LINGENFELTER
PERFORMANCE ENGINEERING

Lingenfelter EFILive AutoCal
Instructions

PN: EFIAUTOCAL

Revision - 1.2

Parts List

#	Description	Part number
1	EFILive AutoCAL	
1	DLC (OBD II) to RJ45 cable	
1	USB cable, type A male to type B male	

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Reading The Vehicle Calibration File(s)

3. Put the vehicle in accessory mode (ignition ON/engine OFF). On most vehicles this is the key position just before the vehicle starts. On the C6 Corvette push down on the BOTTOM side of the start button and hold it in for 5 seconds. On the 2009-2014 CTS-V, turn the switch half way.

4. Turn off all unnecessary electrical loads including: headlights, air conditioning, fans, radio.

   To turn off automatic headlights on most GM vehicles, momentarily twist or turn the headlight setting stalk or dial away from the AUTO indicator towards the OFF symbol:

5. Connect the RJ45 end of the OBD II cable to the AutoCAL handheld device.

6. Locate the diagnostic link connector (DLC) in the vehicle. It is usually in the driver footwell.

   If applicable, remove the "Do Not Calibrate" cover from Diagnostic Link Connector (DLC) port.

7. With the ignition on (key on) but the vehicle not running (engine off), plug the other end of the cable into the DLC port in the driver footwell (below the steering wheel).

8. The AutoCAL will power up at this point and will be at the "Display DTCs" screen.

9. Press the down arrow button until you reach the "Read" options. The Lingenfelter AutoCal has enough internal memory to store up to 5 different stock calibrations (depending on vehicle type, stored data logs, etc...), which are labeled "Read 1" through "Read 5" on the AutoCal. Press the NEXT button to scroll through the five different Read locations.

10. Select the first available "Read" location (i.e. select "Read 1" over "Read 2" if they are both empty) and press OK. The existing vehicle calibration will now be saved into the AutoCal. In some applications, it may be necessary to read out both the ECM (Engine Control Module) and TCM (Transmission Control Module). If you were not advised in advance of this, contact LPE or your LPE dealer for details. In general automatic vehicles will need the ECM & TCM read.

11. If you have been instructed to send these files to LPE, go to page 17 for instructions on how to copy the files off of the handheld device and send them to LPE.

12. If you now need to program the vehicle with files already installed in the LPE supplied AutoCAL, go to page 5.

Programming The Vehicle

1. If not already installed, connect the RJ45 end of the OBD II cable to the AutoCAL handheld device.

2. Locate the diagnostic link connector (DLC) in the vehicle. It is usually in the driver footwell.

   If applicable, remove the "Do Not Calibrate" cover from Diagnostic Link Connector (DLC) port.

3. With the ignition on (key on) but the vehicle not running (engine off), plug the other end of the cable into the DLC port in the driver footwell (below the steering wheel).

   NOTE: Make sure that other electrical devices on the vehicle that induce electrical load (such as air conditioning, fans, lights, etc...) are turned off.

4. The AutoCAL will power up at this point and will be at the "Display DTCs" screen.

5. **NOTE: In most applications you will perform a standard programming of the vehicle. This is considered a short flash and does not reprogram the Operating System (OS) of the module you are reprogramming. If LPE or your LPE dealer has instructed you to perform a FULL programming (aka "FULL Flash"), select "Full" instead of "PROG" in the next step.**

6. Press the down arrow (NEXT) button until you reach the "PROG" options. The Lingenfelter AutoCal has enough internal memory to store up to 5 different calibrations (depending on vehicle type, stored data logs, etc...) which are labeled "Prog 1" through "Prog 5" on the AutoCal. Press the NEXT button to scroll through the different Program locations until you reach the specified calibration file. Select the desired calibration to be uploaded to the vehicle and press OK.

7. The first time that you use the AutoCal to program a controller, the controller must be given a VIN license. If this is the first time that you are using the device to program the controller, you will be prompted to license the ECU by the message in the adjacent illustration. Press OK to license the ECU to the AutoCal.

8. The AutoCal will then prompt you to confirm that you want to license the ECU to the AutoCal. Press OK to confirm and the ECU will be licensed to the AutoCal.

9. The AutoCal will now display "Checking" and a completion percentage. The AutoCal will reach 100% in a few seconds.

10. The AutoCal will now erase the existing calibration from the ECM, as shown in the adjacent picture.

11. After the original calibration is erased from the ECM, the AutoCal will automatically begin to flash the new calibration to the vehicle. When the percentage reaches 100%, the new calibration has been flashed to the vehicle, which will take roughly 20-30 seconds to perform when performing just a "Program" calibration (short flash). A FULL program will take from 4 to 8 minutes depending on the vehicle.

12. When the screen on the AutoCal says "Ignition Off NOW!", turn the ignition to the off position and press OK.

On the C6 Corvette, to turn off Accessory mode you tap the bottom half of the ignition button.

13. A 15 second countdown will commence at this time. When the countdown ends, the programming of the ECM is complete.

14. **NOTE: In some applications, it may be necessary to program both the ECM (Engine Control Module) and TCM (Transmission Control Module). If so, repeat the previous process for the TCM.**

15. Unless indicated otherwise by LPE, the vehicle can be driven.

   If your vehicle is equipped with the DLC port cover, be sure to re-install it on the DLC port so that it does not interfere with driving the vehicle.

Data Logging The Vehicle

1. If not already installed, connect the RJ45 end of the OBD II cable to the AutoCAL handheld device.

2. Locate the diagnostic link connector (DLC) in the vehicle. It is usually in the driver footwell.

   If applicable, remove the "Do Not Calibrate" cover from Diagnostic Link Connector (DLC) port.

3. With the ignition on (key on), plug the other end of the cable into the DLC port in the driver footwell (below the steering wheel).

   The engine can be running or off.

4. The AutoCAL will power up at this point.

5. First screen will say "Display DTCs." This is used to display diagnostic test codes.

   This is used to view diagnostic test codes (DTC) stored in the vehicle.

6. Use the right down arrow (NEXT) button to go to the next menu option: Clear DTCs

   This is used to clear any stored diagnostic test codes. Only clear codes after documenting what the stored codes are.

7. Right arrow (NEXT) again to get to: Select PIDs.

   This menu option is used to select what list of variables you will view or record.

   Press the middle button (OK) to choose this function.

8. You can now use the up and down arrows to select what group of variables you want to data log. The first set of variables is usually pre-set by LPE to be the group of variables that you want to data log. In some cases the AutoCAL may be programmed with more than one group of variables in order to be able to look at different data on the same or different vehicles. If multiple data lists are present and you are not sure which one to select, contact LPE or your LPE dealer.

9. In this example the first set of PIDs on the AutoCAL device is named: E38-T43

With the desired PID list visible on the screen, press OK.
Screen will then display "PLEASE WAIT…."

10. And it will then go to the "RECORD DATA" screen

Press OK to begin recording data

Screen will then display:
"CREATING LOG FILE"
"STARTING SCANNER"

11. And it will then show:
TIME 00:00:00 with the digits incrementing up indicating the length of the logged data file.

The data can be viewed while the data logging is taking place by using the down arrow to scroll between variables.

12. When you are done data logging (you have recorded the desired events), use the left up arrow button (PREV) until you get to the <EXIT screen. Then press the center "OK button.

13. The screen will then display "SAVING E38_0003" (or some other similar incremented file name depending on the type of module being logged).

    Screen will then display "SAVED AS E38_0003"

14. The device will then go back to the "RECORD DATA" screen.

15. If you want to record another data log, you can create another recording at this time.

16. To disconnect the device just unplug it from the DLC under the dash.

    NOTE: DO NOT disconnect the device while you are recording data or programming a vehicle.

Downloading & Installing The EFILive Software

1. In order to connect the AutoCAL to a PC you will need to install the EFILive V8 software. This is only needed if you to read calibrations or data logs from the AutoCAL or save new calibration files to the AutoCAL.
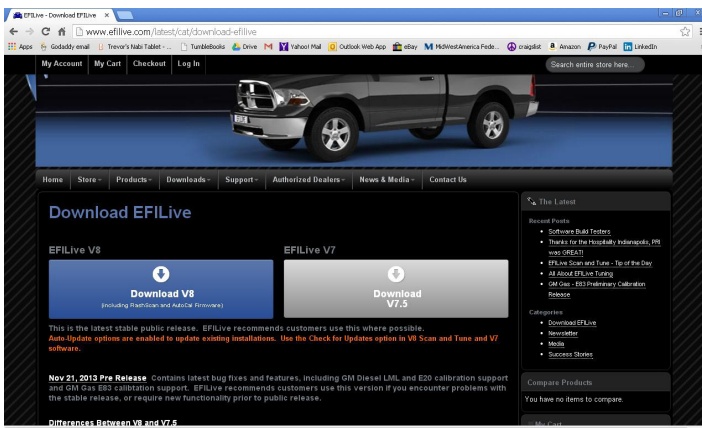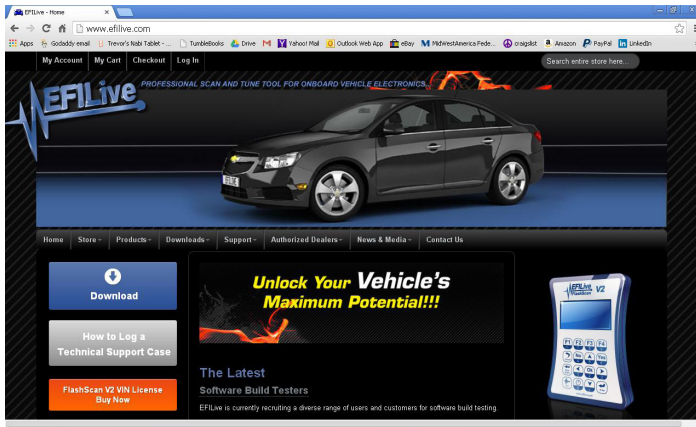

2. Go to the EFILive web site at:

   www.efilive.com

   Go to the Downloads section of the web site. You can do this from the blue Download link button on the left side of the screen or from the Downloads pull-down menu in the middle of the screen (and then selecting "Download EFILive").

3. Once you are at the Download EFILive page, click on the Download V8 button. Be sure to keep track of where on your PC the installation file has been saved.

   You do not need to download or install the V7.5 software.

4. Once the installation file has been downloaded, double click on the executable file to run the installation software. You may need to have administrative privileges on your PC to do this.

Copying Logged Data From The AutoCAL to a PC

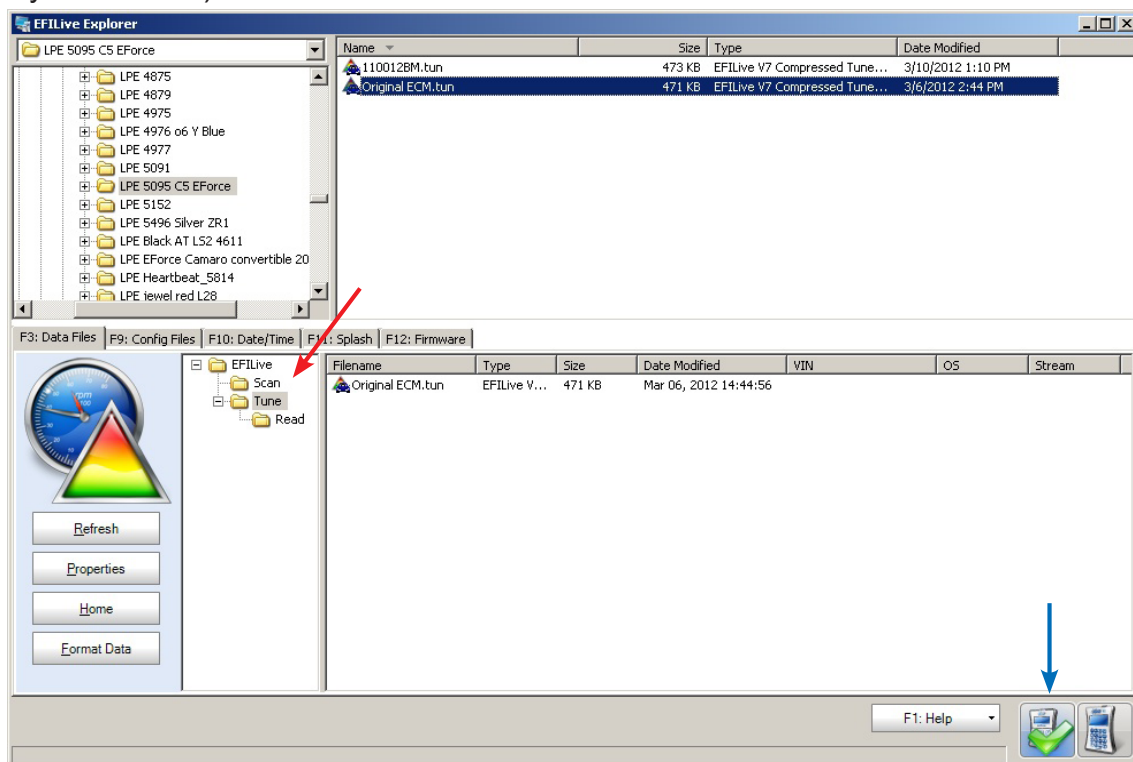1. Connect the AutoCal to the computer via the supplied USB cable.

    If this is the first time you plug the device into the computer, your PC may have to search for drivers and inform you that the software for the hardware has been installed.
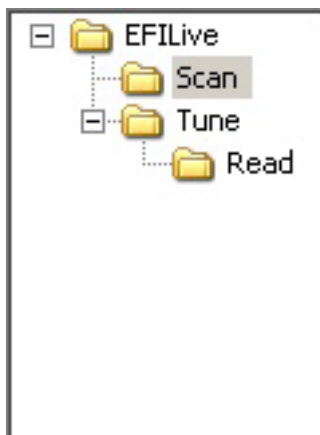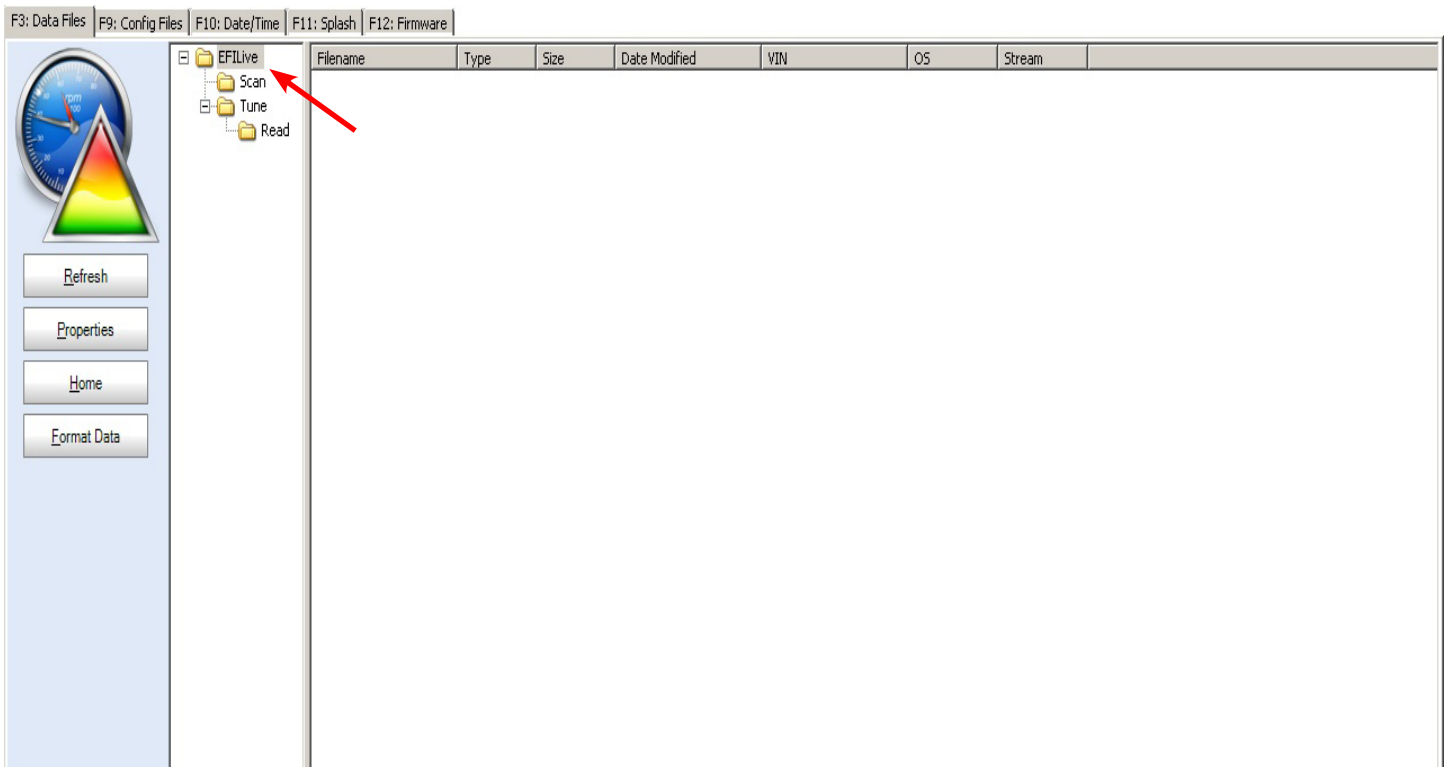
2. Double-click on the EFI Explorer desktop icon or go to the Start Menu program group for EFILive to open the *EFILive Explorer* computer program on your PC.
    NOTE: You must have *EFILive v8* installed to use the *EFILive Explorer* program. See the "Downloading & Installing The EFILive Software" section in these instructions for information on this process. Make sure you have the latest version of the software installed.

3. The illustration below is the EFILive Explorer user interface. When an EFILive AutoCal is connected to the PC, the AutoCal folder tree should be populated (shown by red arrow) and there should be a green check mark covering an AutoCal in the bottom right corner of the screen (shown by blue arrow).

4. The illustration below shows the lower half of the EFILive Explorer home screen. With the AutoCal already connected to the computer, the program will automatically open the contents of the EFILive AutoCal, as shown by the red arrow below.

5. Select the "Scan" folder in the folder tree shown in the last step. This is the default location on the AutoCal where vehicle data logs are saved.

6. The large data box should now show all of the data logs that are currently stored in your AutoCal's internal memory. Click on the desired data log and drag it to your desktop (or an appropriate file location). Make sure to remember where you saved the file. If you want to erase a data log, right-click on the data log and then left-click on "Delete".
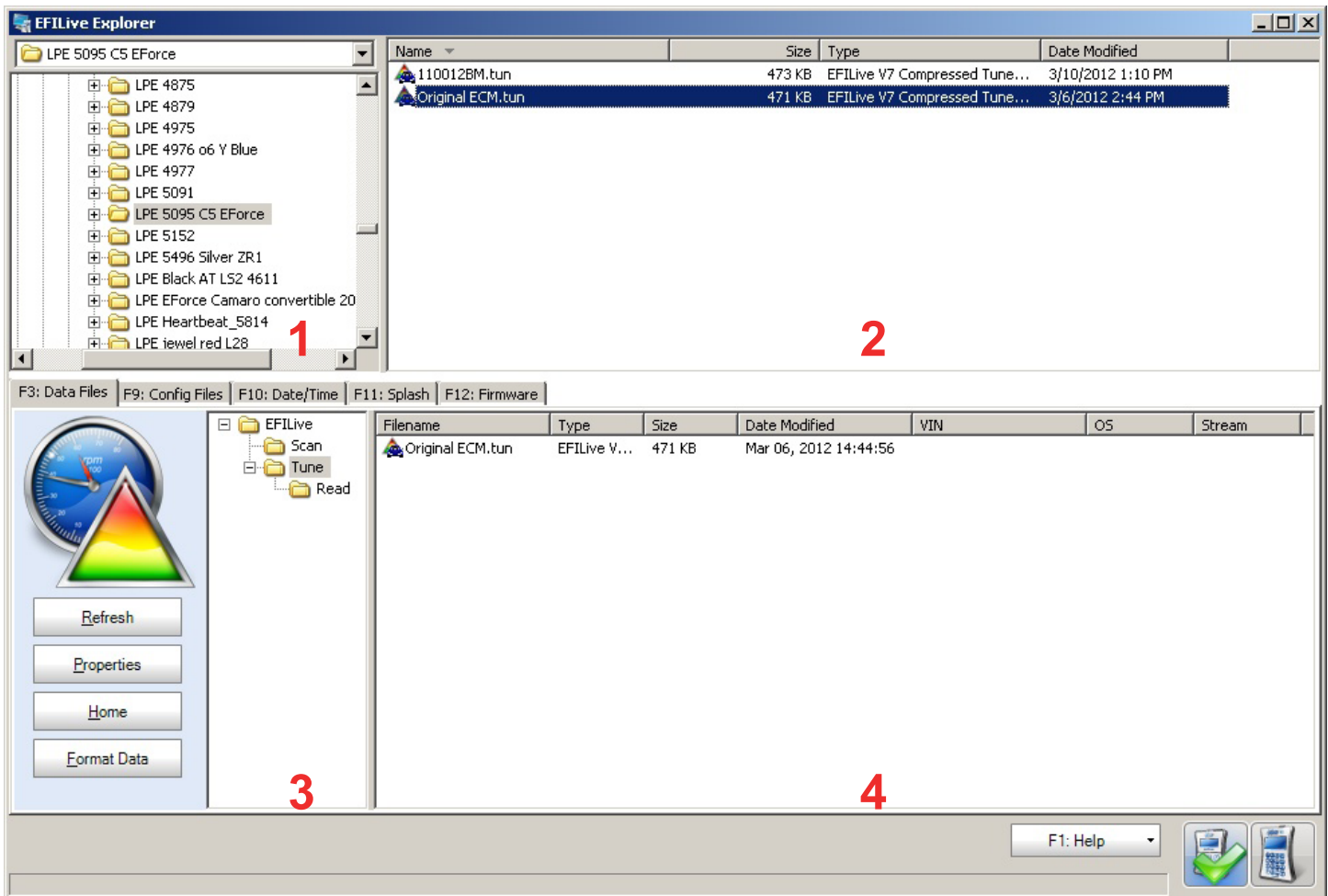

NOTE: Trying to drag the data log file directly from *EFILive Explorer* to your e-mail client will result in a faulty data log file that cannot be read by the EFILive software.

E38_0003.efi

7. Once the data log has been placed on the desktop (or other location), it can now be attached to your e-mail client and sent to LPE.

Installing & Removing Calibrations To & From The AutoCAL

1. The EFILive Explorer allows the user to manage the files stored in the internal memory of the AutoCal.
2. To install a tuned calibration from LPE via E-mail attachment, download the calibration and save it to a folder on your PC. Make sure to keep track of which folder you save the calibration in.
3. Inside the EFILive Explorer program, there will be four different panes. They are labeled in the image below. In pane #1, select the folder that you saved the calibration.
4. In pane #2, any available calibration files that were in the folder that you selected will be shown. In pane #3, select the "Tune" folder. Single click on the desired calibration file(s) from pane #2 and drag them down to pane #4. Now if you open the "Tune" folder again, the calibration file(s) should now appear in pane #4.

5. If you want to copy a calibration file from the AutoCal device to your PC, right-click the calibration file and select "Copy" to copy the file to a different location on the computer
6. If you want to delete a calibration file from the AutoCAL device right-click on the file in the "Tune" folder and select "delete".
7. Once you are done copying and/or deleting files from the AutoCAL you can unplug the device from the USB port of the PC.

NOTE: If you get an error while attempting to add a file to the AutoCal, too many files (calibrations and/or data logs) are currently saved on the AutoCal, so you will need to remove files before adding the calibration to the AutoCal.

Error Codes

A full list of EFILive error codes are available in a PDF document that is installed on your PC as a part of the EFILive version 8 software package. If an error code occurs while using the AutoCAL, refer to the PDF "EFILive Error Codes" for a description of the problem and possible solutions. After downloading EFILive version 8, this PDF document can be found here:

For Windows XP:

Start > All Programs > EFILive > V8 > Documents > EFILive Error Codes

For Windows Vista / 7:

Start > Programs > EFILive > V8 > Documents > EFILive Error Codes

For additional product installation information and technical support, contact LPE or your LPE products distributor. You can also find technical support and usage discussions regarding this product and many other LPE products in our Internet forums:

http://www.lingenfelter.com/LPEforumfiles

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