

## **Operation & Safety Manual**

Version 1 – 2025/11/13

### **DriveWise**

Strike League



Vision Statement: "To simplify swing improvement for golfers of all levels."

Contents

Introduction .....2

Graphical Abstract .....3

Safety Instructions .....3

Product Overview .....5

    Key Features .....5

    System Components .....5

    Device and App Integration .....5

    Diagram .....6

    LED Statuses .....7

Operating Instructions .....7

Maintenance and Troubleshooting ..... 10

    Maintenance ..... 10

    Troubleshooting ..... 10

Technical Specifications ..... 11

Warranty Information ..... 12

Contact Information ..... 12

Introduction

This operational manual describes the DriveWise portable golf launch monitor system, engineered to provide accessible swing feedback for novice golfers seeking reliable training tools. The device can measure essential swing parameters—including face angle, swing path, side angle, and attack angle—using high-precision embedded sensors. After initiating measurement via the companion mobile app, the system automatically detects each swing and translates the collected data into actionable feedback designed to support user improvement.

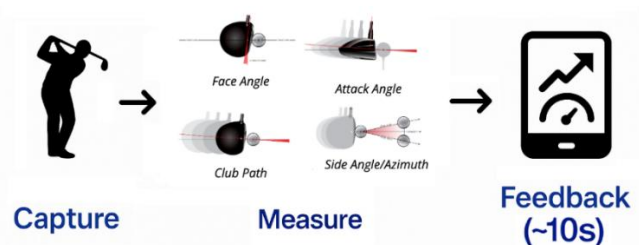
Engineered for portability and resilience, the launch monitor features a lightweight enclosure that protects internal electronics and withstands unexpected impacts. A built-in laser pointer assists users in correctly positioning the device before use, while LED indicators offer immediate visual cues about system status. The mobile app displays measured metrics, provides



targeted coaching feedback, identifies shot types (such as push, pull, or slice), and presents visualizations of swing details. For added convenience, the app includes a calibration feature that optimizes camera exposure settings according to ambient lighting, ensuring measurement accuracy in diverse environments.

This manual is structured to deliver clear, step-by-step instructions, address user safety, and facilitate troubleshooting. It is written to accommodate golfers and technical users alike, emphasizing clear language, consistent formatting, and organized presentation throughout.

### Graphical Abstract



### Safety Instructions

Read all safety instructions before operating the golf launch monitor. Failure to follow these guidelines may result in injury or damage to the equipment.

1. Laser Safety
  - a. Never look directly into the device's laser pointer or aim it at another person's eyes.
  - b. Avoid exposing children or untrained individuals to the laser.
  - c. Do not attempt to modify or replace the laser component.
  - d. If the laser malfunctions, discontinue use and contact technical support.
2. Physical Placement and Swing Safety
  - a. Position the launch monitor at least 100cm (1m) from the strike zone to prevent accidental contact with the club.
  - b. Ensure appropriate clearance behind and around the device.
  - c. Follow the included placement diagram for system setup; place the monitor directly in the ball flight path.
  - d. Do not place the device on unstable or uneven surfaces.
3. Ball Ricochet Hazards

- a. Incorrect setup may result in golf balls striking the device and bouncing back toward the user or bystander.
  - b. Keep all non-essential items, people, and pets outside the hitting area.
  - c. Inspect for damage if the unit is struck, and do not resume use until cleared.
- 4. Electrical and Environmental Safety
  - a. Only operate the launch monitor in dry environments; avoid wet grass or exposure to rain.
  - b. Do not use cleaning fluids, solvents, or immerse any part in water.
  - c. Do not operate with damaged cables or exposed wires.
- 5. Installation and Space Hazards
  - a. Always check the surrounding area for obstructions before swinging.
- 6. Impact and Vibration Warnings
  - a. Do not drop, strike, or subject the unit to excessive vibration or impact.
  - b. Only use the launch monitor in environments with adequate protective netting or barriers to contain errant shots.
- 7. Maintenance and Troubleshooting
  - a. Regularly inspect the device for physical damage, loose components, or tracking inaccuracies.
  - b. Do not attempt to disassemble, modify, or repair the unit; contact technical support for all servicing.
  - c. Power off and disconnect the device immediately if it emits smoke, abnormal odors, or unusual sounds.
- 8. Emergency Procedures
  - a. In case of injury or hazardous device failure, cease operation immediately and seek appropriate medical or technical assistance.
  - b. Report serious incidents to the manufacturer for further guidance.

**Note:** These precautions are intended to minimize risks to the user and to those around them, ensuring safe and proper operation of your golf launch monitor. For further information or support, consult the troubleshooting section or contact technical assistance as listed in this manual.



## Product Overview

The portable launch monitor described in this manual is an innovative training tool tailored for novice and intermediate golfers who want professional-quality swing feedback in a practice setting. The system is engineered for reliability, measurement accuracy, and an accessible user experience.

### Key Features

- **Comprehensive Swing Metrics:** The launch monitor measures face angle, swing path, side angle, and attack angle for every swing. Embedded sensors and high-speed data processing ensure precise, real-time feedback.
- **Actionable Mobile Feedback:** Feedback is delivered to a companion mobile app, which interprets swing data and presents it visually along with coaching advice and a graphical indicator of shot type (e.g., push, pull, slice).
- **Automated Swing Detection:** Once initiated from the app, swing detection is automatic for repeat practice without needing to manually reset between shots, supporting efficient training sessions.

### System Components

- **Rugged Enclosure:** All electronics are secured within a lightweight, impact-resistant housing designed to endure stray shots and regular transport.
- **Laser Alignment Aid:** An integrated laser pointer guides proper device placement for measurement and safe operation.
- **Status Indicators:** Built-in LEDs provide immediate feedback on system readiness, and error or warning states.
- **Embedded Processing Unit:** An embedded computing board captures sensor data, processes algorithms, and handles communication with the app.

### Device and App Integration

- **Wireless Connectivity:** The monitor pairs wirelessly with a dedicated mobile app, streamlining data transfer and device control.
- **User-Friendly Interface:** The app's interface is intuitive, displaying swing metrics, shot visualizations, summary statistics, and actionable next steps.
- **Calibration Controls:** Users can quickly calibrate system optics with a dedicated app button, ensuring measurement accuracy across varying lighting conditions.



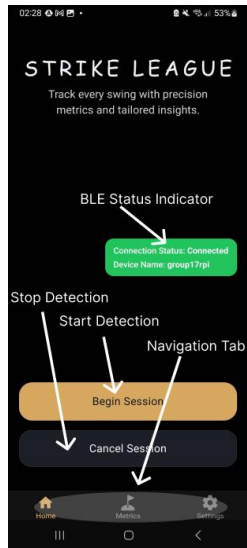
**Diagram**

For reference, see the labeled diagram that identifies the enclosure, laser unit, LED indicators, sensor, power button, and charging port locations.



*Fig. 1: Enclosure Diagram*

For reference, see the labeled diagram that identifies the application home page and its major components.

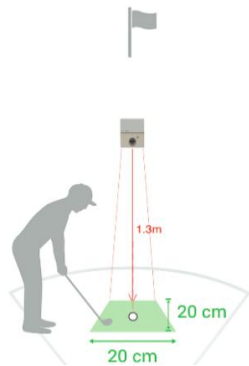


LED Statuses

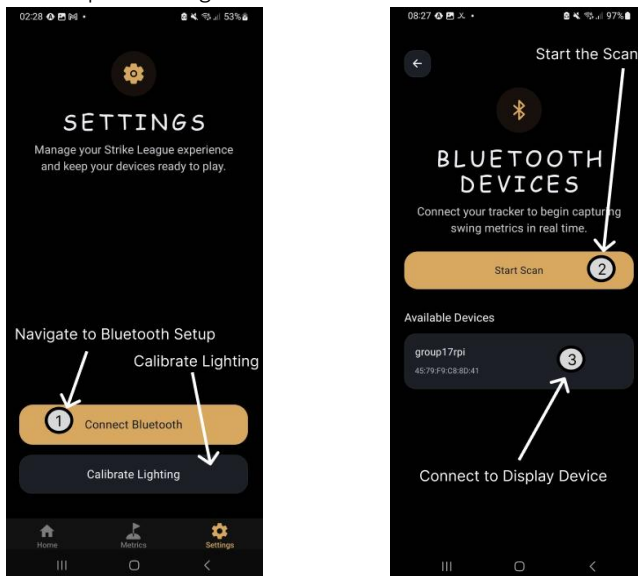
LED Activity	Status
Blue	The launch monitor is turned on.
Yellow	The launch monitor is in standby mode.
Green	The launch monitor is ready for a shot.
Red	The launch monitor is busy.

Operating Instructions

Follow these step-by-step instructions to set up and operate your DriveWise golf launch monitor for accurate swing measurements and swing feedback.



1. Powering On the Device
  - a. Press the power button on the back of the enclosure and observe the blue LED indicator for a confirmation signal that the monitor is on.
2. Device Setup and Placement
  - a. Place the launch monitor on a flat, stable surface directly in front of the golf ball, aligned with your intended shot direction.
  - b. Use the integrated laser pointer and alignment guide to ensure accurate placement.
3. Connecting to the Mobile App
  - a. Navigate to the 'Settings' tab in the mobile app.
  - b. Connect to Bluetooth from the mobile app, following the steps in the figure below.



- c. Successful connection will be confirmed by a notification on the app.
4. Calibration
  - a. Navigate to the 'Home' tab in the mobile app.
  - b. Press the calibration button on the app to automatically adjust camera exposure for current lighting conditions.
  - c. Wait for confirmation from the mobile app before proceeding.
5. Club Preparation





- a. Paste an included club sticker onto the face of the golf club as shown below:



6. Swing Detection and Measurement
  - a. After setup and calibration, press the “Begin Session” button in the app to initiate swing detection, and wait for the LED to turn yellow.
  - b. Once the LED turns yellow (standby), place the ball on the center of the laser point, and wait for the LED to turn green.
  - c. Once the LED turns green (ready), take your shot. The launch monitor will automatically record swing metrics: face angle, swing path, side angle, and attack angle.
  - d. Once the LED turns red (busy), wait for the LED to turn yellow and the metrics to be displayed in the app
7. Viewing Results
  - a. Immediately after the shot, review measured data on the app. Metrics will be displayed along with coaching feedback and an indicator of shot type (push, pull, slice, etc.).
8. Resetting for Additional Swings
  - a. The monitor is designed for repeated use; after each measurement, allow the LED to turn yellow before performing the next shot.
9. Powering Down
  - a. If the detection session is currently active (yellow, red, or green LED is on), press ‘cancel swing.’
  - b. Power off the device by pressing the power button.

**Note:** For best performance, consult the troubleshooting section if the device fails to detect swings, or if measurements appear inconsistent. Routine cleaning, safe storage, and periodic battery checks are advised to maintain accuracy and reliability. Ensure that your device is charged before using it for a training session.



## Maintenance and Troubleshooting

### Maintenance

Regular maintenance is essential for optimal performance and long device life. Follow these steps:

- Cleaning:
  - o Wipe the device exterior using a dry or slightly damp microfiber cloth.
  - o Avoid using solvents, chemical cleaners, or sharp objects, which can damage components or finishes.
  - o Never immerse any part of the launch monitor in water.
- Battery Care:
  - o Recharge the battery only with the included power adapter.
  - o If storing the device for extended periods, charge to at least 50% and store in a cool, dry place. Fully recharge before next use.
- Storage:
  - o Store in a dust-free, temperature-controlled environment when not in use.
  - o Avoid exposure to extreme heat, humidity, or freezing temperatures.
- Inspection:
  - o Regularly inspect for loose components, cracks, or damage to the sensors and enclosure.
  - o If struck by a ball or club, inspect the device before continued use.

### Troubleshooting

If you encounter problems with your launch monitor, use the steps below before contacting technical support:

- No Power/No LED Indicator:
  - o Confirm the device is charged.
  - o Try a different outlet or cable.
  - o If still unresponsive, contact support.
- App Connection Failure:
  - o Check Bluetooth or Wi-Fi status on the mobile device.
  - o Ensure the device is powered on.
  - o Restart both the launch monitor and the app.
- Inaccurate or No Swing Detection:



- Confirm device and ball placement according to the operating instructions.
- Check device alignment using the laser pointer.
- Ensure the device is on a level, stable surface and environmental lighting is appropriate.
- Ensure that club stickers are correctly applied.
- Erratic Data or Interference:
  - Move the monitor away from large metal objects, electronic devices, or sources of strong electromagnetic fields.
  - Verify there is no direct sunlight on optical components.
- Physical Damage/Error Indicators:
  - If any electronic device emits strange sounds or smoke, power off immediately and disconnect from power.
  - Inspect for damage and consult support before reuse.

Do not attempt to disassemble or repair the device yourself as this may compromise safety and void the warranty.

### Technical Specifications

Feature	Specification
Dimensions	28cm x 13cm x 6.5cm
Weight	1kg
Enclosure Material	Impact-resistant PETG filament, designed to withstand ball strikes
Power Supply	Rechargeable lithium-ion battery, 2-4 hour typical runtime
Charging Method	Specialized charging power supply included
Sensors	High-speed global shutter camera (IMX296)
Laser Pointer	Class 2 ( $\leq 1\text{mw}$ ) visible-light pointer for alignment
Wireless Connectivity	Bluetooth Low-Energy
Supported Devices	Android smartphones/tablets
Measurement Range	Face angle: $\pm 35^\circ$ ; swing/attack/side angle: $\pm 25^\circ$
Measurement Accuracy	All angles: $\pm 2^\circ$
Data Output	Metrics: face angle, swing path, side angle, attack angle
Display/Feedback	Real-time mobile app feedback (metrics, shot visualization)
Calibration	App-controlled camera exposure adjustment
Operating Temperature	Up to $45^\circ\text{C}$



Operating Humidity	10%-80% (non-condensing)
Safety Certifications	Laser safety: EN 60825-1
Warranty	1 year limited warranty

### Warranty Information

- This launch monitor is covered by a one-year limited warranty from the date of original purchase.
- The warranty covers defects in materials and workmanship during normal, non-commercial use according to instructions provided in this manual.
- If a defect is found, the manufacturer will, at its discretion, repair or replace the unit free of charge. Proof of purchase is required.
- The warranty does not cover damage caused by accident, misuse, unauthorized modifications or repairs, water exposure, or improper installation.
- Consumables (batteries, cables) and cosmetic damage are excluded unless caused by manufacturing defect.
- To request warranty service, contact technical support using the information in the manual. Return shipping costs may apply.
- This warranty is non-transferable and valid only for purchases from authorized vendors.

For complete terms, limitations, or to file a claim, refer to the manufacturer's support website or contact customer service.

### Contact Information

Company Name: Strike League

Email: [nka71@sfu.ca](mailto:nka71@sfu.ca)

Website: [strikeleague.ca](http://strikeleague.ca)

General Inquiries: Phone: 236-562-3771

Mailing Address: 8888 University Drive W, Burnaby, BC V5A 1S6, Canada

Feedback and Suggestions: We welcome user feedback to improve future products. Email: [nka71@sfu.ca](mailto:nka71@sfu.ca)

