# **PHYSICAL**

Weight Without Battery: 133g

With Battery: 160g

**Size (H×W×D)**  $39.0 \times 59.3 \times 69.8 \text{mm}$ 

Water Rating Waterproof to 33 ft (10m)

**Temperature Range** Operating: 0 to 40°C (32 to 104°F)

Cold Operation with Warmed Battery: -20 to 40°C (-4 to 104°F); Battery at 25°C (77°F)

Charging: 0 to 45°C (32 to 113°F) Storage: -40 to 85°C (-40 to 185°F)

**Battery** Replaceable, Rechargeable Lithium-Ion

1250mAH, 3.8V, 4.7Wh

Run Time:

Stitched 4K 30FPS – 1 hour 5 minutes Unstitched 5K 30FPS – 1 hour 5 minutes

Supported SD Cards Micro SD

Max Capacity: 128GB

FAT32 (≤ **32GB**), exFAT (≥ **32GB**)

Write Speed ≥15MB/s. UHS-I, Class U3 Or Higher Rating Required

Click Here For Recommended Card List

**Data Interface** Micro USB

USB 2.0

Video Output Port Equirectangular, Stitched Output Resolution up to 4K at 30FPS (3840 × 2160)

Status Display Sunlight-visible, transflective memory-in-pixel (MIP)

1.00" x 0.42" (25.3 x 10.7 mm)

**VIDEO** 

Lens Modes 360: Capture Stitched-In-Camera, Fully Spherical Videos In Equirectangular Format.

Front Only: Capture Videos in Traditional Fixed-Frame Format Using the Front Lens. Rear Only: Capture Videos in Traditional Fixed-Frame Format Using the Rear Lens.

RAW: Capture Unstitched, Fully Spherical Videos. Each Video produces 2 high-res files; 1 for each lens.

Video Modes 5.7K\*: 2880×2880 (2 files) / 30fps @ 120Mbps (60Mbps per file) : 360 Unstitched

5K: 2496×2496 (2 files) / 30fps @100Mbps (50Mbps per file) : 360 Unstitched

4K: 3840×2160 / 30fps @ 80Mbps : 360 Stitched

3.5K: 1760×1760 (2 files) / 60fps @ 100Mbps (50Mbps per file): 360 Unstitched

FHD: 1920×1080 / 120fps @ 50Mbps: Traditional 16:9 FHD: 1920×1080 / 60fps @ 40Mbps: Traditional 16:9

Timelapse Video: Available in 4K and 5K Resolutions. Interval 2/5/10/30/60s

\* Requires Mobile App to enable. Run Times May Be Reduced.

Stabilization Modes\* Stabilize: Smoothes out quick movements and vibrations and levels out the horizon

Lock: Stabilizes and counteracts the camera orientation in full 360, locking the stabilized orientation to a specified direction. Follow: Stabilizes and counteracts the camera orientation in full 360, the stabilized orientation follows the GPS trajectory.

\* Stabilization applied during playback and in videos produced using VIRB mobile app or VIRB Edit desktop software. Available only for videos stitched in camera.

Video Format .MP4 (AVC / H.264 Encoding)

Max Video Bitrate 120 Mbps

ISO Range 100 – 1600 (Automatic)

100 – 6400 (Manual)

Manual Settings\* Color Vivid or Flat

White Balance Auto or Manual
Sharpness Low/Medium/High
ISO Limit 400/800/1600/3200/6400

Exposure Bias ± 2.0 EV Range Exposure Lock Enable/Disable

Exposure Balance Balanced Exposure/Front Lens Bias/Rear Lens Bias/Independent

\*Requires Mobile App

### **PHOTO**

Lens Modes 360: Capture Stitched-In-Camera, Fully Spherical Photos In Equirectangular Format.

Front Only: Capture Photos in Traditional Fixed-Frame Format Using the Front Lens. Rear Only: Capture Photos in Traditional Fixed-Frame Format Using the Rear Lens.

RAW: Capture Unstitched, Fully Spherical Photos. Each Photo produces 2 high-res files; 1 for each lens.

Photo Resolution 15MP: 5640 × 2816 (Stitched 360)

2 × 9MP: 2 × 3008 × 3000 (Unstitched 360, 2 Files) 3MP: 1920 × 1440 (Traditional, Single Lens)

Photo Modes Single Shot Capture

Burst Shooting: 20 frames / sec

Auto Exposure Bracketing (AEB): 3 bracketed frames at ±1.0 EV Bias. Adjustable with App.

Time Lapse: Interval 2/5/10/30/60 s

Travelapse: Interval 0.01 miles and up. Requires Mobile App.

Photo Format .JPEG

ISO Range 100 – 800 (Automatic)

100 – 800 (Manual)

**Timer Delay** 2, 5, 10, 30 or 60 seconds. Only applies to first photo captured when set to Time Lapse.

Manual Settings\* Color Vivid or Flat

White Balance Auto or Manual
Sharpness Low/Medium/High
ISO Limit 100/200/400/800
Exposure Bias ± 2.0 EV Range

Exposure Balance Balanced Exposure/Front Lens Bias/Rear Lens Bias/Independent

\*Requires Mobile App

## **AUDIO**

Format 48 kHz Sampling, AAC Compression, 4-Channel Ambisonic

Spatial Output Planar, 4-Channel First-Order Ambisonic (ACN Ordering, SN3D Normalization)

Gain Control AGC (Automatic Gain Control)

Internal Microphones MEMS - Waterproof, Rugged, Exposed for sensitive audio capture

Wireless Microphone Bluetooth - Mono, upsampled to 48kHz

Mixed Output: Combined omnidirectional (mono) Bluetooth mic with ambisonic/environmental audio

# **OPTICS**

Sensor 1/2.3" Backside-Illuminated CMOS

Sensor Count: 2

Pixel Count: 12MP per Sensor

Pixel Size: 1.55 um

**Lens** 8-Elements, Replaceable Strengthened Glass Cover Lens

Lens Count: 2

FOV (Unstitched): 201.8° per Lens

FOV (Traditional 16:9): 141° Horizontal

Depth of Focus: 40cm to ∞ Effective Focal Length: 1.036mm 35mm Equivalent Focal Length: 6mm

Fixed Aperture: f/2.0

Electronic Shutter Speed 30 – 1/8000s

# SENSORS AND AUGMENTED REALITY (A/R)

On-Board Sensors GPS + GLONASS: 10 Hz location capture

Barometer: Elevation capture

Accelerometer: Force and Motion capture

Gyroscope: Rotation capture Compass: Bearing capture

A/R Data Overlay Settings

Vehicle Mode: Lock Overlays to the mounted subject, even when stabilization is enabled

Fine Adjustment Tools: Scale, Tilt, Rotate, Color

A/R Data (Camera Collected) Speed

Distance Altitude

Relative Elevation

G-Force

Jump Metrics: Hang Time, Jump Height, Jump Distance, Rotations in Air, Jump Count

Grade

Vertical Speed

Pace Pitch Roll Course Bearing

**GPS** Coordinates

Track Shape and Position

Lap Times (Automatic/CC, Manual) Lap Count (Automatic/CC, Manual)

Accessory: Pulse Heart Rate: Instantaneous, Average, Minimum, Maximum and Graphing

Compatible Products: vivosmart HR /

vivosmart HR+ vivoactive HR

fenix 5 fenix 3HR HRM-RUN HRM-TRI

Accessory: Running Metrics

Heart Rate: Instantaneous, Average, Minimum, Maximum and Graphing Vertical Oscillation: Instantaneous, Average, Minimum, Maximum and Graphing Ground Contact: Instantaneous, Average, Minimum, Maximum and Graphing Compatible Products:

HRM-RUN HRM-TRI

Accessory: Ambient Temp

Temperature: Instantaneous, Average, Minimum, Maximum and Graphing Compatible Products:

<u>tempe</u>

Accessory: Cycling Metrics

Power: Instantaneous, Average, Minimum, Maximum and Graphing Speed: Instantaneous, Average, Minimum, Maximum and Graphing Cadence: Instantaneous, Average, Minimum, Maximum and Graphing Compatible Products:

Vector

Bike Speed Sensor
Bike Cadence
Sensor

Accessory: Vehicle Metrics

Vehicle Speed Engine RPM Engine Load Engine Torque Engine Fuel Rate

Engine Coolant Temperature

Throttle Position

Intake Air Temperature Mass Air Flow Rate Compatible Products:

OBDLink LX

Other ELM-327 Compatible Sensors

Accessory: Flight Metrics

Position Altitude

Course Over Ground

Pitch

Roll

Lateral Acceleration
Normal Acceleration

Turn Rate

Compatible Products:

G3X Touch FlightStream 110/210

Accessory: Boating Metrics

Engine Data: Engine Speed, RPM

Wind Data: Apparent Wind Angle, Apparent Wind Speed, True Wind Angle, True Wind Speed

Water Data: Water Depth, Water Temperature, Speed Through Water

Compatible Products:

GPSMAP 74XX / 76XX GPSMAP 84XX / 86XX

Engine Data: Requires NMEA 2000 accessory

Wind Data: Wind Sensors
Water Data: Transducer

## **WIRELESS**

**Wi-Fi** 802.11 b/g/n

Mobile App Connection Local Area Network Conection

**NFC** Passive

Location: Top, Center of Camera, Under the Display

ANT+ Garmin Remote and Sensor Connectivity

VIRB Remote
Fenix 5 Series
Fenix 3 Series
vivoactive HR / HR+

Compatible Remotes:

vivosmart Forerunner 935

Edge

**Bluetooth** Bluetooth 4.0

Sensor Connectivity

Wireless Headset Microphone Connection

Recommended Headsets:

Jabra Extreme 2 BlueAnt Q3

BlueParrott B250-XT Plantronics M55

**Voice Control** OK Garmin Activation Phrase

Start Recording Begin recording video in the currently selected mode

Stop Recording Stop recording video

Take a Picture Capture a photo or set of photos in the currently selected mode

Remember That Tag the video at that point in time for fast recall later (Only While Recording)

Enable/Disable Wi-Fi Turn Wi-Fi On or Off

Supported Languages: English (US, UK), French, Italian, German, Spanish, Swedish, Japanese, Mandarin

#### **APP**

Mobile App VIRB Mobile

**Streaming Playback** Equirectangular, Stitched Up to 1280 × 720 at 30FPS

**Live Stream** Supported Devices: iOS 10.0 or Later

Format: Equirectangular, Stitched

YouTube: Up to  $1280 \times 720$  at 30FPS at up to 5Mbps Facebook: Up to  $1280 \times 720$  at 30FPS at up to 5Mbps

**Required Operating System** iOS 10.0 or Later

Android 5.0 or Later

**Recommended for 4K sharing** iPhone SE

iPhone 6 / 6 Plus iPhone 7 / 7 Plus iPad Air 2

Samsung S7 / S7 Edge Google Pixel / Pixel XL

Sony Z5

## **DESKTOP SOFTWARE**

Application Name VIRB Edit

Minimum Requirements Operating System (PC) Windows 7 SP1 (64-bit) + Platform Update

Operating System (Mac) Mac OSX 10.10 Yosemite

Processor 2.5GHz Quad-Core Intel Core i7 or AMD FX

Memory (RAM) 8 GB

Graphics Card Intel HD 5000 / nVidia GeForce GT 630 / AMD Radeon 8570

Graphics Memory (RAM) 2 GBDisplay Resolution  $1920 \times 1080$ Storage 20 GB Free Space

**Recommended Configuration** Operating System (PC) Windows 10 (64-bit)

Operating System (Mac) Mac OSX 10.12 Sierra

Processor 3.0GHz Quad-Core Intel Core i7 or AMD FX

Memory (RAM) 16 GB

Graphics Card Intel HD 530 / nVidia GeForce GTX 960 / AMD Radeon R9 380

Graphics Memory (RAM) 4GB
Display Resolution 3840 × 2160
Storage 20GB Free Space