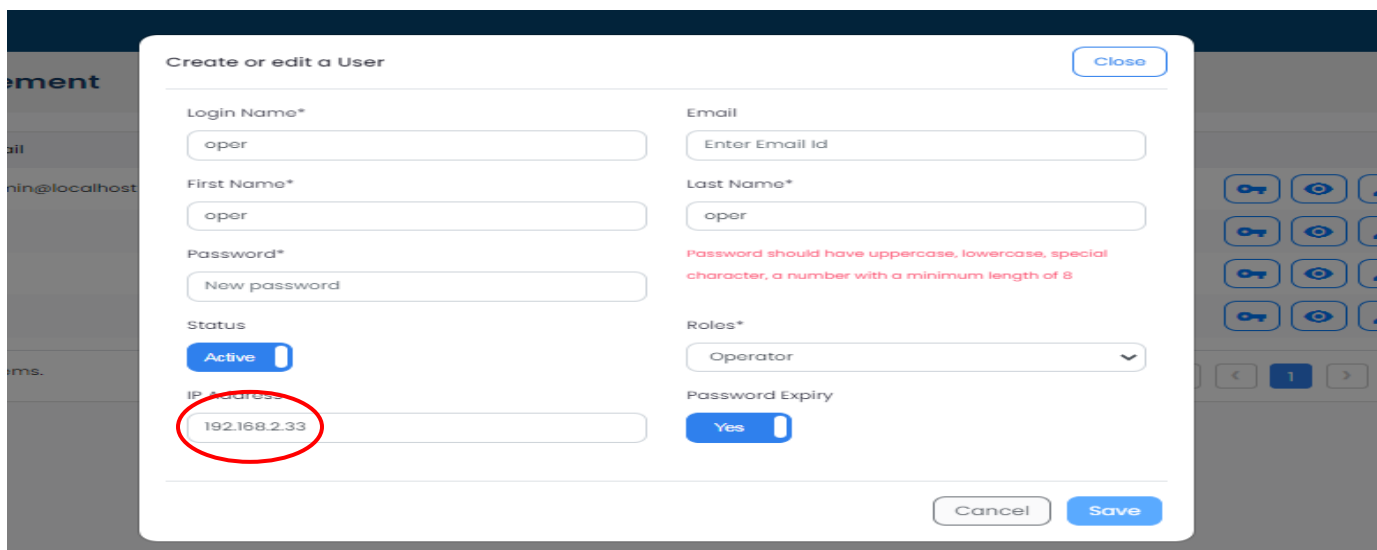
A red text message below the password field reads: "Password should have uppercase, lowercase, special character, a number with a minimum length of 8". At the bottom of the form are "Cancel" and "Save" buttons.

- **Password Expiry.**
- Make password expiry as Yes if you want expire password of user as shown here.



This screenshot is identical to the previous one, but the "Password Expiry" toggle switch is now set to "Yes" and is circled in red. The "Status" toggle remains set to "Active".

- **IP Address.**
- If you enter IP Address then user will login in that IP Address only.
- If IP Address is needed then only enter in input field otherwise keep it as empty.

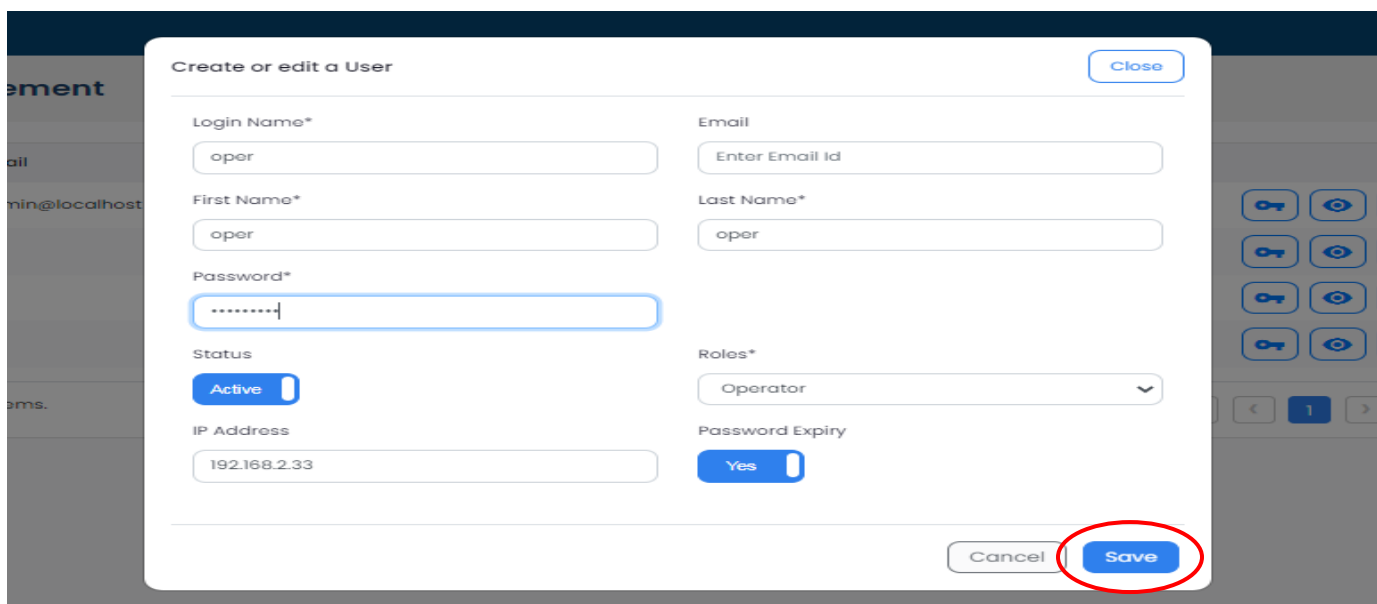


The screenshot shows a 'Create or edit a User' form with the following fields and values:

Field	Value
Login Name*	oper
First Name*	oper
Password*	New password
Status	Active
IP Address	192.168.2.33
Email	Enter Email Id
Last Name*	oper
Roles*	Operator
Password Expiry	Yes

A red circle highlights the IP Address field containing '192.168.2.33'. A red text note indicates: 'Password should have uppercase, lowercase, special character, a number with a minimum length of 8'. Buttons for 'Cancel', 'Save', and 'Close' are visible at the bottom.

- **Password length.**
- Password must contain uppercase, lowercase, special character, a number with minimum length of 8.
- Enter password as per the policy as shown here.
- After entering all details click on save button as shown, then user will create.



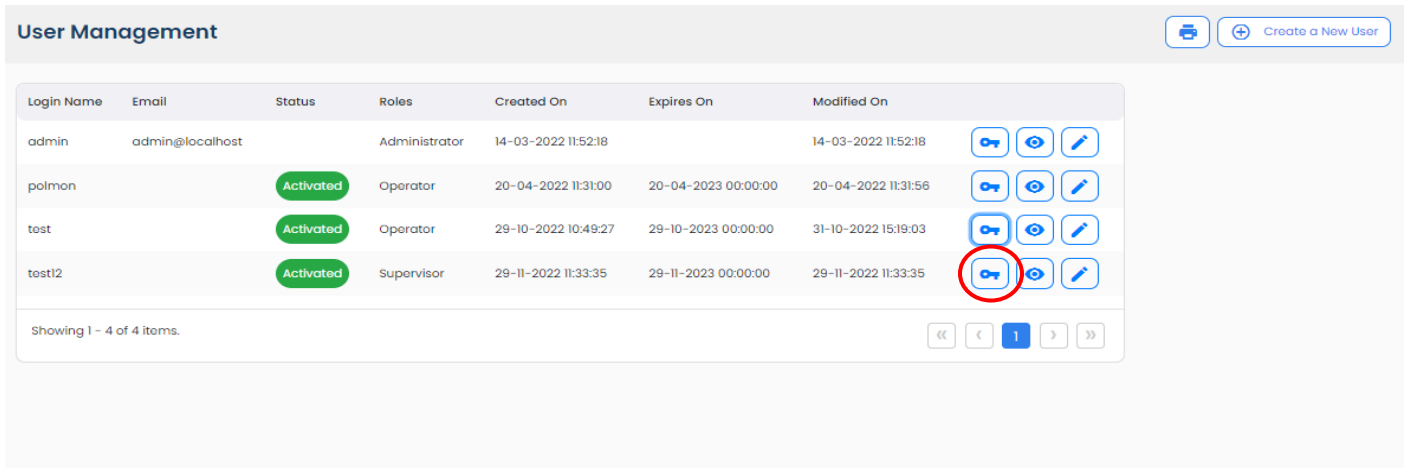
The screenshot shows the same 'Create or edit a User' form, but with the following changes:

Field	Value
Login Name*	oper
First Name*	oper
Password*	.....
Status	Active
IP Address	192.168.2.33
Email	Enter Email Id
Last Name*	oper
Roles*	Operator
Password Expiry	Yes













A red circle highlights the 'Save' button at the bottom right. The 'Close' button is also visible at the top right.

### 3. User Password change

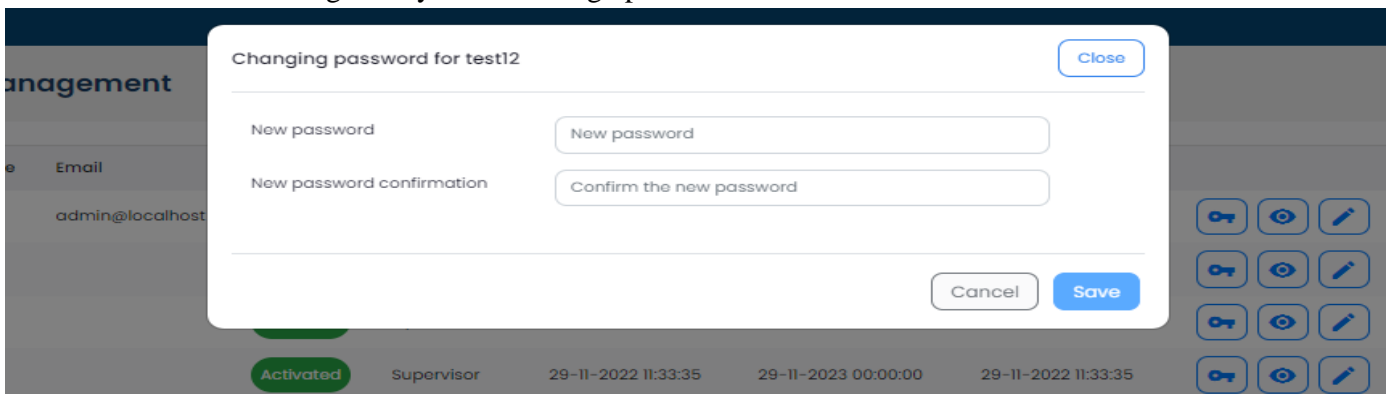
- If you want change password of user then click on key button as shown here.



The screenshot shows the 'User Management' interface. At the top right, there are buttons for 'Print' and 'Create a New User'. Below is a table with columns: Login Name, Email, Status, Roles, Created On, Expires On, and Modified On. The table contains four rows of user data. The 'test12' user is a Supervisor, created on 29-11-2022 11:33:35, and expires on 29-11-2023 00:00:00. The 'test12' row has three icons: a key icon (circled in red), an eye icon, and a pencil icon. Below the table, it says 'Showing 1 - 4 of 4 items.' and there are pagination controls.

Login Name	Email	Status	Roles	Created On	Expires On	Modified On	
admin	admin@localhost		Administrator	14-03-2022 11:52:18		14-03-2022 11:52:18	  
polmon		Activated	Operator	20-04-2022 11:31:00	20-04-2023 00:00:00	20-04-2022 11:31:56	  
test		Activated	Operator	29-10-2022 10:49:27	29-10-2023 00:00:00	31-10-2022 15:19:03	  
test12		Activated	Supervisor	29-11-2022 11:33:35	29-11-2023 00:00:00	29-11-2022 11:33:35	  

- After clicking on key button dialog open as shown here.



The screenshot shows a dialog box titled 'Changing password for test12'. It has a 'Close' button in the top right corner. There are two input fields: 'New password' and 'New password confirmation'. Below the input fields are 'Cancel' and 'Save' buttons. The background shows the user management table with the 'test12' user selected.

- Enter new password and Click on save button as shown, then password will change.















The screenshot shows the same dialog box as above, but now the 'New password' and 'New password confirmation' fields contain masked text (dots). The 'Save' button is circled in red, indicating it has been clicked.

#### 4. User View.

- If you click on view button of the user then all details of the user will display.

**User Management** 🖨️ ➕ Create a New User

Login Name	Email	Status	Roles	Created On	Expires On	Modified On	
admin	admin@localhost		Administrator	14-03-2022 11:52:18		14-03-2022 11:52:18	  
polmon		Activated	Operator	20-04-2022 11:31:00	20-04-2023 00:00:00	20-04-2022 11:31:56	  
test		Activated	Operator	29-10-2022 10:49:27	29-10-2023 00:00:00	31-10-2022 15:19:03	  
test12		Activated	Supervisor	29-11-2022 11:33:35	29-11-2023 00:00:00	29-11-2022 11:33:35	  

Showing 1 - 4 of 4 items. ⏪ ⏩ 1 ⏪ ⏩

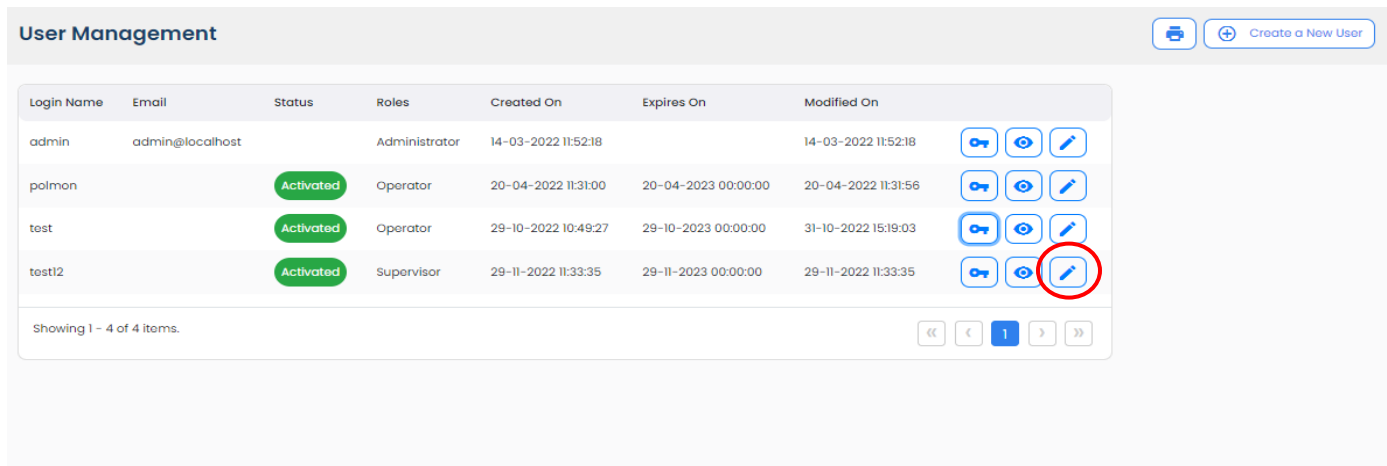
- After clicking on view button page will open as shown here.

[← Back](#) **User Profile: test12**













Login Name	<b>test12</b>	Email	
First Name	<b>234324</b>	Last Name	<b>234234</b>
Activated		Languages	<b>en</b>
Created By	<b>admin</b>	Created Date	<b>29-11-2022 11:33:35</b>
Last Modified By	<b>admin</b>	Last Modified Date	<b>29-11-2022 11:33:35</b>
Expiry Date	<b>29-11-2023 00:00:00</b>	Roles	<b>Supervisor</b>

## 5. User Edit

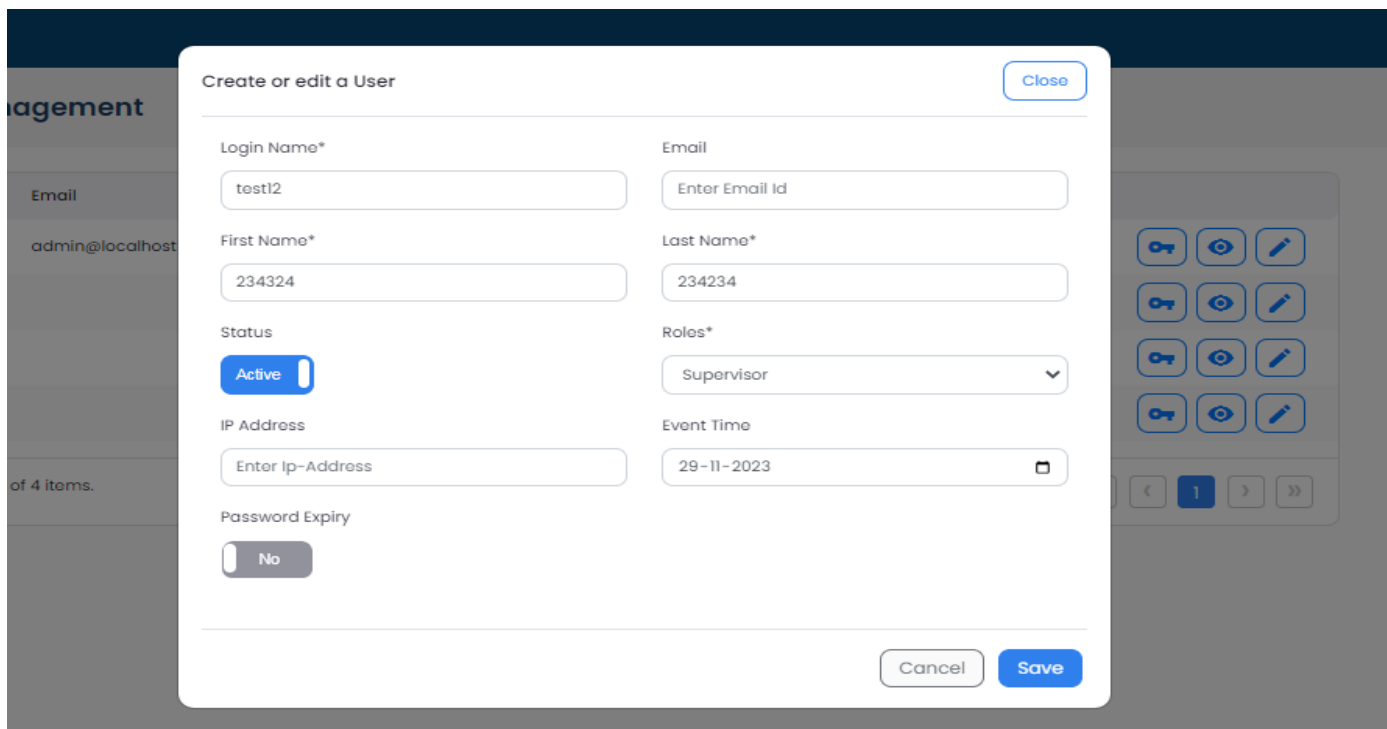
- To edit details of user click on edit button as shown here.



The screenshot shows the 'User Management' interface. At the top right, there is a 'Create a New User' button. Below it is a table with columns: Login Name, Email, Status, Roles, Created On, Expires On, and Modified On. The table contains four rows of user data. The 'test2' user's edit button (a pencil icon) is circled in red. Below the table, it says 'Showing 1 - 4 of 4 items.' and there are pagination controls.

Login Name	Email	Status	Roles	Created On	Expires On	Modified On	
admin	admin@localhost		Administrator	14-03-2022 11:52:18		14-03-2022 11:52:18	  
polmon		Activated	Operator	20-04-2022 11:31:00	20-04-2023 00:00:00	20-04-2022 11:31:56	  
test		Activated	Operator	29-10-2022 10:49:27	29-10-2023 00:00:00	31-10-2022 15:19:03	  
test2		Activated	Supervisor	29-11-2022 11:33:35	29-11-2023 00:00:00	29-11-2022 11:33:35	  

- After clicking on edit button dialog will open as shown here.



The screenshot shows the 'Create or edit a User' dialog box. It has a 'Close' button at the top right. The form contains the following fields and controls:

- Login Name\*: test12
- Email: Enter Email Id
- First Name\*: 234324
- Last Name\*: 234234
- Status: Active (toggle)
- Roles\*: Supervisor (dropdown)
- IP Address: Enter Ip-Address
- Event Time: 29-11-2023 (calendar icon)
- Password Expiry: No (toggle)

At the bottom right, there are 'Cancel' and 'Save' buttons.

- Update user data click on save button as shown here.

**Create or edit a User** Close

Login Name\*  Email

First Name\*  Last Name\*

Status  Active Roles\*

IP Address  Event Time

Password Expiry  Yes

## 6. User Report

- We can also see user data in report PDF.
- Click on print button to download user report as shown here.

**User Management** Print

Login Name	Email	Status	Roles	Created On	Expires On	Modified On	
admin	admin@localhost		Administrator	14-03-2022 11:52:18		14-03-2022 11:52:18	<input type="button" value="Print"/> <input type="button" value="Eye"/> <input type="button" value="Edit"/>
polmon		Activated	Operator	20-04-2022 11:31:00	20-04-2023 00:00:00	20-04-2022 11:31:58	<input type="button" value="Print"/> <input type="button" value="Eye"/> <input type="button" value="Edit"/>
test		Activated	Operator	29-10-2022 10:49:27	29-10-2023 00:00:00	31-10-2022 15:19:03	<input type="button" value="Print"/> <input type="button" value="Eye"/> <input type="button" value="Edit"/>
test12		Activated	Supervisor	29-11-2022 11:33:35	29-11-2023 00:00:00	29-11-2022 11:33:35	<input type="button" value="Print"/> <input type="button" value="Eye"/> <input type="button" value="Edit"/>

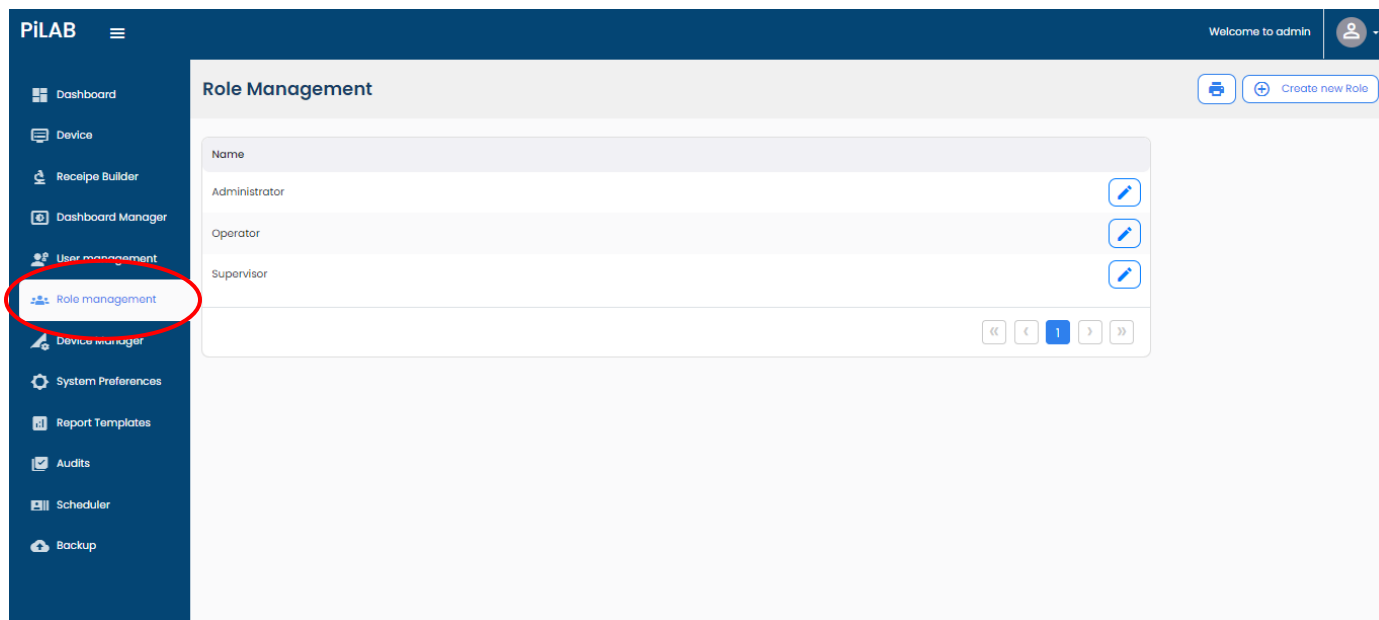
Showing 1 - 4 of 4 items. « ‹ 1 › »

- After clicking on print button report will download.




## 9. Role Management

### 1. Role Management Page

- If we go to Role Management page all the created roles will display as shown.



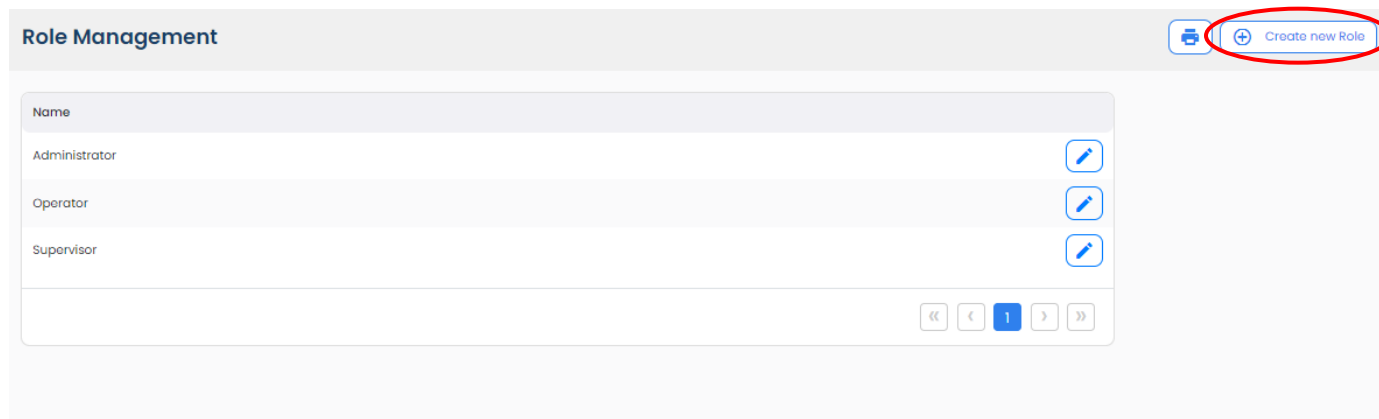
The screenshot shows the PiLAB Role Management page. The sidebar on the left contains a menu with items: Dashboard, Device, Recipe Builder, Dashboard Manager, User management, Role management (circled in red), Device manager, System Preferences, Report Templates, Audits, Scheduler, and Backup. The main content area is titled 'Role Management' and features a 'Create new Role' button. Below the title is a table with the following data:

Name	
Administrator	
Operator	
Supervisor	




At the bottom right of the table, there are pagination controls: « ‹ 1 › ».

### 2. Role Creation

- To create new role click on Create new Role button as shown here.



This screenshot is a close-up of the Role Management page, focusing on the 'Create new Role' button in the top right corner, which is circled in red. The table below the button shows the same list of roles as in the previous screenshot:

Name	
Administrator	
Operator	
Supervisor	

At the bottom right of the table, there are pagination controls: « ‹ 1 › ».



- After clicking on create new role button dialog will open as shown here.

**Create or edit a Role**

Name   
This field is required.

Resource	none	view	create	settings	all
DASHBOARD	none	view	create	settings	all
DEVICE	none	view	create	settings	all
RECIPE_BUILDER	none	view	create	settings	all
REPORTS	none	view	create	settings	all
DASHBOARD_MANAGER	none	view	create	settings	all
DEVICE_MANAGER	none	view	create	settings	all

- Enter Role name and select resource permissions as shown here.

**Create or edit a Role**

Name

Resource	none	view	create	settings	all
DASHBOARD	none	view	create	settings	all
DEVICE	none	view	create	settings	all
RECIPE_BUILDER	none	view	create	settings	all
REPORTS	none	view	create	settings	all
DASHBOARD_MANAGER	none	view	create	settings	all
DEVICE_MANAGER	none	view	create	settings	all

- Then click on save button as shown.
- Then role will create.

**Create or edit a Role**

Name: Operator

Resource	none	view	create	settings	all
DASHBOARD	none	view	create	settings	all
DEVICE	none	view	create	settings	all
RECIPE_BUILDER	none	view	create	settings	all
REPORTS	none	view	create	settings	all
DASHBOARD_MANAGER	none	view	create	settings	all
DEVICE_MANAGER	none	view	create	settings	all

Buttons: Cancel, Save

### 3. Role Edit

- Click on Edit button to update details as shown here.

**Role Management** 🖨️ + Create new Role

Name	
Administrator	
Operator	
Supervisor	

« ‹ 1 › »

- After clicking on edit button dialog will open as shown here.

Create or edit a Role

Name

Resource	none	view	create	settings	all
DEVICE	none	view	create	settings	all
REPORTS	none	view	create	settings	all
RECIPE_BUILDER	none	view	create	settings	all
DASHBOARD_MANAGER	none	view	create	settings	all
DEVICE_MANAGER	none	view	create	settings	all
REPORTS	none	view	create	settings	all

- Change the required details click on save button as shown.

Create or edit a Role

Name

Resource	none	view	create	settings	all
DEVICE	none	view	create	settings	all
REPORTS	none	view	create	settings	all
RECIPE_BUILDER	none	view	create	settings	all
DASHBOARD_MANAGER	none	view	create	settings	all
DEVICE_MANAGER	none	view	create	settings	all
REPORTS	none	view	create	settings	all

- Then role will update.

Access control of roles as shown in below table.

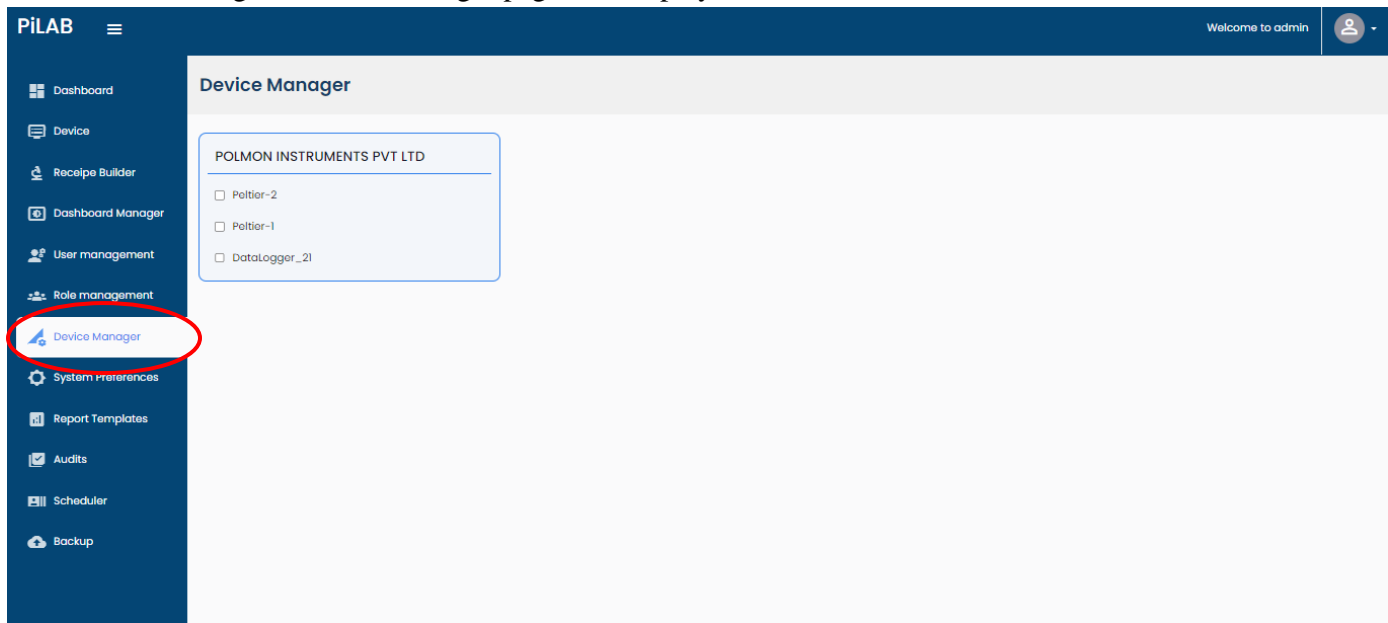
S.No.	Activity	Operator		Supervisor		Administrator	
1	<b>Dashboard</b>						
1.1	View	Yes		Yes		Yes	
1.2	Experiment Start	Yes		Yes		Yes	
1.3	Experiment Stop	Yes		Yes		Yes	
1.4	Experiment Pause	Yes		Yes		Yes	
1.5	Report View	Yes		Yes		Yes	
1.6	Report Download	Yes		Yes		Yes	
1.7	Configurations	Yes		Yes		Yes	
2	<b>Device</b>						
2.1	Device View	Yes		Yes		Yes	
2.2	Create a new Device	No		Yes		Yes	
2.3	Device Edit	No		No		Yes	
2.4	Device Delete	No		No		Yes	
3	<b>User-Management</b>						
3.1	Users View	No		No		Yes	
3.2	Create a new user	No		No		Yes	
3.3	User change password	Yes		Yes		Yes	
3.4	User activate or deactivate	No		No		Yes	
3.5	User edit/Modify	No		No		Yes	
4	<b>Role-Management</b>						
4.1	Roles View	No		No		Yes	
4.2	Create a new role	No		No		Yes	
4.3	Role edit/modify	No		No		Yes	
5	<b>System Preferences</b>						
5.1	System Preferences View	No		No		Yes	
5.2	System Preferences Edit/save	No		No		Yes	
6	<b>Report Templates</b>						
6.1	Report Templates View	Yes		Yes		Yes	
6.2	Create a New Report Template	No		Yes		Yes	
6.3	Report Templates Edit	No		No		Yes	
6.4	Report Templates Delete	No		No		Yes	
7	<b>Dashboard Manager</b>						
7.1	View	Yes		Yes		Yes	
7.2	Create	No		Yes		Yes	
7.3	Edit	No		No		Yes	

S.No.	Activity	Operator		Supervisor		Administrator	
7.4	Delete	No		No		Yes	
8	<b>Audits</b>						
8.1	Audits View	No		No		Yes	
8.2	Print Audits Table	No		No		Yes	
9	<b>Device Manager(Permissions)</b>						
9.1	Add User	No		Yes		Yes	
10	<b>Recipe Builder</b>						
10.1	View	Yes		Yes		Yes	
10.2	Create	No		Yes		Yes	
10.3	Edit	No		No		Yes	
10.4	Delete	No		No		Yes	
11	<b>Schedulers</b>						
11.1	Create	No		Yes		Yes	
11.2	Edit	No		No		No	
11.3	Delete	No		No		No	
12	<b>Backups</b>						
12.1	Backup now	No		Yes		Yes	
13	<b>Reports</b>						
13.1	View	Yes		Yes		Yes	
13.2	Download	Yes		Yes		Yes	

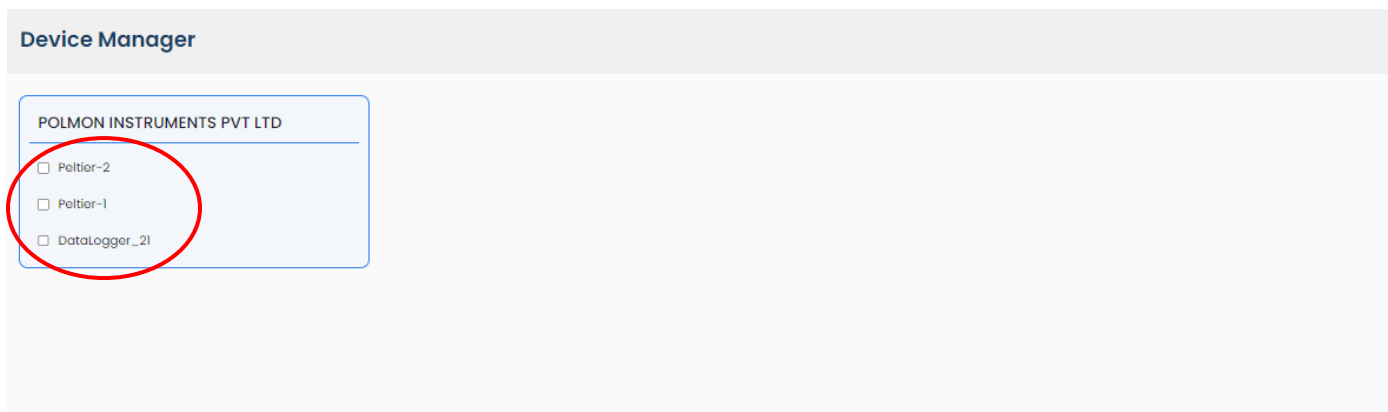
## 10. Device Manager

### 1. Device Manager Page

- In Device Manager Page we give permissions to users for devices.
- If we go to device manager page will display as shown here.



- All the created devices will present in device manager page.
- Click on particular device whatever you want to give permissions as shown.



- After clicking on device page, it will display as shown here.
- Here users which are having permissions to that device will display.

## Device Manager

The screenshot shows the 'Device Manager' interface. On the left, there is a list of devices under the heading 'POLMON INSTRUMENTS PVT LTD'. The devices are: Peltier-2 (unchecked), Peltier-1 (checked), and DataLogger\_21 (unchecked). On the right, there is a 'Permissions' section with an 'Add User' button. Below this is a table with the following data:

Key	Permissions	Visibility	Lock	Delete
polmon	Visibility	Yes		
system	Visibility	Yes		
admin	Visibility	Yes		

## 2. Add user permissions

- To give permissions to device first click on device as shown here.

## Device Manager

This screenshot is identical to the previous one, showing the 'Device Manager' interface with the same device list and permissions table.

- Then click on add user button as shown.

## Device Manager

This screenshot is identical to the previous ones, but the 'Add User' button in the 'Permissions' section is circled in red to indicate it should be clicked.

- After clicking on add user button dialog will open as shown here.

Create or edit a User Permission

User: ALL

Permissions: Yes/No

Visibility: No

Cancel Save

- Then select user from drop down and make visibility toggle button Yes as shown here.
- Then click on save button.

Create or edit a User Permission

User: test12

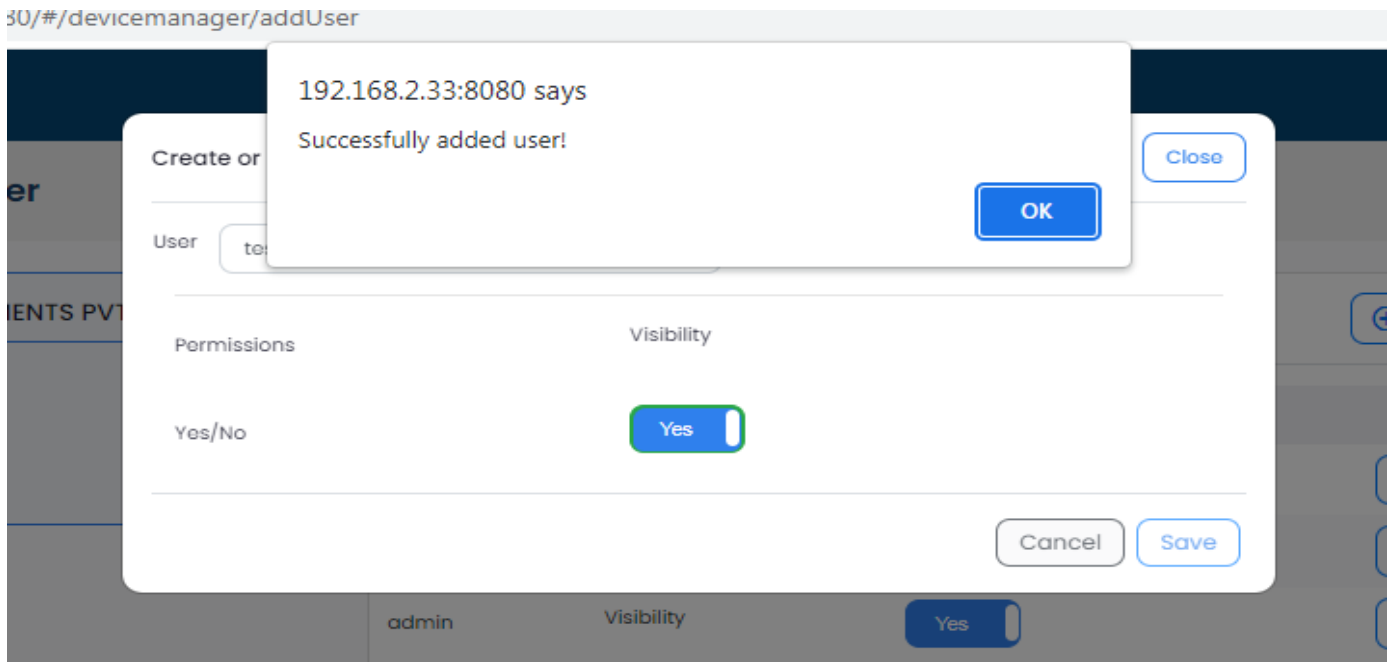
Permissions: Yes/No

Visibility: Yes

Cancel Save

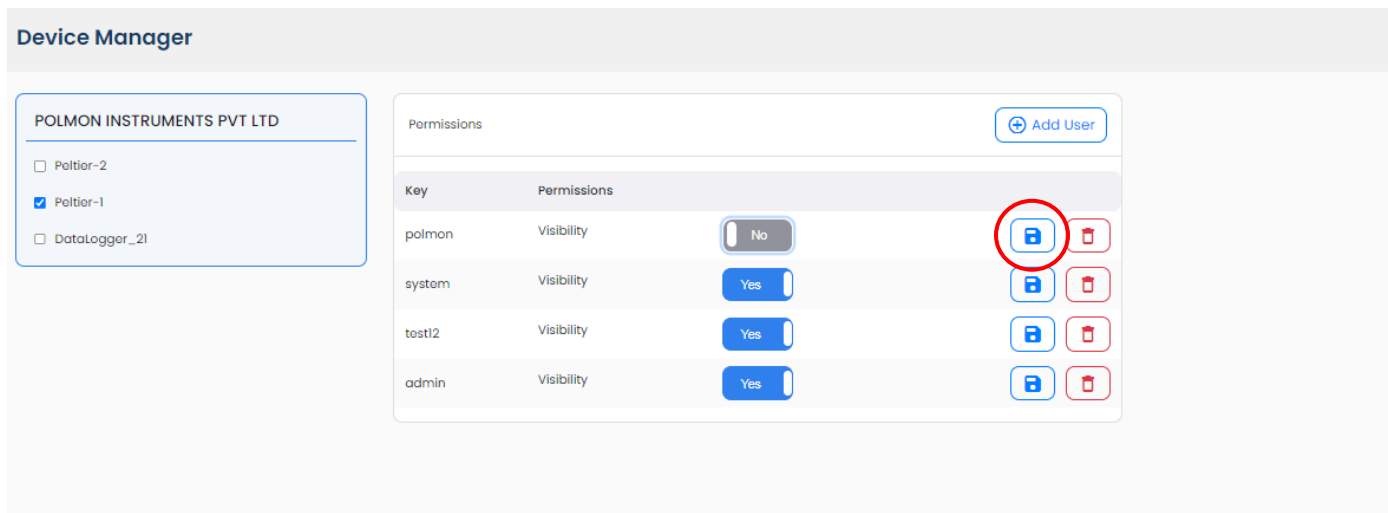
- Then permission added for that device as shown.





### 3. Update user permissions

- To update existing user permissions change visibility click button as shown here.



- After clicking on update button permissions will update as shown here.









192.168.2.33:8080 says  
User permissions updated!

Device Manager

POLMON INSTRUMENTS PVT LTD

- Peltier-2
- Peltier-1
- DataLogger\_21

Permissions

Key	Permissions		
polmon	Visibility	No	 
system	Visibility	Yes	 
test12	Visibility	Yes	 
admin	Visibility	Yes	 

Welcome to

#### 4. Remove user permissions









- To remove permissions to device click on delete button as shown here.

Device Manager

POLMON INSTRUMENTS PVT LTD

- Peltier-2
- Peltier-1
- DataLogger\_21

Permissions

Key	Permissions		
polmon	Visibility	No	 
system	Visibility	Yes	 
test12	Visibility	Yes	 
admin	Visibility	Yes	 

- Then user permissions will remove as shown here.









192.168.2.33:8080 says  
User has been removed!

Device Manager

POLMON INSTRUMENTS PVT LTD

- Peltier-2
- Peltier-1
- DataLogger\_21

Permissions

Key	Permissions		
polmon	Visibility	No	 
system	Visibility	Yes	 
test12	Visibility	Yes	 
admin	Visibility	Yes	 

Welcome to

## 11. System Preferences

### 1. System preferences Page

- If we go to system preferences, page will display as shown here.

**System Preferences**

Data	Values
Auto logout duration(Seconds)	1800
Back up folder location	C:\PISCADA\influxdb\backups
Clear Period	5
Company Logo Path	file:///C:/PISCADA/Natco.png
Company name	NATCO PHARMA LIMITED
Company Place	NAGARJUNA SAGAR
Electronic signatures	<input checked="" type="checkbox"/>
Failed access attempts	3
Password expiry(Days)	365
Password Minimum length	8
Password Reset Through Administrator	<input checked="" type="checkbox"/>
Report Download Folder	C:\reports
Reuse of Previous Passwords	5
Rpm Run when experiment paused	<input checked="" type="checkbox"/>
Time format	dd-MM-yyyy H:mm:ss <span style="float: right;">▼</span>
Timeout configuration for communication failure(Sec)	30

- System preferences having fields which are used in entire PiLAB System.

## 2. Update System Preferences

- Change data and click on save button as shown below.

Company Logo Path	<input type="text" value="file:///C:/PISCADA/Natco.png"/>
Company name	<input type="text" value="NATCO PHARMA LIMITED"/>
Company Place	<input type="text" value="NAGARJUNA SAGAR"/>
Electronic signatures	<input checked="" type="checkbox"/>
Failed access attempts	<input type="text" value="3"/>
Password expiry(Days)	<input type="text" value="365"/>
Password Minimum length	<input type="text" value="8"/>
Password Reset Through Administrator	<input checked="" type="checkbox"/>
Report Download Folder	<input type="text" value="C:\reports"/>
Reuse of Previous Passwords	<input type="text" value="5"/>
Rpm Run when experiment paused	<input checked="" type="checkbox"/>
Time format	<input type="text" value="dd-MM-yyyy HH:mm:ss"/>
Timeout configuration for communication failure(Sec)	<input type="text" value="30"/>

- After clicking on save button it will display alert as shown here.

**localhost:8080 says**  
Successfully updated systempreferences.

Company Logo Path	<input type="text" value="file:///C:/PISCADA/Natco.png"/>
Company name	<input type="text" value="NATCO PHARMA LIMITED"/>
Company Place	<input type="text" value="NAGARJUNA SAGAR"/>
Electronic signatures	<input checked="" type="checkbox"/>
Failed access attempts	<input type="text" value="3"/>
Password expiry(Days)	<input type="text" value="365"/>
Password Minimum length	<input type="text" value="8"/>
Password Reset Through Administrator	<input checked="" type="checkbox"/>
Report Download Folder	<input type="text" value="C:\reports"/>
Reuse of Previous Passwords	<input type="text" value="5"/>
Rpm Run when experiment paused	<input checked="" type="checkbox"/>
Time format	<input type="text" value="dd-MM-yyyy HH:mm:ss"/>
Timeout configuration for communication failure(Sec)	<input type="text" value="30"/>

### 3. Auto logout duration(Seconds)

- After login to PiLAB, if the user is inactive more than the ‘**Auto logout duration**’ then user account shall be logged out automatically.

### 4. Backup folder location

- In PiLAB, the devices PV’s and Configuration backup download path should be mentioned here. If any backup is taken from PiLAB the backup shall be saved in the given path. Path must be in this format only. **Ex: “C:\PiLAB\influxdb\backups”**.

### 5. Company Logo Path

- Whatever Logo is required in Reports, the “logo path” must be given here. You can copy the path here this logo can be used in right side of the reports. Path must be in this format only. **Ex: [file:///C:/ PiLAB /polmon.png](file:///C:/PiLAB/polmon.png).**

### 6. Company Name

- Whatever company name is required in Reports, we should mention that company name here.

### 7. Company Place

- Whatever company place is required in Reports, we should mention that company place here.

### 8. Failed access attempts

- While login to PiLAB, if wrong password is entered more than the “**Number of wrong password attempts**”, then user account shall be locked.

### 9. Password Expiry(Days)

- User password will expire after days mentioned in “**Password Expiry (Days)**” field.

### 10. Password Minimum Length

- The user’s password minimum length can be configured here and PiLAB doesn’t allow creating the password with less than the minimum length.

### 11. Password Reset Through Administrator

- If password reset through administrator is checked then only Administrator can reset the expired password of the user, if it is unchecked user can reset the expired password.

### 12. Report Download Folder

- All the Scheduled reports will download in this folder path, Ex: C:\reports.

### 13. Reuse of Previous Passwords

- In PiLAB up to how many previous passwords can be reused.

### 14. Time format

- All reports time format can be configured here, by selecting the “**Time format**” from the drop down list.

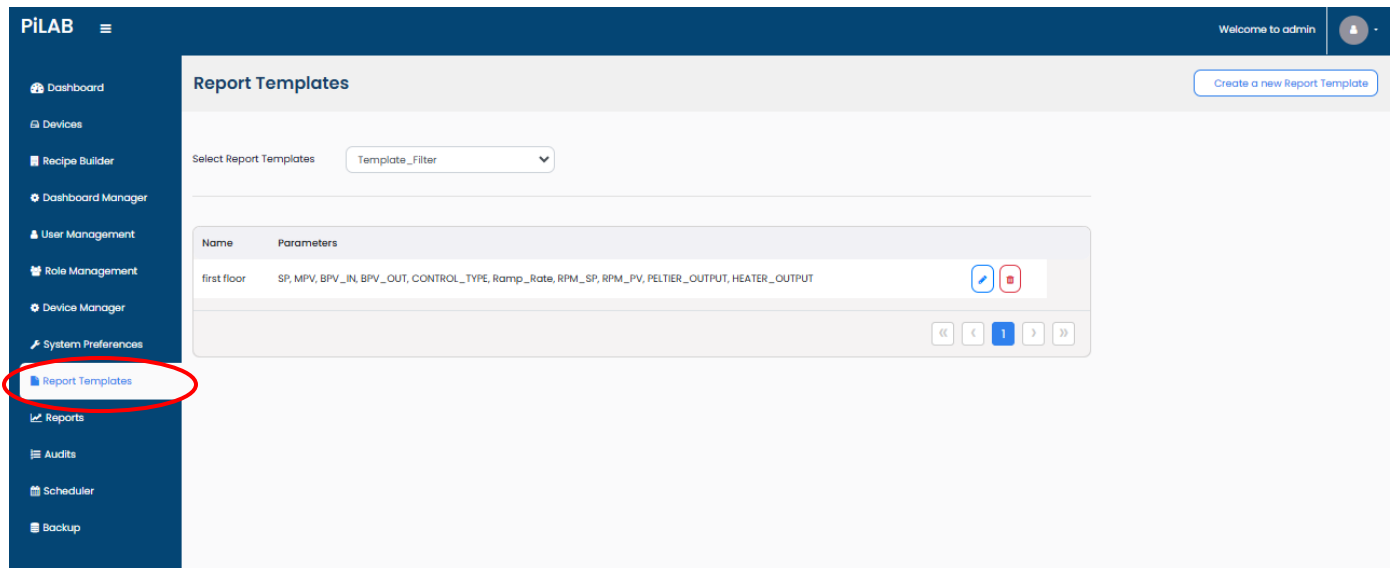
### 15. Timeout configuration for communication failure

- We can configure the “Timeout for communication failure between Device and PiLAB”. If the communication failure is more than or equal to configured timestamp in this field then “communication failure” will generate.

## 12. Report Templates

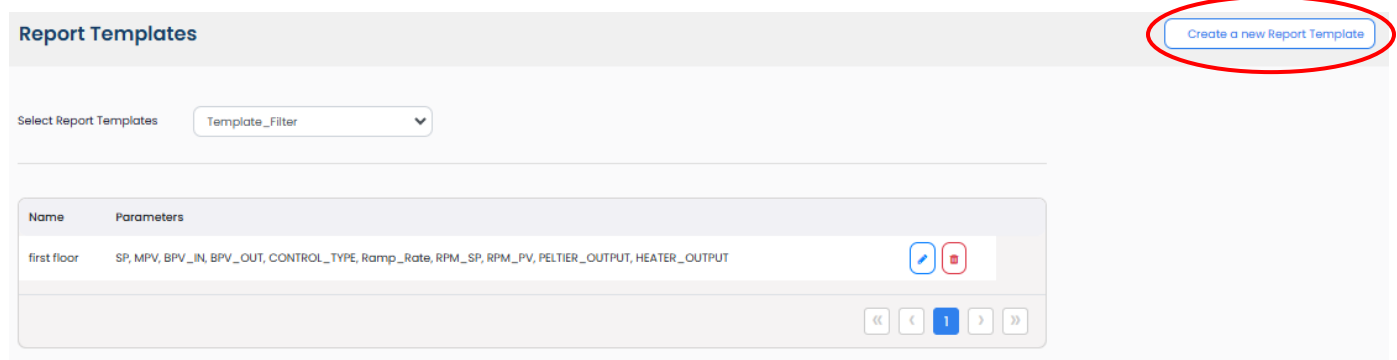
### 1. Report Templates page

- If we go to report templates page all the created reports will display as shown here.

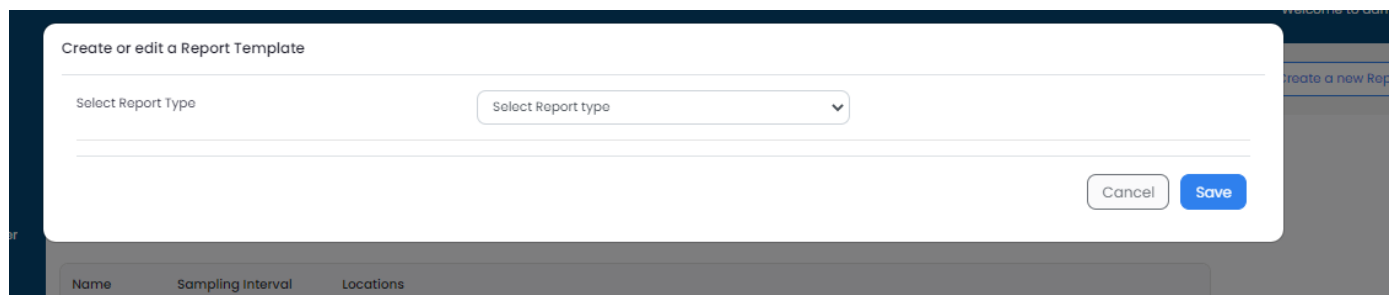


### 2. Report Templates Creation

- Click on create new report button as shown here.



- After clicking on button dialog will open as shown.



- Select required parameters and enter data then click on save button as shown.

Select Report Type PV's Report ▼

---

- SP(°C)
- MPV(°C)
- BPV\_IN(°C)
- BPV\_OUT(°C)
- CONTROL\_TYPE
- Ramp\_Rate(deg/min)
- RPM\_SP
- RPM\_PV
- PELTIER\_OUTPUT(%)
- HEATER\_OUTPUT(%)
- M\_PID\_RESULT(%)
- M\_P\_TERM
- M\_I\_TERM
- JACKET\_SP(°C)
- CURRENT\_RAMP\_SP(°C)
- J\_P\_TERM
- J\_I\_TERM
- LH\_PV
- RESET\_SOURCE

Report Name \*

Sampling Interval \*  Secs ▼

From & To Date  Yes

Report Generated Time  Yes

UserName  Yes

Cancel
Save

- Report template will create.

### 3. Report Templates Edit

- Click on Edit button as shown here.

**Report Templates** Create a new Report Template

---

Select Report Templates Template\_Filter ▼

---

Name	Sampling Interval	Locations	Actions
solution-2	1 Minute	SP, MPV, JPV_IN, JPV_OUT, CONTROL_TYPE, Ramp_SP, MOUT, JSP, CV_OUTPUT, HEATER_OUTPUT	<div style="display: flex; justify-content: flex-end; gap: 5px;"> <span style="border: 1px solid #ccc; padding: 2px 5px; border-radius: 50%; color: white; background-color: #007bff;">✎</span> <span style="border: 1px solid #ccc; padding: 2px 5px; border-radius: 50%; color: white; background-color: #dc3545;">✖</span> </div>

«
<
1
>
»

- After clicking on edit button dialog will open as shown.

Create or edit a Report Template

Select Report Type: PV's Report

Checkboxes (all checked): SP, MPV, JPV\_IN, JPV\_OUT, CONTROL\_TYPE, Ramp\_Rate, RPM\_SP, RPM\_PV, PELTIER\_OUTPUT, HEATER\_OUTPUT

Fields:

- ID: 133554
- Report Name \*: solution-2
- Sampling Interval \*: 1
- Unit: Minutes
- From & To Date: Yes
- Report Generated Time: Yes
- UserName: Yes

Buttons: Cancel, Save

- Update required data click on save button.

Create or edit a Report Template

Select Report Type: PV's Report

Checkboxes (all checked): SP, MPV, JPV\_IN, JPV\_OUT, CONTROL\_TYPE, Ramp\_Rate, RPM\_SP, RPM\_PV, PELTIER\_OUTPUT, HEATER\_OUTPUT

Fields:

- ID: 133554
- Report Name \*: solution-2
- Sampling Interval \*: [dropdown arrow]
- Unit: Minutes
- From & To Date: Yes
- Report Generated Time: Yes
- UserName: Yes

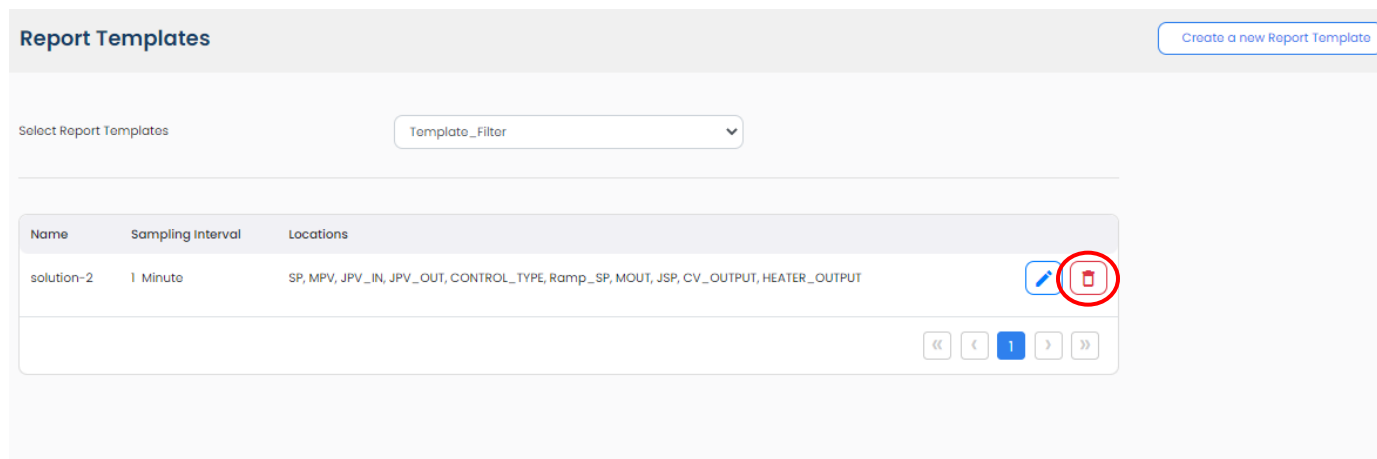
Buttons: Cancel, Save

- Then report template will update.

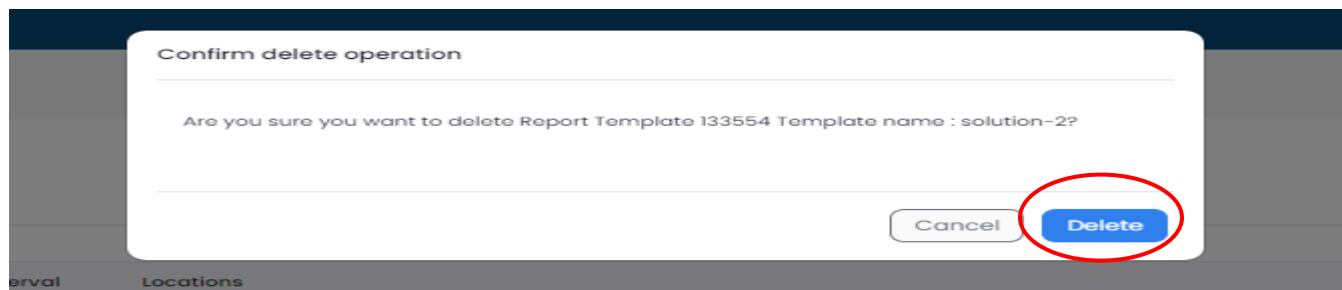


#### 4. Report Template delete

- Click on delete button to delete report template as shown here.



- After clicking on delete button it will ask for confirmation, click on Delete as shown.



- Then report template will delete.

## 13. Audits

### 1. Audits Page

- If we go audits page all audit events of PiLAB will display as shown.

The screenshot shows the PiLAB interface with the 'Audits' page selected in the sidebar. The main content area displays a table of audit events with the following data:

Date	User	Audit Event	Description
27-01-2023 11:02:38	admin	Device Updated	Device name : DataLogger_21
27-01-2023 11:02:26	admin	Report Template updated	Report Name : solution-2
27-01-2023 10:14:44	admin	Authentication success	Login IP : 192.168.2.33
27-01-2023 10:14:38	admin	Session logout	User name : admin
27-01-2023 10:14:08	admin	Authentication success	Login IP : 192.168.2.33

The sidebar menu includes: Dashboard, Device, Recipe Builder, Dashboard Manager, User management, Role management, Device Manager, System Preferences, Report Templates, Audits (highlighted with a red circle), Scheduler, and Backup. The top navigation bar shows 'Welcome to admin' and a user profile icon.

- We can see all events of PiLAB in Audits Page.
- We can Filter Audits using Date filter, User Filter and Event Filter.
- If we select from and to date then all audit events in that duration will display as shown.


The screenshot shows the PiLAB interface with the 'Audits' page selected. The filters are set to 'From: 26-01-2023 11:00:00' and 'To: 27-01-2023 11:00:00'. The table displays the following filtered audit events:

Date	User	Audit Event	Description
27-01-2023 10:14:44	admin	Authentication success	Login IP : 192.168.2.33
27-01-2023 10:14:38	admin	Session logout	User name : admin
27-01-2023 10:14:08	admin	Authentication success	Login IP : 192.168.2.33

The sidebar menu is the same as in the previous screenshot. The top navigation bar shows 'Welcome to admin' and a user profile icon.

- We can filter audits depending on user and event filters as shown.

**Audits**

From: 26-01-2023 11:00:00 To: 27-01-2023 11:00:00 Select User: admin Select Event: Authenticatic 


Date	User	Audit Event	Description
27-01-2023 10:14:44	admin	Authentication success	Login IP : 192.168.2.33
27-01-2023 10:14:08	admin	Authentication success	Login IP : 192.168.2.33

« ‹ 1 › »

## 2. Audits Report

- We can also down report of audits.
- Click on print button to download audit report as shown here.

**Audits**

From: 26-01-2023 11:00:00 To: 27-01-2023 11:00:00 Select User: admin Select Event: Authenticatic 

Date	User	Audit Event	Description
27-01-2023 10:14:44	admin	Authentication success	Login IP : 192.168.2.33
27-01-2023 10:14:08	admin	Authentication success	Login IP : 192.168.2.33

« ‹ 1 › »

- Then report will download.

## 14. Scheduler

### 1. Scheduler Page

- If we go to scheduler page will display as shown here.

The screenshot shows the PiLAB Scheduler page. The left sidebar contains a menu with items: Dashboard, Device, Recipe Builder, Dashboard Manager, User management, Role management, Device Manager, System Preferences, Report Templates, Audit, Scheduler (circled in red), and Backup. The main content area is titled 'Schedulers' and contains a 'Schedule New Job' form. The form has three main sections: 'Job Type' with a dropdown menu, 'Job Name' with a text input field, and 'Schedule for' with a dropdown menu and the word 'Every:' next to it. A blue 'Save' button is positioned to the right of the form. Below the form is a table with the following columns: Job Name, Job Type, ReportName, Scheduled At, Update, and Delete.

- We can create, update and delete the Schedule job in Schedule page.

### 2. Schedule Job Creation

- In Scheduler page we can create new schedule job.
- Select job type from dropdown as shown here.

This is a close-up view of the 'Schedule New Job' form. The 'Job Type' dropdown menu is highlighted with a red circle and shows the selected option 'Backup'. The 'Job Name' text input field is empty. The 'Schedule for' dropdown menu is also visible. A blue 'Save' button is located to the right of the form. Below the form is a table with columns: Job Name, Job Type, ReportName, Scheduled At, Update, and Delete.

- Now Enter Job Name and select Schedule for from dropdown as shown here.
- Then click on save button.

### Schedulers

Schedule New Job

Job Type: Backup Job Name: Backup\_Job

Schedule for: Every: Day at 0 : 0

**Save**

Job Name	Job Type	ReportName	Scheduled At	Update	Delete

- After Clicking on save button it will ask for reason as shown here.
- Enter reason click on OK.

192.168.2.33:8080 says  
Please enter a reason :

test

**OK** Cancel

### Schedulers

Schedule New Job

Job Type: Backup Job Name: Backup\_Job

Schedule for: Every: Day at 0 : 0

**Save**

Job Name	Job Type	ReportName	Scheduled At	Update	Delete

- Then schedule job will create as shown here.

### Schedulers

Schedule New Job

Job Type: Backup Job Name: Backup\_Job

Schedule for: Every: Day at 0 : 0

**Save**

Job Name	Job Type	ReportName	Scheduled At	Update	Delete
Backup_Job	Backup		Every: Day at 0 : 0		

### 3. Schedule Job Edit

- Change data of the schedule job and click on update button as shown.

**Schedulers**

Schedule New Job

Job Type  Job Name

Schedule for Every:

Job Name	Job Type	ReportName	Scheduled At	Update	Delete
Backup_Job	Backup		Every: <input type="text" value="Hour"/> at <input type="text" value="0"/> past the hour	<input type="button" value="Update"/>	<input type="button" value="Delete"/>

- Then it will ask for reason enter reason and click on OK button as shown here.

**Schedulers**

Schedule New Job

Job Type  Job Name

Schedule for Every:

Job Name	Job Type	ReportName	Scheduled At	Update	Delete
Backup_Job	Backup		Every: <input type="text" value="Hour"/> at <input type="text" value="0"/> past the hour	<input type="button" value="Update"/>	<input type="button" value="Delete"/>

192.168.2.33:8080 says

Please enter a reason :

- Then schedule job will update.

#### 4. Schedule Job Delete

- Click on delete button to delete schedule job as shown here.

**Schedulers**

Schedule New Job

Job Type  Job Name

Schedule for Every:

Job Name	Job Type	ReportName	Scheduled At	Update	Delete
Backup_Job	Backup		Every: <input type="text"/> Hour <input type="text"/> at <input type="text"/> 0 <input type="text"/> past the hour	<input type="button" value="Update"/>	<input type="button" value="Delete"/>

- After clicking on delete button it will ask reason enter reason and click on OK button.

**Schedulers**

Schedule New Job

Job Type  Job Name

Schedule for Every:

Job Name	Job Type	ReportName	Scheduled At	Update	Delete
Backup_Job	Backup		Every: <input type="text"/> Hour <input type="text"/> at <input type="text"/> 0 <input type="text"/> past the hour	<input type="button" value="Update"/>	<input type="button" value="Delete"/>

192.168.2.33:8080 says

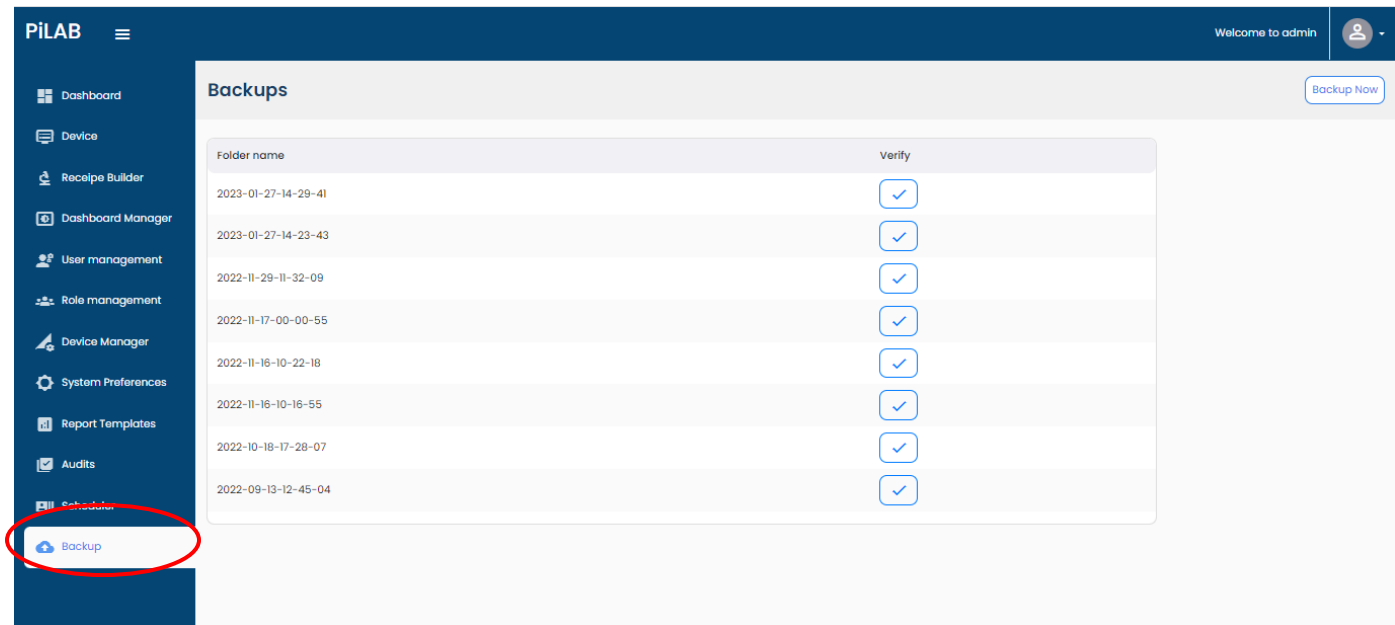
Please enter a reason :

- Then schedule job will delete.

## 15. Backup

### 1. Backup Page

- If we go to backup page all backups will display as shown.

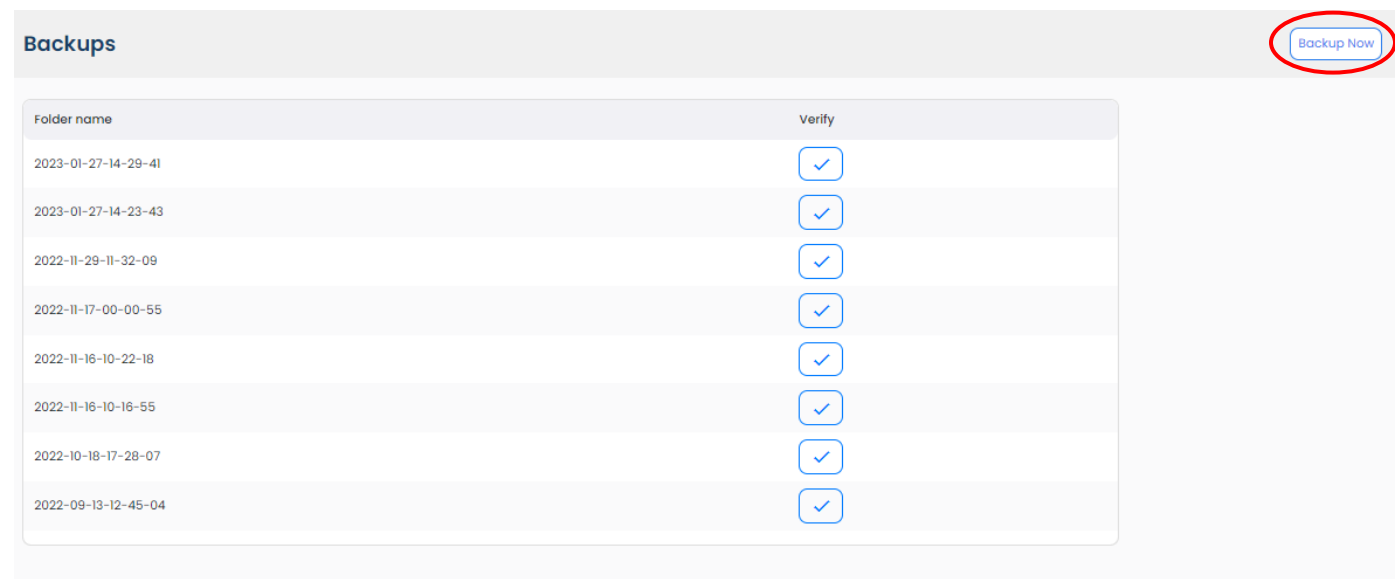


The screenshot shows the PiLAB interface. On the left is a navigation menu with items like Dashboard, Device, Recipe Builder, Dashboard Manager, User management, Role management, Device Manager, System Preferences, Report Templates, Audits, and Backup. The 'Backup' item is circled in red. The main content area is titled 'Backups' and contains a table with two columns: 'Folder name' and 'Verify'. The table lists eight backup entries, each with a checkmark in the 'Verify' column. A 'Backup Now' button is located in the top right corner of the main content area.

Folder name	Verify
2023-01-27-14-29-41	<input checked="" type="checkbox"/>
2023-01-27-14-23-43	<input checked="" type="checkbox"/>
2022-11-29-11-32-09	<input checked="" type="checkbox"/>
2022-11-17-00-00-55	<input checked="" type="checkbox"/>
2022-11-16-10-22-18	<input checked="" type="checkbox"/>
2022-11-16-10-16-55	<input checked="" type="checkbox"/>
2022-10-18-17-28-07	<input checked="" type="checkbox"/>
2022-09-13-12-45-04	<input checked="" type="checkbox"/>

### 2. Backup Creation

- Click on Backup Now button to create backup as shown here.

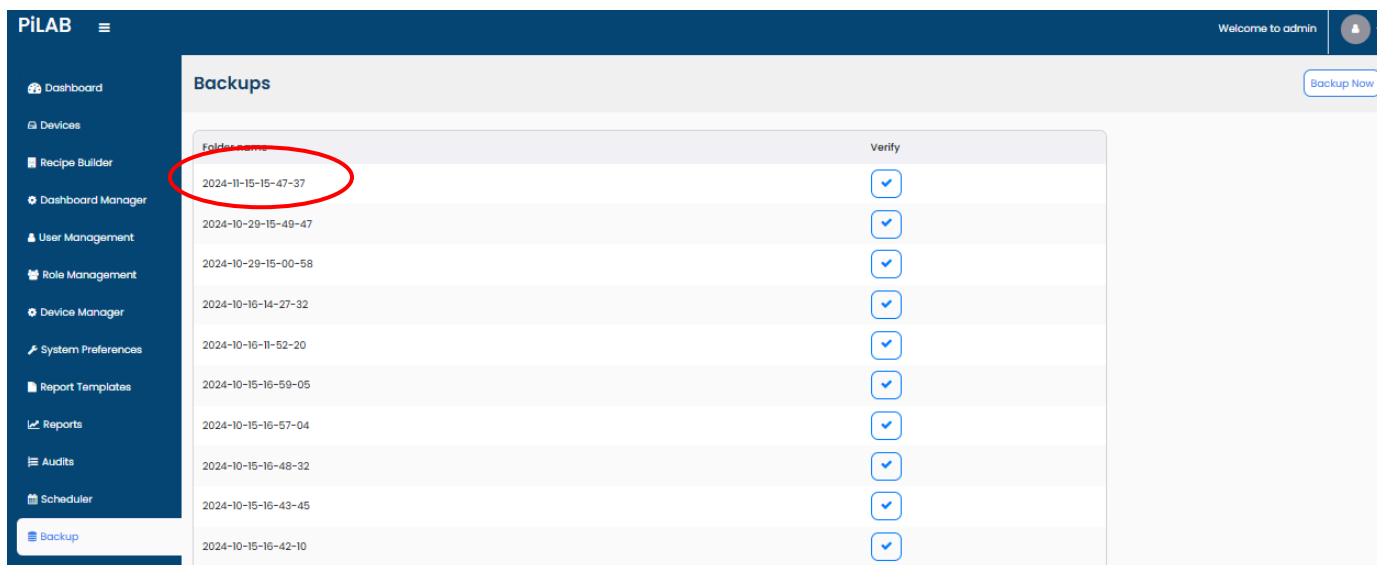


This screenshot is similar to the previous one, showing the 'Backups' page. The 'Backup Now' button in the top right corner is circled in red, indicating it should be clicked to create a new backup.

Folder name	Verify
2023-01-27-14-29-41	<input checked="" type="checkbox"/>
2023-01-27-14-23-43	<input checked="" type="checkbox"/>
2022-11-29-11-32-09	<input checked="" type="checkbox"/>
2022-11-17-00-00-55	<input checked="" type="checkbox"/>
2022-11-16-10-22-18	<input checked="" type="checkbox"/>
2022-11-16-10-16-55	<input checked="" type="checkbox"/>
2022-10-18-17-28-07	<input checked="" type="checkbox"/>
2022-09-13-12-45-04	<input checked="" type="checkbox"/>

- Then backup will create as shown here.



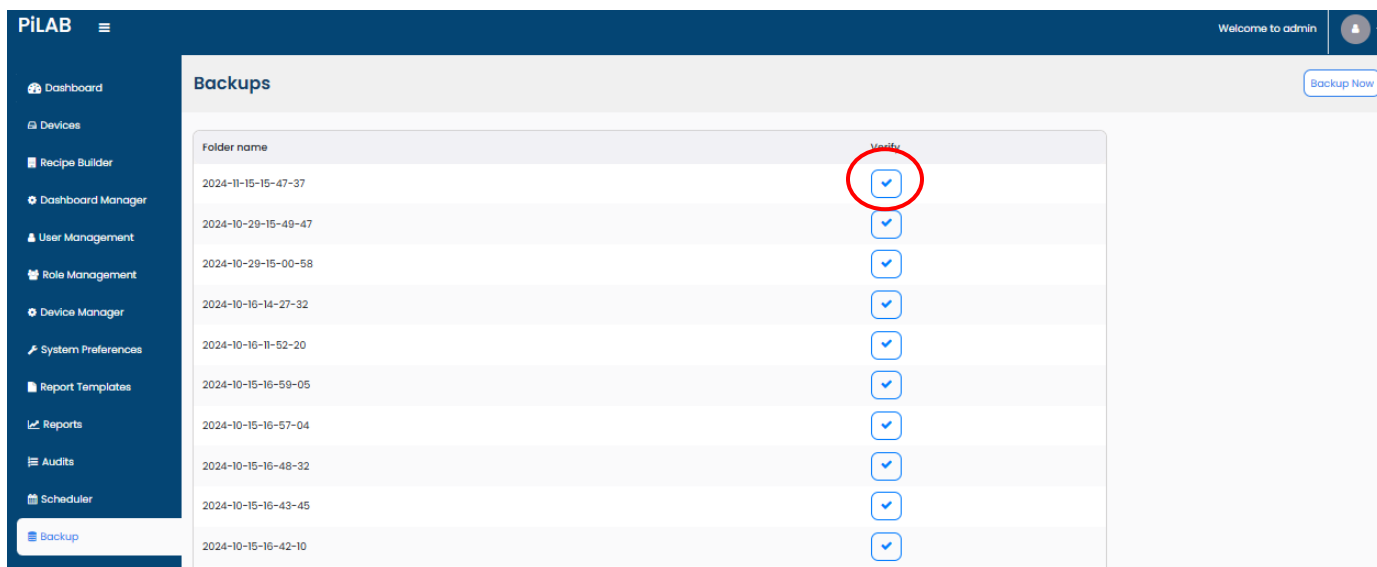


The screenshot shows the PILAB interface with a sidebar on the left containing various menu items. The main content area is titled "Backups" and features a table with two columns: "Folder name" and "Verify". The first row in the table has the folder name "2024-11-15-15-47-37" circled in red. The "Verify" column contains a blue checkmark icon in a square button for each row. A "Backup Now" button is located in the top right corner of the main content area.

Folder name	Verify
2024-11-15-15-47-37	<input type="checkbox"/>
2024-10-29-15-49-47	<input type="checkbox"/>
2024-10-29-15-00-58	<input type="checkbox"/>
2024-10-16-14-27-32	<input type="checkbox"/>
2024-10-16-11-52-20	<input type="checkbox"/>
2024-10-15-16-59-05	<input type="checkbox"/>
2024-10-15-16-57-04	<input type="checkbox"/>
2024-10-15-16-48-32	<input type="checkbox"/>
2024-10-15-16-43-45	<input type="checkbox"/>
2024-10-15-16-42-10	<input type="checkbox"/>

### 3. Backup Verification

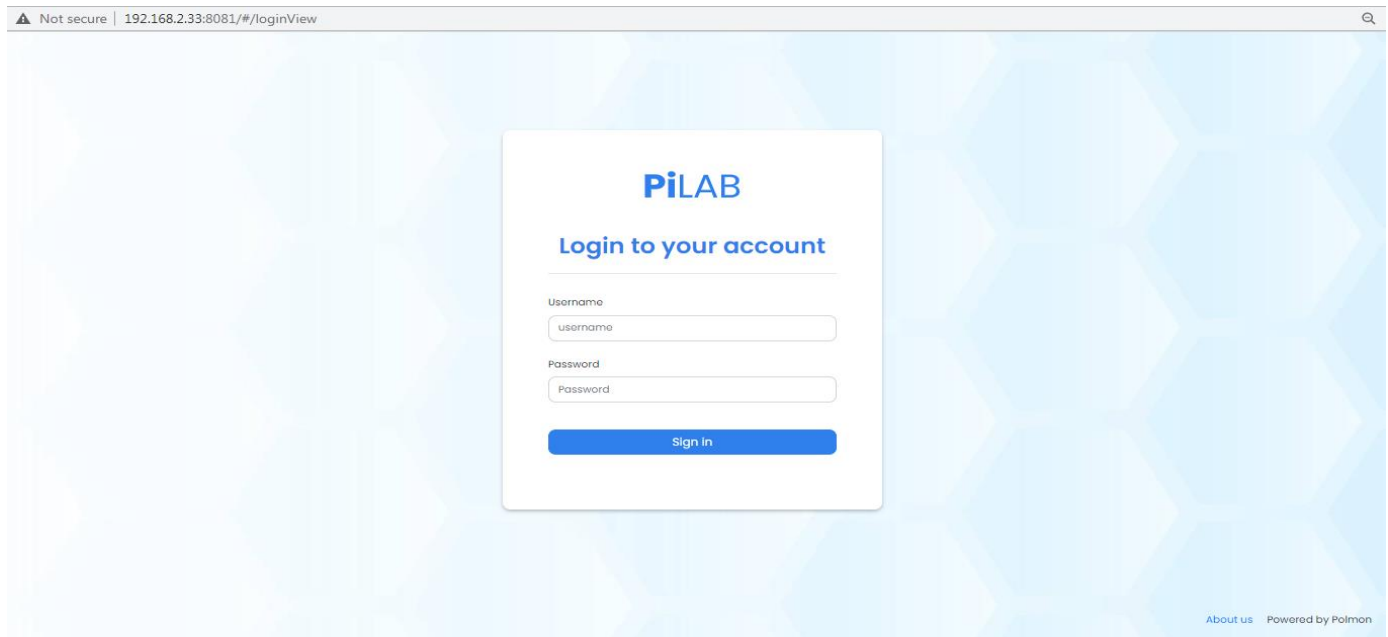
- Click on verify button in order to verify the backup.



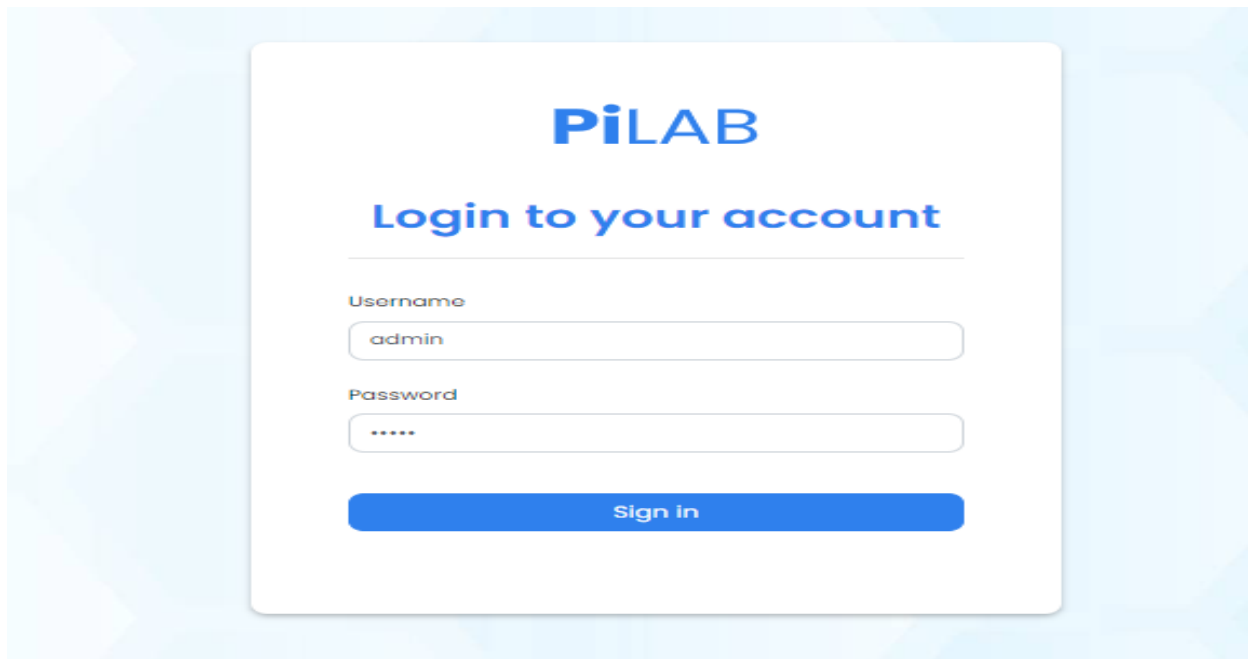
This screenshot is identical to the previous one, but the "Verify" button for the first folder, "2024-11-15-15-47-37", is circled in red to indicate the action to be taken.

Folder name	Verify
2024-11-15-15-47-37	<input type="checkbox"/>
2024-10-29-15-49-47	<input type="checkbox"/>
2024-10-29-15-00-58	<input type="checkbox"/>
2024-10-16-14-27-32	<input type="checkbox"/>
2024-10-16-11-52-20	<input type="checkbox"/>
2024-10-15-16-59-05	<input type="checkbox"/>
2024-10-15-16-57-04	<input type="checkbox"/>
2024-10-15-16-48-32	<input type="checkbox"/>
2024-10-15-16-43-45	<input type="checkbox"/>
2024-10-15-16-42-10	<input type="checkbox"/>

- After clicking verify button a new window will open with 8081 port after few minutes in chrome as shown here.



- Now login with username and password as shown here.



- PiLAB Verification application will open as shown here.
- We can verify data of entire backup in this verify application.

The screenshot displays the PiLAB dashboard interface. At the top, the header shows 'PiLAB' and a backup folder name 'Backup FolderName:2024-11-15-15-47-37'. The user is logged in as 'Welcome to admin'. The main content area is titled 'first floor lab' and features a 'Polstat3500' device. A red banner at the top right of the device area indicates a 'Communication Failure'. Below this, four blocks are shown, each with a 'STOPPED' status and a 'Manual' label. Each block contains a flask icon and a table of parameters: MPV °C, BPV °C, SP °C, and RPM. All parameter values are currently '-'. A 'Rectangular Snip' button is visible at the bottom right of the dashboard area.

Block	MPV °C	BPV °C	SP °C	RPM
Block1_heating_135	-	-	-	-
block2_heating_120	-	-	-	-
block3_13-11-2024_90	-	-	-	-
Block4_heating_120	-	-	-	-