

Vario2 IPPoE 2.5 – Updated Features

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Additional External Output Options

The External Output could previously be triggered for the following functions :

- Photocell
- Photocell AND Ext I/P
- Ext I/P
- Photocell OR Ext I/P

In each of these scenarios, there will be a signal through the yellow and white wires when the selected option above is true and the active state is set to short circuit/low.

Vario2 IPPoE 2.5 adds two further options:

1) Photocell AND NOT Ext I/P

This has been added as the yellow and white wires may be connected to a camera's I/O slot and the following scenario may be desired:

Example : Vario2 Hybrid IPPOE Illuminator

- Illuminator detects it is night-time (photocell active) – Illuminator external output triggers camera to go to night mode.
- Camera /Sensor detects motion and triggers white light on the illuminator via external input wires . Because external input is now active, illuminator external output state changes and the camera is triggered into day mode
- When external input stops, camera reverts to night mode (if photocell still active)

None of the existing modes could have been used to achieve this scenario and so this one has now been added.

2) Fault

The fault option for external output can be used in two ways.

- Signal through the wires when there is a fault – set Active State to Short Circuit /Low
 - No signal unless an LED fault or a low or high voltage fault occurs
- Signal through the wires when no fault present – set Active State to Open Circuit/High
 - Continuous signal until an LED fault or a low or high voltage fault occurs
 - The benefit of using this option is that power failure / outages will also be detected as there will be no signal through the yellow and white wires if power to the illuminator is lost.

This option has been added to enable users to monitor the health of the illuminator via third party hardware that the user can wire the yellow and white wires into.

External Output		
	Trigger State	Active State
External Output	Photozell Only	Short Circuit / Low
Photozell	Disable Photozell Only Photozell AND Ext I/P Photozell AND NOT Ext I/P Ext I/P Photozell OR Ext I/P Fault	
Photozell Sensitivity	-	

Additional Network Security

Vario 2 IPPoE 2.5 allows the user to specify a secondary HTTP port and provides an option to disable port 80.

Secondary HTTP ports can be useful for port forwarding as some ISPs (Internet Service Provider's) don't allow forwarding to port 80 but this feature can also be used to switch HTTP traffic to a different port, which when coupled with disabling port 80 can prevent unauthorised attempts to access the illuminators web interface as the secondary HTTP port would need to be known to access the pages.

For example, you would usually access your illuminator in a browser by typing it's IP address. Silently, this is using port 80 (default HTTP port). If you disabled port 80 and specified 42890 as your secondary HTTP port, you would need to type the following into the browser to access the illuminator:

<http://192.168.1.100:42890>

If someone doesn't know the secondary HTTP port, then they can't gain access to the illuminators web interface.

On the network page there is the following caution next to the field where you can specify the secondary port

Secondary HTTP Port:	<input type="text" value="42890"/>
CAUTION: This is an advanced setting, leave this as 0 if it is not needed as incorrect use could lead to the lamp malfunctioning.	
<input checked="" type="checkbox"/> Disable Port 80	

The illuminator malfunction in the caution message refers to the customer possibly being unable to access the illuminator. We recommend the following :

If you are planning on using a secondary HTTP port and want to disable port 80, we recommend that you leave port 80 enabled whilst you verify that your secondary HTTP port works as you intend otherwise you could find yourself unable to access your illuminator and requiring a Hard Reset to restore factory settings.

The secondary HTTP port can be any number between 1 and 65535

The following text will be added to the User Manual :

The secondary HTTP port can be any number between 1 and 65535. If you choose to use a secondary HTTP port, we recommend that you use a high number as the lower port numbers can be reserved or deemed "unsafe" by some web browsers and you won't be able to access your illuminators web interface in this case.

Auto IP

The illuminators will no longer ship with the default IP address of 192.168.2.80
DHCP is now enabled by default.

When you connect your illuminator to a network now, the following will occur:

- Network with DHCP capability – illuminator will be automatically assigned an IP address on connection.
- Network without DHCP capability – illuminator will be assigned an IP address starting with 169.254.X.Y. (X and Y will differ for each illuminator connected to the network), the user then needs to statically assign an address to the illuminator.

The reasoning behind moving to this functionality change is that older illuminators had a problem whereby if someone selected "Obtain address automatically (DHCP)" via the Discovery Application when there was no DHCP server, the illuminator would have no IP address and a Hard Reset would be required to access it. This new functionality ensures an illuminator always has an IP address irrespective of the network setting, meaning the user doesn't have to perform a Hard Reset if they incorrectly click "Obtain address automatically (DHCP)".

Note : The new functionality does mean if the customer has an illuminator where they do not know the IP address, they are not connected to a network and do not have the Discovery Tool they cannot use a default IP address and load it straight into the browser to access the illuminator as they could before. A Hard Reset will also result in a random IP address starting 169.254.X.Y. being generated, so a customer in this scenario will not be able to access the illuminator by using Hard Reset either. They will need to download/use the DiscoMan or Discovery Tool to find the IP address and access the illuminator.

Software (Firmware) File Filter

Vario2 IPPoE 2.5 adds a check when upgrading the illuminator's firmware to ensure that the firmware that is about to be loaded is the correct one for the illuminator.

Now that Raytec has multiple product lines of networked illuminators, this ensures that the correct update is applied to the product for that product family.

For example, on a single wavelength Vario2 IPPoE 2.5 illuminator, the web page is looking for the name *Var2_IPPoE_v*.hex* where * is a version number e.g. *Var2_IPPoE_v2_1_3.hex*, *Var2_IPPoE_v2_5_0.hex*.

On a Hybrid illuminator, the check is for *Hybrid_IPPoE_v*.hex*. Again, * is the version number check e.g. *Hybrid_IPPoE_v3_1_2.hex*, *Hybrid_IPPoE_v3_5_0.hex*.

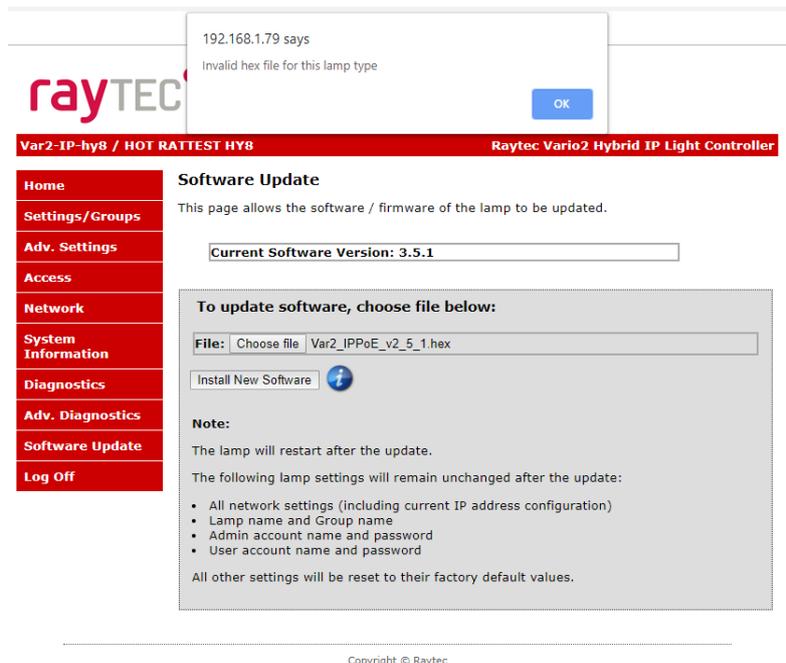
If you tried to load Hybrid software onto a non Hybrid illuminator or non Hybrid software onto a Hybrid illuminator you will be prevented from doing so and get an invalid file message.

Examples :

A file with a .jpg file extension will be prevented

If you load Hybrid~~d~~_IPPoE_v3_5_1.hex onto a Hybrid IPPoE illuminator it will not be accepted because there is an additional d in the start of the file name

See below for message returned when you try and load invalid software



Additional Password Security - Default password change

Vario2 IPPoE 2.5 has a new feature whereby you will be forced to change the administrator password if default credentials are detected when logging into the illuminator.

This security step has been taken as default credentials for networked security products are easily obtainable online from product literature, with Raytec Vario IPPoE products being no different in this respect.

There are no password rules such as inclusion of numbers, lowercase characters, uppercase characters and symbols however Raytec strongly advises that you set a strong password to prevent unauthorised administrator access to your illuminator.

Coupled with the secondary HTTP port and disable 80 features, you can make it very difficult for someone to gain unauthorised access to your illuminator(s).

User Log On

Default password detected, please change password for admin account

Password:	<input type="password" value="....."/>
Confirm Password:	<input type="password" value="....."/>

Show Passwords

Black Box Recorder (Additional Diagnostics)

Raytec has added a new diagnostic feature in Vario2 IPPoE 2.5 firmware, the Black Box Recorder. The illuminator now records how long the illuminator has been powered up for, how long the LEDs have been on for and the maximum voltage the illuminator has seen over the lifetime of the illuminator.

Coupled with the existing diagnostics and advanced diagnostics information, this provides Raytec with more information to help troubleshoot any issues you have with your illuminator to get you back up and running quickly.-

This can be found on the *Diagnostics* web page of the illuminator web interface:

Max Volts: 54 Volts
Duration - Lamp On (Total): 30 days, 2 hours, 39 minutes
Duration - Power Connected (Total) : 46 days, 14 hours, 11 minutes

Note : Maximum voltage recorded is PoE or DC whichever is the higher

Note : Recording starts after a maximum of 5 minutes from power on.

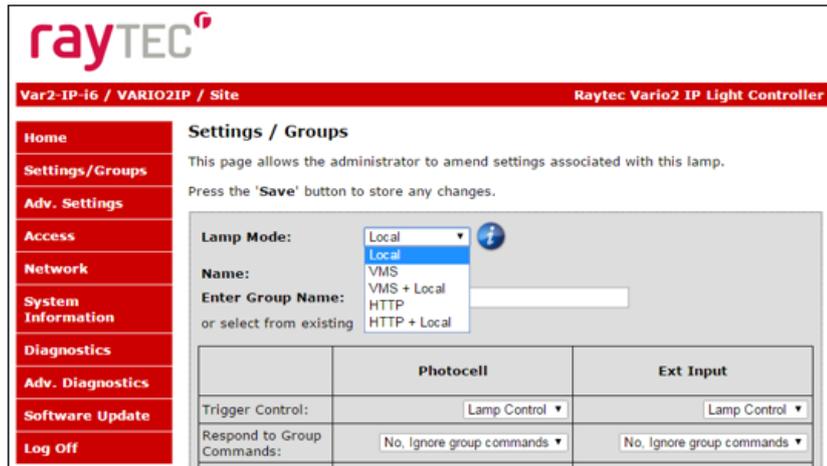
(This is to prevent power on at the factory during standard production testing being recorded on the black box recorder)

HTTP API Integrator Updates

There have been a few upgrades to our HTTP API in Vario2 IPPOE 2.5

You can now do the following

- 1) Find out if the LEDs are on or off via a HTTP command
The *led* parameter on the status interface now returns *unknown* when the LEDs are off ; *good* when the LEDs are on *or bad* when there is an LED fault.
- 2) Status interface available in any illuminator mode
You no longer have to set the mode of the illuminator to HTTP or HTTP + Local to query the status interface of the illuminator. This means that once you have the IP address of the illuminator you can send HTTP commands to the status interface to query the various parameters available without setting a lamp mode.



Note: If you plan to use power, deter or settings interfaces you must then set the illuminator to HTTP or HTTP + local mode first.

Example :

HTTP command sent :

<http://admin:pass1@192.168.1.94/status.cgi?Parameter=all>

Data Returned :

```
{
  "Status": "OK",
  "Photocell": "day",
  "PCAdjust": "20",
  "Telemetry": "inactive",
  "MACAddress": "04916234290E",
  "Model": "Var2-IP-hy8",
  "Name": "VARIO2IP",
  "InputVoltage": "good",
  "LED": "unknown",
  "AuxOutput": "open",
  "DeterPat": "SOS",
  "DeterFreq": "Slow",
  "OnTime": "0.00:00",
  "PowerTime": "0.00:43",
  "Group": "",
  "Volts": "52.5",
  "LEDRefMV": "760.4",
  "LEDStrMV1": "926",
  "LEDStrMV2": "947",
  "LEDStrMV3": "953",
  "LEDStrMV4": "921",
  "LEDStrMV5": "480",
  "LEDStrMV6": "249",
  "LEDStrMV7": "107",
  "LEDStrMV8": "67"
}
```

3) Additional diagnostic information available via status interface (HTTP)

Advanced diagnostic information is now available via the status interface in the form of the following parameters:

- *volts (Input Voltage)*
- *ledrefmv (Ideal string voltage value)*
- *ledstrmv (Individual string voltage – User can select individual strings or all strings)*

Example :

HTTP command sent :

<http://admin:pass1@192.168.1.94/status.cgi?Parameter=volts>

Data Returned :

```
{
  "Status": "OK",
  "Volts": "52.7"
}
```

Consult the HTTP API documentation for a detailed description of the use of these new parameters or install the HTTP Command Creator and select the Status tab.

802.3 bt PoE Standard Compliance

With this feature the Vario2 IPPOE products are now compliant to the 803.2 bt PoE standard.

This change only affects 8 size (24 LED) products.

These products now have upgraded LED PCBA hardware that allows the products to be powered by 802.3 bt compliant PoE PSE (injectors / switches) as well as the existing PoE PSE that could power the products.

The new 8 size LED PCBAs have a new 3 way selector switch that allows you to change the PoE detection resistance and the PD class of the illuminator for different injector type compatibility :

Position 1 (L/H side) 802.3 bt (PD=Class 6 and PoE Signature resistance 24.9KOhms)

Position 2 (Centre) PD=class 4 and PoE Signature resistance 24.9KOhms

Position 3 (R/H side) PD=class 4 and PoE Signature resistance 12.5KOhms

Previously it was a 2 way switch with just the PD Class 4 24.9KOhm or Class 4 12.5KOhms PoE Signature resistance set.

The default position will be position 1 (L/H side) 802.3 bt (PD=Class 6 and PoE Signature resistance 24.9KOhms)

The majority of injectors (802.3 bt and non 802.3 bt) that can be used for the 8 size product will work with the switch in the default position.

The Diagnostics web page shows a warning message if you power a new 8 size unit with an injector that is not fully 802.3 bt compliant :

Diagnostics

Non bt PoE injector detected. Please ensure you have a sufficiently powered injector to power this unit.

This page presents basic diagnostic information for the lamp.

To see the latest diagnostic information this page must be refreshed.

Note : There is also a field on the Advanced Diagnostics page "PoE Value" that returns a different value if you are using an 8 size product depending on whether you are using 802.3 bt injector or not.

Additional Hard Reset

The Hard Reset function has been changed from a single stage to a double stage

1st Stage :

Hard Reset (For customer)

- No change to previous Hard Reset apart from Black Box Information will remain

2nd Stage :

Full Hard Reset (For Raytec/Optex only)

- The Hard Reset procedure that is detailed to the customer in the User Manual involves depressing the Hard Reset button whilst power cycling and waiting for the illuminator to flash.
- For the full Hard Reset if you continue to keep the Hard Reset button depressed the illuminator will continue to flash for a further 15 seconds. At the end of this (when the flashing has stopped) a full Hard Reset has taken place.
- A full Hard Reset is the same as a Hard Reset apart from the Black Box information is also cleared back to factory default (no values)
- It is not intended to advise customers about the Full Hard Reset function. Black box info has been added so Raytec / Optex can get more information on an illuminator for advanced fault finding / if it has been returned.

Possible False LED Fault Indication If Downloading New Firmware onto some older products

(Firmware Upgrade to cater for possible User experience – Not an additional feature)

Firmware coding for possible user scenario when Downloading new 2.5 level firmware onto much older hardware models of VAR2-IPPOE-i6-1 and VAR2-IPPOE-i8-1 (Previous older hardware of existing Vario2 IPPOE (before Vario2 IPPOE2.5))

When using the new firmware on older versions of VAR2-IPPOE-i6-1 and VAR2-IPPOE-i8-1 as described above, false LED Fault indication may occur. Affects only older versions of VAR2-IPPOE-i6-1 and VAR2-IPPOE-i8-1.

If this occurs the new firmware allows the user to change the code parameters that measure the LED fault information on these variants by enabling a tick box on the Advanced Settings Page such that only genuine LED faults cause the LED fault signal to trigger.

If the system indicates an LED fault the following warning will appear on the Diagnostics page

If you have loaded this firmware onto an older lamp and you are seeing invalid LED faults, change the LED String Adjust setting on the Advanced Settings Page.

(Full details for the user are in the Instruction Guide)

