











FinishLynx Gold System

Verify that your FinishLynx Gold System contains the components pictured here. If not, or if you need help, call: 1-800-989-LYNX.

Item	Description	Part Number
	Carrying case	1A207
	EtherLynx 2000 high sensitivity camera embedded with color option	5L200 with 5LCO
Not pictured	Timer enable option embedded in camera	5LTE
Not pictured	Color C-mount adapter included on camera	MM-C
	Remote control lens	C1275M
	Remote positioner	2L102
	Geared head	BG3275
	Super head clamp	BG2909
	Camera tripod	BG2036
	RadioLynx™ wireless start system	3L900 and 3L300R
	Normally closed start sensor with light	3L400

Item	Description	Part Number
	500 ft. start sensor cable	3A100
	Connection box	C-Box
	Connection box cable	451
	2 x 25 ft. Ethernet cables	C10BT
	Laminator kit and instructions with 50 foam packs	Laminator
	Capture button	1A205
	Button splitter	B-SPL
	Power cord	452
	Lynx Resource CD, containing FinishLynx® 32 and LynxPad™ software and licenses as well as instructional videos; FinishLynx 32 Operator's Manual	5LSW and 9LSW01
	MicroTab scoreboard, carrying case and charger	MG-TAB9

Items not included

- Computer (laptop recommended) running Microsoft Windows. Your computer needs: two available serial ports (a 9-pin connection found on the back), one available Ethernet port, and a CD drive.
- Flathead screwdriver.
- Step ladder and table.
- Plumb bob and string. The plumb bob is available at your local hardware store, and you can use virtually any type of string or twine, as long as it is at least the width of your track.
- Printer (optional).

Introduction

In this quick start guide, you will learn how to set up and configure the FinishLynx network, set up the EtherLynx 2000 camera and align it with the finish line using the remote positioner and remote lens, capture, evaluate, and print a FinishLynx image and results, configure FinishLynx to work with the scoreboard, and import a start list created in LynxPad.

For more detailed or advanced instructions, including how to use the ACM Plug-in, consult the *FinishLynx 32 Operator's Manual* or the FinishLynx online help by clicking **Help** | **Contents** from the Menu bar.

Step 1: Go to the track!

Bring your FinishLynx Gold System and an assistant to your school track. Make sure there is **power** near the finish line, and at least three power outlets.

Set up a table near the finish line, on the infield if a power source is available. The finish line should have black lane marker boxes painted where it crosses each lane line. If not, we suggest you put black tape over the finish line to designate lane lines. This will help you align the camera and get a clearer FinishLynx image.

Step 2: Install the software

A. FinishLynx

1. Insert the Lynx Resource CD into your computer's CD drive.
2. Follow the instructions on your screen to install FinishLynx, the ACM Plug-in, and the SW Plug-in. When prompted, enter the serial numbers found on the back of your Lynx Resource CD jewel case.

3. Start FinishLynx by clicking the Microsoft Windows **Start** button and selecting **All Programs | FinishLynx**.
4. Verify that you have correctly installed the ACM and SW Plug-in by clicking **Help** from the Menu bar and selecting **About....** When the **About FinishLynx** dialog appears, the ACM and SW Plug-ins are listed with the serial numbers you entered during installation.

B. LynxPad

1. Insert the Lynx Resource CD into your computer's CD drive.
2. Follow the instructions on your screen to install LynxPad. When prompted, enter the serial number found on the back of your Lynx Resource CD jewel case.

Step 3: Evaluate a sample image

1. Start FinishLynx.
2. Click **File** from the Menu bar and select **Open....**
3. Double-click **Sprint.evn**. The sample FinishLynx image appears on your screen.
Note: This sample is a two-camera image. Your FinishLynx Gold System uses a single camera and produces single-camera images.
4. Click the mouse once on the torso of a competitor on the left side of the screen. A red hairline appears.
5. If necessary, click and hold the red crosshair in the middle of the hairline and drag it up or down until the correct lane number for that competitor is highlighted in red on the left side of your screen.
6. Press the **Enter** key on your computer. The finisher's time appears in the start list above the image.
7. Repeat these steps for all of the competitors on the screen. You have just successfully evaluated a race in FinishLynx.
8. Click **File | Close window**. If you want to reuse the image later for practice evaluation, click **No** when asked to save your changes. Close FinishLynx.

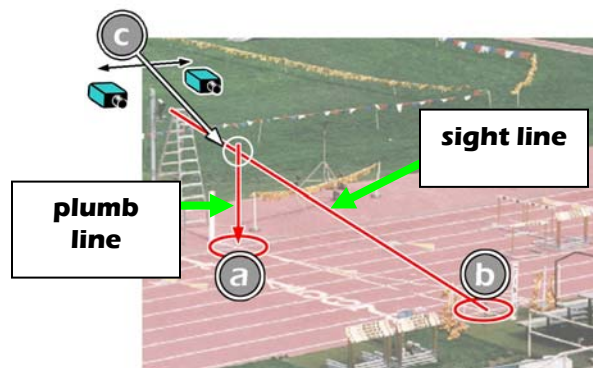
Step 4: Configure the network

1. Click the Microsoft Windows **Start** button and select **Control Panel**, or click **Start | Settings | Control Panel**.
2. Double-click **Network Connections**.
3. Right-click the **Local Area Connection** associated with the network interface card (NIC) in use and select **Properties**. The **Local Area Connection Properties** dialog appears.
4. Make sure you see a line that reads, **Internet Protocol (TCP/IP)**. You may have to scroll down to see it. *If you do not see this line:*
 - a. Click **Install** and select **Protocol**.
 - b. Click **Add....**
 - c. Click to select the **Microsoft TCP/IP** option and then click **OK**.
5. Check the box next to **Internet Protocol (TCP/IP)**.
6. Click to select **Internet Protocol (TCP/IP)** and then click **Properties**. The **Internet Protocol (TCP/IP) Properties** dialog appears.

7. Click the **Use the following IP Address:** button and then type the following numbers:
 - IP address: **192.168.0.5**
 - Subnet mask: **255.255.255.0**. Click **Ok** and then click **Ok** again.
8. If you are running Microsoft Windows XP, follow these steps to disable the firewall. Otherwise, skip to step 9.
 - a. Right-click **My Network Places** on your computer's desktop and select **Properties**. The **Network Connections** screen appears.
 - b. Right-click the **Local Area Connection** associated with your NIC, and select **Properties**. The **Local Area Connection** dialog appears.
 - c. Click the **Advanced** tab.
 - d. Make sure the box under **Internet Connection Firewall** is *unchecked*.
 - e. Click **Ok** and then exit the **Network Connections** screen.
9. Restart your computer.

Step 5: Set up the camera and tripod

1. Open the legs of the tripod in line with the finish line, preferably on the infield and approximately 10 feet back.
2. Extend the legs of the tripod so they are approximately 10 feet high.
3. On the near side of the finish line, hold the plumb bob so that it is suspended directly above the middle of the finish line. This is the **plumb line**, shown as **a** in the image below.
4. Tie string to the screw on the top of the tripod head. Have your assistant take the other end of the string to the far side of the finish line and hold the string taut. This is the **sight line**, shown as **b** in the image below.
5. Move the tripod to the left or right until the plumb line and sight line touch at position **c** in the image below. The tripod is now in the plane of the finish line.



Step 6: Attach the camera to the tripod

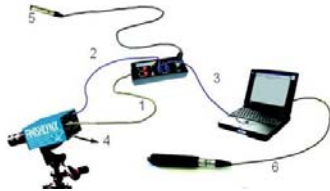
1. Secure the remote positioner to the camera bottom by turning the black handled thumbscrew. Make sure the FinishLynx label faces in the same direction as the camera lens.
2. Connect the cable that comes with the remote positioner to the port on the positioner and the port on the back of the camera labeled **Remote**.

3. Connect the cable on the remote lens to the remaining serial port on the remote positioner.
4. Secure the geared head to the top of the tripod.
5. Note how the mounting plate is attached to the top of the geared head. Then, pull back on the lever at the top of the geared head to release the mounting plate.
6. Tighten the mounting plate to the bottom of the remote positioner by turning the screw with a flathead screwdriver.
7. Attach the camera with the remote positioner and mounting plate to the tripod by clicking the mounting plate into place on the geared head.
8. With the camera lens lined up with and facing the finish line, make minor adjustments to the tripod legs so both bubbles on the tripod are centered.
9. When you are finished, your camera assembly should resemble the picture below.



10. Turn the black knob on the geared head that controls the **tilt** of the camera so that it is at about a 45 degree angle to the ground.










Step 7: Connect the cables

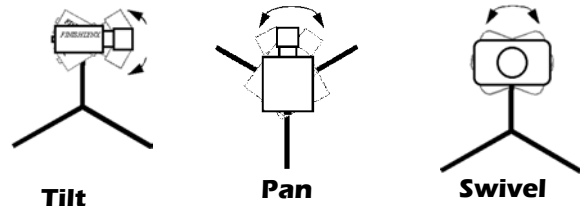




1. Connect the female end of connection box cable to the port on the back of the camera labeled **Connection Box** and the male end to the left side of the connection box.
2. Connect one of the Ethernet cables to the back of the camera labeled **10 Base T** and to one of the connection box ports labeled **Ethernet**. Set the "Hub" switch on the connection box to "No."
3. Connect the other Ethernet cable to the network connection on your computer and the other end to the remaining **Ethernet** port on the connection box.
4. Connect the black power cord to the back of your camera and plug the other end into the power source.
5. Connect the male end of the start sensor cable to the connection box where it says **Start**. Attach the start sensor to the other end of the cable and keep the start sensor close by.
6. Connect the button splitter to the 9-pin serial port on the back of your computer.
7. Connect the capture button cable to one of the 9-pin serial ports on the button splitter.
8. Connect the scoreboard serial cable to the other 9-pin serial port on the button splitter.

9. Turn on the camera by switching the black power button on the back.




Step 8: Align the camera

1. Start FinishLynx. Wait while the green status bar in the lower right corner of the screen completes its cycle.
2. Click , the red camera alignment icon in the top left hand corner of the FinishLynx **Hardware Control** screen. The icon turns green, and image appears on the computer monitor. Because you are only taking a picture of the finish line, the picture on your computer screen does not resemble anything recognizable. In the next steps, your goal is to obtain an image with a white background (the color of the finish line) and black lane lines.
3. Click . The **Camera Settings** dialog appears.
4. Click the **Parameters** tab.
5. In the **Gain Method:** line, click **Manual** and type **30** in the **Gain** field, and then click **Ok**.
6. On the keypad on the right of the FinishLynx screen, click  and hold until the iris of the remote lens is open all of the way.
7. Focus the camera by looking at a point approximately 1/3 of the way up the finish line (lane 3 if you are on the infield) and clicking and holding the  and  buttons on the keypad on the right of the FinishLynx screen until the image becomes crisp.
8. If your picture looks washed out by too much light, click  and hold  to let less light in.
9. Click  to center the camera automatically using the remote positioner.
10. Click  to automatically align the camera on the finish line. The camera pans and swivels automatically.
11. Have your assistant run through the finish line and watch where he/she appears on the computer monitor. The goal is for the runner's torso to be fully visible in both the inside and outside lanes. Now, have your assistant run through the inner-most and outer-most lanes. Adjust the **tilt** of the camera until he/she is clearly visible on both ends of the finish line.



12. After the image on the computer shows a white background and black lane lines and your assistant appears in the inner and outer-most lanes, adjust the camera lens focus again by clicking  and  until all lanes appear crisp and in focus.

Step 9: Adjust FinishLynx camera settings

1. Click  | **Parameters** | **AGC**.
2. Click **Rate** and type a value in the field between **600-800** for sprints (400m and under) or type **500** for distance events. Change this value when moving between sprints and distance races, or else the competitors in your FinishLynx image appear distorted.
Note: Image distortion does not affect timing accuracy.
3. Click **Ok**.
4. Open a new event in FinishLynx by clicking  in the top left corner of the screen.
5. Capture a small amount of image containing a white object, such as a person wearing a white t-shirt.
6. Right-click and draw a box around a small amount of the white image. You may need to zoom in to the image to do this.
7. Click **Image** from the Menu bar and select **Set white balance**.
8. Reset the Gain value by clicking . The **Camera Settings** dialog appears.
9. Click the **Parameters** tab.
10. In the **Gain Method:** line, click **Manual** and type **30** in the **Gain** field, and then click **Ok**.


Step 10: Create a competition directory for FinishLynx and LynxPad to share

1. Right-click on your computer desktop and select **New** | **Folder**. When the **New Folder** appears, change the name to **Practice competition**.
2. In FinishLynx, click **File** | **Options...** Click the **Browse** button on the **Event Directory:** and navigate to the **Practice competition** directory you just created. Then, click **Ok**.
3. Still in FinishLynx, click **File** | **Options...** and click the **Database** tab. Click the **Browse...** button next to the **Output Directory:** and navigate to the **Practice competition** directory. Then, click **Ok**.
4. Now, start LynxPad by clicking the Windows **Start** button and then **All Programs** | **LynxPad**.
5. Click **File** | **Options...** and **uncheck** the **Load Existing Results on Program Start** box. Then, click **Ok**.
6. Open the sample competition by clicking **File** | **Open**. Navigate to **C:\LynxPadData\Sample** and then double-click the **lynx.cmp** file. A practice competition opens on the screen.
7. Still in LynxPad, click **File** | **Options...** Click the **Browse** button next to the **Directory:** text field. Navigate to the **Practice competition** file you created earlier. Select it and click **Ok**. Click **Apply** and then click **Ok** again.
8. Still in LynxPad, click **File** | **Save as...** and navigate to the **Practice competition** folder. Then, click **Ok**. Now, FinishLynx can get start lists created in LynxPad, and LynxPad can import results generated by FinishLynx.

Step 11: Configure the scoreboard settings

1. In FinishLynx, click **Scoreboard** from the Menu bar and select **Options...**
2. Click the **New** button to activate the scoreboard.
3. From the **Script:** drop-down list, click to select **microtab16-9.lss**. Then, click **Ok**.

Step 12: Use FinishLynx with data from LynxPad

1. In FinishLynx, click  to load the schedule of events from LynxPad. The **Goto Event** dialog appears.
2. Click the **Load Schedule** button once. Click the drop-down list under the **Load Schedule** button. A list of events appears. Click to select the **"110 Meter Hurdles Men (9, 3, 1)"** event in the list, and then click **Ok**. The first heat of the third round of the men's 110m hurdles opens on the FinishLynx screen.
3. Clap your hands together sharply over the start sensor. This simulates the firing of the starting gun and starts the yellow FinishLynx timer.



4. Have your assistant run through the finish line while you press down and hold the red capture button to capture the image. Release the button as soon as he/she has run completely through the finish line.
5. Practice evaluating the image by following the same steps you followed earlier in **Step 3** (see *Side 2*).
6. Click **File** | **Save** to save the race to the **Practice competition** directory.
7. Crop space between competitors in your FinishLynx image by right-clicking and drawing a box around the unwanted space. Release the mouse button and select **Crop** from the dialog that appears.
8. (Optional) Print the results and a portion of the FinishLynx image by right-clicking on the image and drawing a box around the portion you want to appear in your printout; for example, the first place finisher or a close finish between two competitors. Click **Ok** and then select the printer from the **Print** dialog to send the image with results to the printer.
9. Click **File** | **Close window** and then click **Yes** to save changes you made to the FinishLynx image when you cropped it.
10. In LynxPad, click to highlight **Men 110 Meter Hurdles** in the **Events** window. The start list appears in the **Heats** window.
11. Still in LynxPad, click **Competition** | **Refresh All Results**. The results from the race you just evaluated appear in LynxPad.

This completes the *FinishLynx Gold System Quick Start Guide*. Next: follow the instructions that came with the RadioLynx wireless start system and the instructions found in your laminator kit to print FinishLynx images on the included foam core boards.