INTOVA

Born in Hawaii – Built for the World

EDGE X

Waterproof HD Video Camera with WiFi

User's Manual

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PREFACE

Thank you for purchasing the Intova EDGE X waterproof sports camera! The rugged, durable and waterproof EDGE X will help you capture high quality video and photos in many different venues and environments. Visit www.intova.net to view the wide range of mount and system options available. Enjoy!!

Main features:

- Video Resolution:
  1080p@60fps, 1080p@48fps, 1080p@30fps, 1080p@24fps
  1200p@60fps, 1200p@48fps, 1200p@30fps, 1200p@24fps
  960p@60fps, 960p@48fps, 960p@30fps, 960p@24fps,
  720p@120fps, 720p@60fps, 720p@48fps, 720p@30fps, 720p@24fps,
  (WVGA) 848x480p@240fps,848x480p@120fps,848x480p@60fps, 848x480p@48fps,
  848x480p@30fps, 848x480p@24fps
  VGAp@240fps, VGAp@120fps, VGA Full (60fps), VGAp@48fps, VGA (30 fps), VGAp@24fps
- Photo Resolution: 12MP, 10MP, 8MP and 5MP
- Exclusive Video fisheye correction feature
- Rubber armored housing
- Waterproof to 330 feet / 100M
- Flat optical-glass lens port with water-repellant & anti-reflection coating
- Super-wide-angle lens at 160 degrees
- Digital Zoom: 4x, 10x, 16x and 60x
- Uses same filters and lenses as CONNEX and NOVA HD
- WiFi: remote operation and viewfinder, wireless file transfer on smartphone or tablet with WiFi app
- 1.5" / 3.8cm TFT-LCD 480x240
- Rechargeable/Removable Li-ion battery 1150mAh
- Battery life: 1.75 hours (LCD and WiFi off), 1.5 hours (LCD on, WiFi off), 1.0 hours (WiFi on, LCD off)
- Slave strobe function
- Adjustable field of view
- Removable LCD glare hood
- Diving Mode
- Motion Detection Mode
- Time Lapse mode
- Self-capture mode
- Burst Mode: 3, 5, 10, 20 and 30 photos
- Video Rotation Mode (rotate video 180° when camera is mounted upside down)
- Manual White Balance
- Picture in Video
- Dual stream mode
- LED indicator- Visual Record Alert front and back
- Audible record alert
- Float Strap
- High Definition TV output
- Video codec: H.264
- Video format: MP4 / Photo format: JPEG
- Supports Micro SD Card up to 64GB (class 10 required for HD video recording)
- WiFi remote (optional accessory, for above water use only)

FCC STATEMENT

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Computer requirements for 1080p HD video

Minimum recommended setup for viewing and editing 1080p 30fps video.

PC	Mac
Windows® 7, 8, 10	Mac OSR X 10.6.3 or later
Intel® Core 2 Duo™ or faster	Intel® Core 2 Duo™ or faster
DirectX 10.0 or later	
Minimum 2GB of system RAM Recommended: 4GB	Minimum 2GB of system RAM Recommended: 4GB
Video card with minimum 256MB of RAM	Video card with minimum 256MB of RAM
Recommended screen resolution 1920x1080 (minimum 1024x768)	Recommended screen resolution 1920x1080 (minimum 1024x768)

IMPORTANT NOTE REGARDING CHOPPY OR BROKEN UP PLAYBACK:

HD video files contain very large amounts of data. When recording 1080p video, it is important to use memory cards that are rated at class 10. 1080p 60fps is too much data for many computers to process. Most common computers cannot process more than 30fps. We recommend using 30fps for most users and applications. If 60fps is required, make sure your computer has AT LEAST 3.0-3.7 GHz third generation Core based processors or equivalent, 4GB RAM, a graphics card that compares to an NVIDIA® GeForce GT650M™ or better and playback software that can process 1080p 60fps video.

Important notice:

- ⚠ WARNING: Do not attempt to take apart the camera as there are high voltage parts and dangerous electric   shock can occur.
- ⚠ WARNING: If the camera is dropped or smashed and internal parts are exposed, do not touch as there is a danger of electric shock.
- Do not leave the camera in direct sunlight or near heat sources as these can damage the camera.
- If camera becomes hot during use, turn off the power immediately.
- For storage, remove the memory card and keep camera in a cool, dry place with housing door slightly open.
- Before each use, clean and maintain all O-rings in areas that have been opened by removing any dirt, sand and any other debris
- Before each use, clean and maintain O-ring by removing any dirt, sand and other debris and lightly lubricating with silicone grease as needed to prevent drying and cracking. Make sure to remove **_all_** excess grease before use - excess grease can cause leakage and failure of seal.
- Use float strap as extra precaution for water use.
- If camera stops responding to button controls, follow these steps to reset.
    1. Remove and reinsert battery.
    2. Remove MicroSD card.
    3. Turn camera ON and perform a "DEFAULT SETTING" in the camera's SYSTEM menu.
    4. Reinsert MicroSD card and turn on camera to use.

Included Accessories:

Lithium ion battery, USB cable, float strap, anti-glare hood, silicone grease, quick start Guide, and optional accessory sheet.
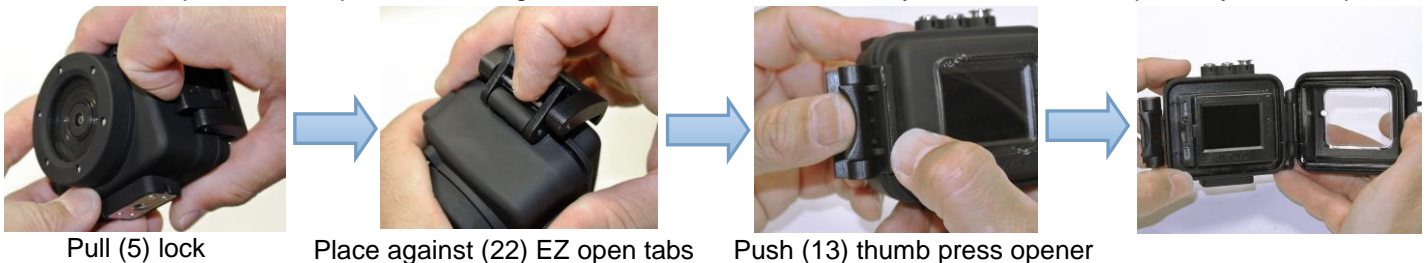
GETTING TO KNOW YOUR CAMERA

(2) MENU, WiFi ON/OFF

(1) POWER, MODE, MENU scrolling

(3) SHUTTER

(7) Removable anti-glare hood

(8) Port for rear video recording in progress LED

(6) Recording indicator LED

(9) UP, ZOOM IN

(10) OK

(5) LOCK

(11) DOWN, ZOOM OUT, LCD ON/OFF

(4) Tripod mount

(12) Float strap attachment point

(17) Slave strobe activator light

(16) Micro USB port

(18) Li-ion battery door: lift to open

(15) Micro SD card port

(19) LCD

(20) Rear recording and charging indicator LED

(14) HDTV output port

(21) O-ring

(13) Thumb press opener

(22) EZ open tabs

GETTING STARTED

Opening the camera:

Follow the steps below to open the housing. Sometimes a vacuum seal may occur, use thumb press system to open.

Pull (5) lock   Place against (22) EZ open tabs   Push (13) thumb press opener

Insert the rechargeable Li-ion battery:

1. Open the battery compartment door by pulling on (18) battery door tab.
2. Insert the removable / rechargeable Li-ion battery (included) into the battery compartment, making sure that the battery contacts are aligned correctly with the contacts in the compartment.
3. Fold the battery puller over the battery and close battery compartment door.

Preparations:

1. Prior to first use, do a "DEFAULT SETTING" by pressing MENU button, UP button 2 times to go to SYSTEM, OK button, UP button 4 times, OK button, UP button and OK.
2. Select appropriate TV SYSTEM (NTSC or PAL) in SYSTEM menu prior to recording.
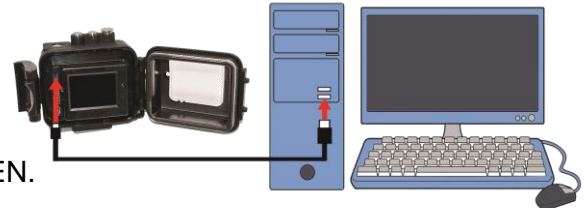
Inserting the Micro SD card:

Make sure that camera is turned OFF when inserting or removing Micro SD card. Insert card into Micro SD card port with gold contacts facing towards LCD screen. Push down until card clicks into place. To remove, press down on inserted card to click and then release. EDGE X uses Micro SD card up to 64 GB. For HD video, speed class 10 is required.
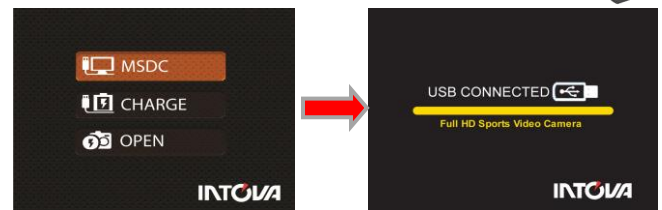

1. **The camera cannot record video or take photos without a properly inserted memory card.**
2. Format a new Micro SD card before first use or as necessary after first use such as when memory card becomes full. To format SD card press MENU, go to SYSTEM, OK button, UP button 5 times, OK button, UP button, and OK. **WARNING: Format will erase all data from card. Transfer and save any data prior to formatting.**
3. When recording video in 1080p resolution, card speed class 10 is required.
4. Please set appropriate TV SYSTEM (NTSC or PAL) in camera's SYSTEM menu prior to recording.

Data transfer and charging:

Connect your camera to a computer with the micro USB cable. After connection, camera will turn on. Use UP / DOWN buttons and press OK button to select MSDC / CHARGE / OPEN.

MSDC: To download video or photo files. When this choice is selected, the screen with "USB CONNECTED" will appear and camera will be detected by the computer. Files can then be transferred.

CHARGE: To recharge the battery. Charging time is up to 6 hours.
When CHARGE is selected, LCD will turn off.

Charging the Li-ion battery:
1. Insert the USB cable into the camera's Micro USB port.
2. Insert other end of cable into a computer USB port.
3. Scroll down to select CHARGE and press OK.
4. When charge is complete, red LED will turn off.

Important: DO NOT allow Li-ion battery to become fully discharged.
If not using camera for a prolonged period, recharge every 3 months to prevent battery from becoming fully discharged.

OPEN: To recharge the battery power and operate the camera at the same time. When this choice is selected, LCD will show live view.

If none of the above is selected, the MSDC/CHARGE/OPEN screen will remain until a function is chosen.
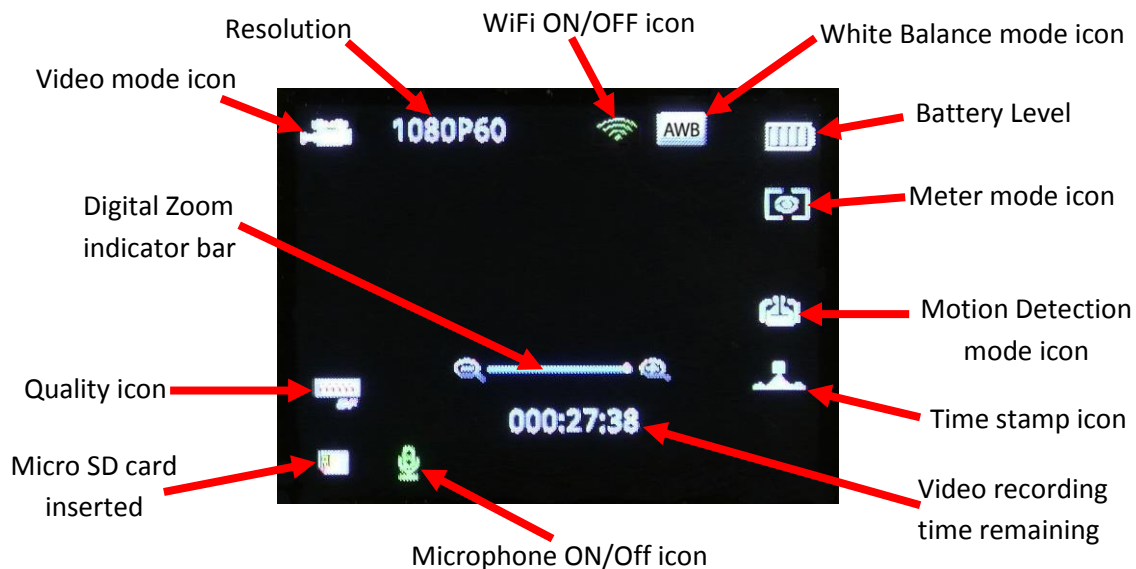
USING EDGE X

IMPORTANT: Before each use, clean and maintain O-ring by removing any dirt, sand and other debris and lightly lubricating with silicone grease as needed to prevent drying and cracking. Make sure to remove **_all_** excess grease before use - excess grease can cause leakage and failure of seal.

To turn camera on, press and hold power ON/OFF button for 2 seconds and then release (if camera is in sleep mode, short press once to waken).

Video Mode LCD Monitor Display

Video mode idle screen

Resolution · WiFi ON/OFF icon · White Balance mode icon · Video mode icon · Battery Level · Digital Zoom indicator bar · Meter mode icon · Motion Detection mode icon · Quality icon · Time stamp icon · Micro SD card inserted · Video recording time remaining · Microphone ON/Off icon

To start video recording, press the shutter button while in video mode. To take a photo while recording video (picture in video), press OK button (color of icon will change to orange).

Recording video screen

Blinking Red Dot (video recording in progress) · Video recording time · Picture in Video icon
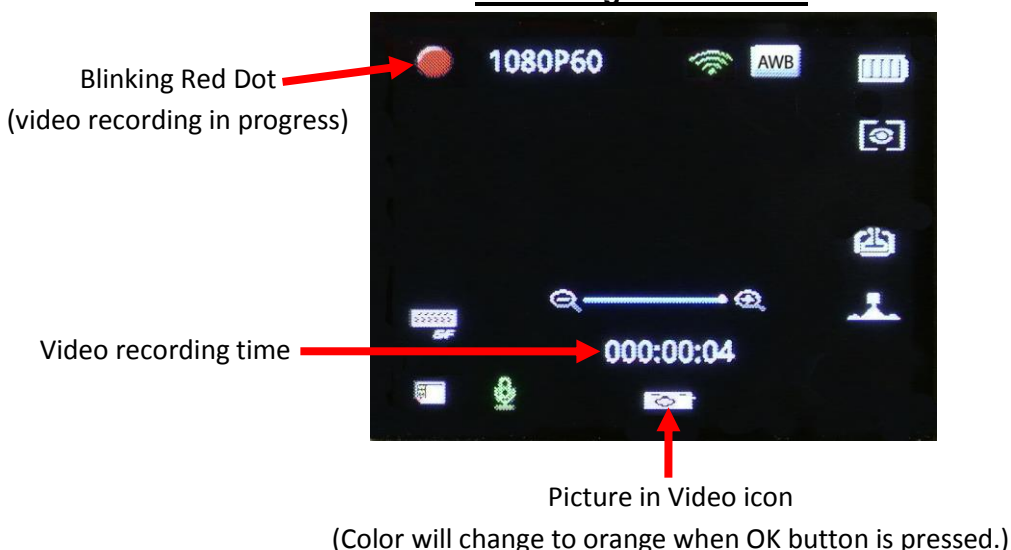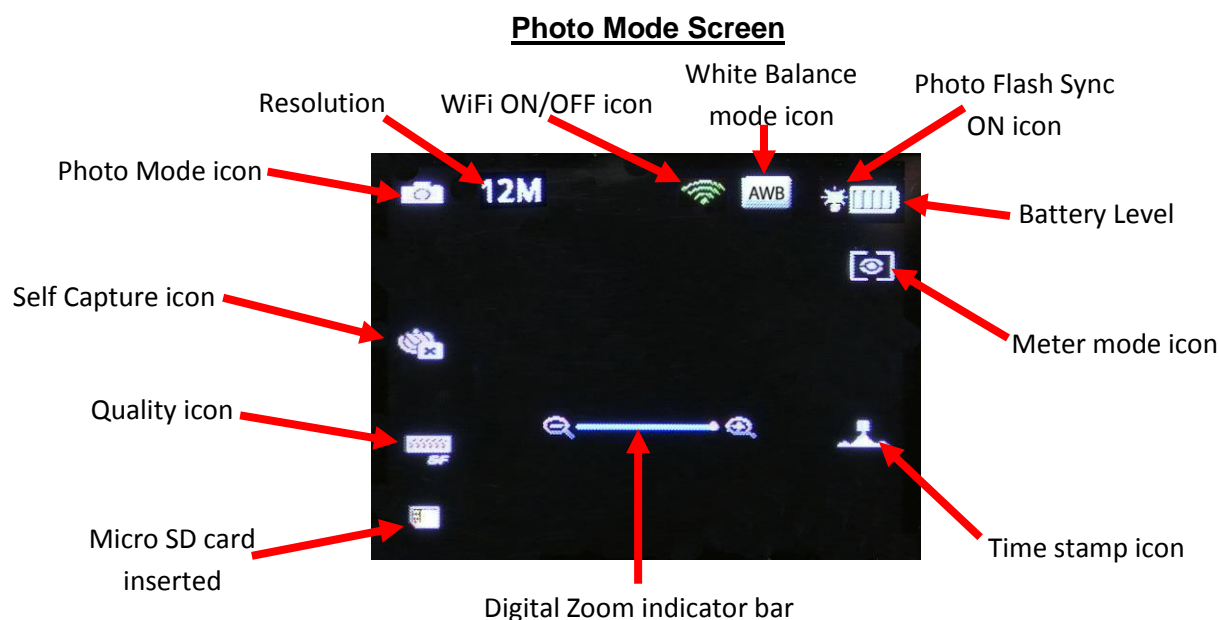(Color will change to orange when OK button is pressed.)

Photo Mode LCD Monitor Display

To switch to photo mode, press and quickly release MODE - Power ON/OFF button. To take a photo, hold camera steady while pressing and releasing SHUTTER button.

Photo Mode Screen

Resolution
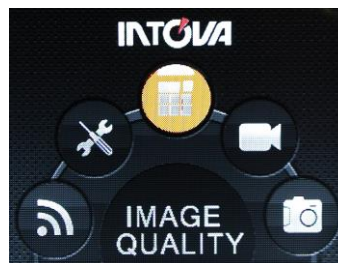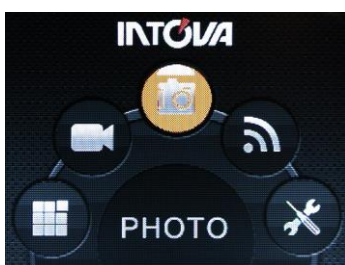WiFi ON/OFF icon
White Balance mode icon
Photo Flash Sync ON icon
Photo Mode icon
Battery Level
Self Capture icon
Meter mode icon
Quality icon
Micro SD card inserted
Time stamp icon
Digital Zoom indicator bar

Basic Operations of EDGE X camera

BUTTON	BASIC OPERATION PROCEDURES
POWER, VIDEO/PHOTO/ FILE VIEWING modes, MENU SCROLLING button	1) Press and hold for 2 seconds and release button to turn on or turn off camera. 2) Quickly press button to switch between Video, Photo, and File Viewing modes. 3) In either Video or Photo mode, press MENU and OK buttons. Quickly press button to scroll through MENU.
MENU, WiFi ON/OFF, DELETE button	1) To bring up MENU, quickly press and release button. 2) To turn WiFi ON or OFF, press and hold button for 3 seconds and release. 3) While in File Viewing mode, press button to DELETE single or all files.
SHUTTER button	Press "SHUTTER" button to start and stop video recording or to take a photo.
UP, ZOOM IN button	1) Press button to scroll up through sub-menu selections. 2) Press and hold to ZOOM IN when digital zoom mode is activated.
OK button	1) Press button to confirm menu selection 2) During video recording, press button to take a photo (Picture in Video)
DOWN, ZOOM OUT, LCD ON/OFF button	1) Press button to scroll down through sub-menu selections. 2) Press and hold to ZOOM OUT when digital zoom mode is activated. 3) Press button to turn LCD ON/OFF.

NOTE: If camera stops responding to button controls, follow these steps to reset.
1. Remove and reinsert battery.
2. Remove MicroSD card.
3. Turn camera ON and perform a "DEFAULT SETTING" in the camera's SYSTEM menu.
4. Reinsert MicroSD card and turn on camera to use.

CAMERA SETTINGS

To access camera settings, press the MENU button and press UP or DOWN button to scroll through main menu selections and press OK button to enter sub-menu selections. Shown below are the five main menu selections screens.

VIDEO MENU

With VIDEO menu icon highlighted, press OK button to enter video settings sub-menu. Use the UP or DOWN button to scroll through the sub-menu and press OK button to select from RESOLUTION, VIDEO QUALITY, MOTION DETECTION, VIDEO DURATION, LOOP VIDEO, MUTE, DUAL STREAM, VIDEO STAMP and TIME LAPSE V. After selecting sub-menu, use UP or DOWN to scroll through choices, press OK button to select and press MENU button to go back to main screen.

1) **RESOLUTION:** Setting sub-menu choices are explained in chart below.

RESOLUTION	NTSC/PAL fps	DESCRIPTION
1080P60	60/50	Highest resolution 16:9 HD video @ 1920x1080 pixels. 60/50 frames per second rate for both action and better slow motion effect*.
1080P30	30/25	Highest resolution 16:9 HD video @ 1920x1080 pixels. 30/25 frames per second rate for both action and when mounted on stable object.
1080P48	48/48	Highest resolution 16:9 HD video @ 1920x1080 pixels. 48/48 frames per second rate for both action and better slow motion effect*.
1080P24	24/24	Highest resolution 16:9 HD video @ 1920x1080 pixels. 24/24 frames per second rate for both action and when mounted on stable object.
1200P60	60/50	High resolution 16:10 HD video @ 1920x1200 pixels. 60/50 frames per second rate for both action and better slow motion effect*.
1200P30	30/25	High resolution 16:10 HD video @ 1920x1200 pixels. 30/25 frames per second rate for both action and when mounted on stable object.
1200P48	48/48	High resolution 16:10 HD video @ 1920x1200 pixels. 48/48 frames per second rate for both action and better slow motion effect*.
1200P24	24/24	High resolution 16:10 HD video @ 1920x1200 pixels. 24/24 frames per second rate for both action and when mounted on stable object.

960P60	60/50	High resolution 4:3 video @ 1280x960 pixels produces largest vertical viewing area. 60/50 frames per second rate for action shooting and better slow motion effect*.
960P30	30/25	High resolution 4:3 video @ 1280x960 pixels produces largest vertical viewing area. 30/25 frames per second rate for action shooting, when mounted on stable object and for lower light conditions.
960P48	48/48	High resolution 4:3 video @ 1280x960 pixels produces largest vertical viewing area. 48 frames per second rate for action shooting and better slow motion effect*.
960P24	24/24	High resolution 4:3 video @ 1280x960 pixels produces largest vertical viewing area. 24/24 frames per second rate for action shooting, when mounted on stable object and for lower light conditions.
720P60	60/50	High resolution 16:9 HD video @ 1280x720 pixels. 60/50 frames per second rate for hand held, action shooting and good slow motion effect*. Produces larger file size than 30/25 fps selection below.
720P30	30/25	High resolution 16:9 HD video @ 1280x720 pixels. 30/25 frames per second rate for action shooting, when mounted on stable object and for lower light conditions. Produces smaller file size than 60/50 fps.
720P48	48/48	High resolution 16:9 HD video @ 1280x720 pixels. 48/48 frames per second rate for action shooting and for slow motion effect*. Produces smaller file size than 60/50 fps.
720P24	24/24	High resolution 16:9 HD video @ 1280x720 pixels. 24/24 frames per second rate for action shooting, when mounted on stable object and for lower light conditions. Produces smaller file size than 48/48 fps.
720P120	120/100	High resolution 16:9 HD video @ 1280x720 pixels. 30/25 frames per second rate for action shooting and for super slow motion effect*. Produces larger file size than 60/50 fps.
848x480/60F (WVGA)	60/50	Wide standard resolution 16:9 video @ 848x480 pixels produces small file size. 60/50 frames per second rate for hand held, action shooting and slow motion effect*.
848x480/30F (WVGA)	30/25	Wide standard resolution 16:9 video @ 848x480 pixels produces small file size. 30/25 frames per second rate for hand held, action shooting.
848x480/48F (WVGA)	48/48	Wide standard resolution 16:9 video @ 848x480 pixels produces small file size. 48/48 frames per second rate for hand held, action shooting and for slow motion effect*.
848x480/24F (WVGA)	24/24	Wide standard resolution 16:9 video @ 848x480 pixels produces small file size. 24/24 frames per second rate for hand held, action shooting.
848x480/120F (WVGA)	120/100	Wide standard resolution 16:9 video @ 848x480 pixels produces small file size. 120/100 frames per second rate for hand held, action shooting and for super slow motion effect*.
848x480/240F (WVGA)	240/200	Wide standard resolution 16:9 video @ 848x480 pixels produces small file size. 240/200 frames per second rate for hand held, action shooting and for super slow motion effect*.
VGA FULL	60/50	Standard resolution 4:3 video @ 640x480 pixels produces small file size. 60/50 frames per second rate for hand held, action shooting and for slow motion effect*.

VGA	30/25	Standard resolution 4:3 video @ 640x480 pixels produces small file size. 30/25 frames per second rate for hand held, action shooting.
VGAP48	48/48	Standard resolution 4:3 video @ 640x480 pixels produces small file size. 48/48 frames per second rate for hand held, action shooting and for slow motion effect*.
VGAP24	24/24	Standard resolution 4:3 video @ 640x480 pixels produces small file size. 24/24 frames per second rate for hand held, action shooting.
VGAP120	120/100	Standard resolution 4:3 video @ 640x480 pixels produces small file size. 120/100 frames per second rate for hand held, action shooting and for super slow motion effect*.
VGAP240	240/200	Standard resolution 4:3 video @ 640x480 pixels produces small file size. 240/200 frames per second rate for hand held, action shooting and for super slow motion effect*.
*Slow motion effect is produced in video editing software which includes that feature.		

2) VIDEO QUALITY: Setting sub-menu choices are explained in chart below.

SETTING	DESCRIPTION
Super Fine	Produces best quality video for selected resolution.
Fine	Produces good quality video for selected resolution.
Normal	Produces regular quality video for selected resolution.

3) MOTION DETECTION: Video will start recording automatically when motion is detected in field of view. Video will be recorded for 5 seconds and stop if no other motion is detected. Setting choices are ON or OFF.

4) VIDEO DURATION: Allows the camera to record a video clip for a selected time length in minutes and to continue recording video clips of the same time length one after another unless operator stops recording manually by pressing SHUTTER button. Setting choices are OFF, 1 minute, 3 minutes, 5 minutes and 10 minutes.

5) LOOP VIDEO: Allows camera to continue capturing video after memory card has become full by recording over previous video files from the beginning. Setting choices are ON or OFF.

6) MUTE: This feature allows audio recording to be turned off. Select YES to turn audio OFF and select NO to turn audio recording ON.

7) DUAL STREAM: Allows camera to simultaneously record another video clip in QVGA size in addition to the selected regular resolution. For 1080p, 720p and 480p; the additional clip is 432x240 pixels. For 960p; the additional clip is 320x240 pixels.

8) VIDEO STAMP: This feature places the date only, time only or both date and time on the video clip which is visible during playback. Setting choices are OFF, DATE, TIME, or DATE and TIME

9) TIME LAPSE V: Allows the camera to record video clips with delays between each clip corresponding to selected time interval in seconds. This produces a high quality time lapse effect. Setting choices are OFF, 1 sec, 2 sec, 3 sec, 5 sec, 10 sec, 30 sec and 60 sec.

PHOTO MENU

With PHOTO menu icon highlighted, press OK button to enter photo settings sub-menu. Use the UP or DOWN button to scroll through the sub-menu and press OK button to select from SIZE, PHOTO QUALITY, PHOTO BURST, PHOTO FLASH, SELF CAPTURE, TIME LAPSE P and PHOTO STAMP. After selecting sub-menu, use UP or DOWN to scroll through choices, press OK button to select and press MENU button to go back to main screen.

1) SIZE: Setting sub-menu choices are explained in chart below.

PHOTO FILE SIZE	PIXEL DIMENSIONS	DESCRIPTION
12MP	4000 x 3000	Largest file size (true)
10MP	3648 x 2736	Large file size (true)
8MP	3264 x 2448	Medium file size (true)
5MP	2592 x 1944	Small file size (true)

2) PHOTO QUALITY: Setting sub-menu choices are explained in chart below.

SETTING	DESCRIPTION
Super Fine	Produces best quality photo for selected size.
Fine	Produces good quality photo for selected size.
Normal	Produces regular quality photo for selected size.

3) PHOTO BURST: This feature allows 3, 5, 10, 20 and 30 "burst" photos per shutter button press.

4) PHOTO FLASH: This sets the slave strobe sync light to OFF, ON or MODE1.
a) Select ON to manually adjust camera ISO and Image Quality settings to various lighting conditions.
b) Use MODE1 for auto adjustment.
c) Required optional accessories are: fiber optic cable, item# PXX, and Intova compact strobe, item# PX21.

5) SELF CAPTURE (self-timer): Allows time delay in seconds between pressing of SHUTTER button and taking of photo. To activate self-capture:
1. Press (2) MENU button and select PHOTO.
2. Press (10) OK button.
3. Press (9) UP button 3 times and press (10) OK button.
4. Select OFF, 3, 5, 10 seconds and press (10) OK.
5. Press (2) MENU button to go back to main screen.
6. LCD screen should show self-timer   icon.
7. Press (3) SHUTTER button to start timer.

6) TIME LAPSE P: Allows the camera to continually take a photo with delays between each photo corresponding to selected time interval in seconds. This produces a high quality time lapse effect. Setting choices are OFF, 1 sec, 2 sec, 3 sec, 5 sec, 10 sec, 30 sec and 60 sec.

7) PHOTO STAMP: This feature places the date only, time only or both date and time on the photo file which is visible viewed or printed. Setting choices are OFF, DATE, TIME, or DATE and TIME.

WIFI

This feature allows camera to be connected to an iOS or Android wireless device such as a smart phone or tablet for remote operation, live viewing and file transferring using the INTOVA EDGE X app.

TO TURN ON WIFI:
1. Press and hold MENU button until "Processing" in red appears. WiFi icon should turn green.
2. To turn off WiFi, press and hold MENU button until WiFi icon turns white with red X.

INTOVA EDGE X WiFi App
1. On an iOS or Android device, go to either the Apple Store or Google Play and type "INTOVA EDGE X" in "search" to find and install the app on your smartphone or tablet. Reboot your device after install.
2. Turn on your EDGE X (with MicroSD card inserted) and turn on WiFi.
3. With your smartphone or tablet, connect to EDGE X WiFi signal. The default network name is "INTOVA EDGE X".
4. Enter the password "1234567890".
5. Open the INTOVA EDGE X app on your smartphone or tablet. See live view, control camera and transfer files by using touch controls as shown below.
*Notice: For some Android phone models, "AUTO CONNECT" function in WiFi advanced menu needs to be disabled.

EDGE X app on an Android device

WiFi signal strength

Video or Photo resolution

Video Time lapse

Digital zoom (zoom must be activated)

Refresh

Settings

Photo mode

Download or view files

Date

Shutter

Time

Video mode

EDGE X app on an iOS device

Date and Time

2015-06-17 09:06:05

Video or Photo resolution

Settings

Download or view files

Shutter

Video mode

Photo mode

13

Changing WiFi network name and password:
When connecting to more than one camera at the same time, it is necessary to change the network name(s) and password(s) on the other camera(s). Follow these steps to change network ID and password:
1. Insert a Micro SD card into the camera, turn camera ON and turn WiFi ON.
2. Turn camera OFF and connect it to a computer via the supplied USB cable and select "MDSC".
4. Open "MISC" folder on your computer desktop.
5. Open the "wifi.conf" file using either WordPad (PC) or TextEdit (Mac).
6. In the section "SoftAP configuration" find the default network name "INTOVA EDGE X" highlighted in the example below and type in a new name.
7. Find the default password "1234567890" highlighted in the example below and type in a new password.
8. **Caution: do not change other parts of the configuration file.**
9. Save the configuration file.
10. Now you can control the additional EDGE X camera using another smartphone or tablet connected to the camera using the new network name and password.

```
##### SoftAP configuration ######################################
# SSID (1 ~ 32 characters)
AP_SSID=INTOVA EDGE X
# IP address
LOCAL_IP=192.168.42.1
# IP subnet mask
LOCAL_NETMASK=255.255.255.0
# IP pool starting address of DHCP server
DHCP_IP_START=192.168.42.2
# IP pool end address of DHCP server
DHCP_IP_END=192.168.42.6
# Wifi channel number, set 0 to use Auto Channel Selection
AP_CHANNEL=0
# Maximum number of stations allowed in station table
AP_MAXSTA=5
# If you say yes here, all WPA/WEP settings will be ignored
AP_PUBLIC=no
# WPA Passphrase (8 ~ 63 characters)
AP_PASSWD=1234567890
```

SYSTEM MENU
Highlight SYSTEM menu icon and press OK button to enter system settings sub-menu. Use the UP or DOWN button to scroll through the sub-menu and press OK button to select from TV SYSTEM, VIDEO ROTATION, DIGITAL ZOOM, AUTO LCD OFF, VOLUME, LANGUAGE, FIRMWARE VERSION, TIME SETUP, FORMAT, DEFAULT SETTING, AUTO POWER OFF, LENS CORRECT, and FOV. After selecting sub-menu, use UP or DOWN to scroll through choices, press OK button to select and press MENU button to go back to main screen.

1) TV SYSTEM: This setting configures the video file for playback on either an NTSC or PAL system device.

2) VIDEO ROTATION: This setting allows video to be played back in correct orientation for videos that are recorded with camera mounted upside down. Setting choices are ON to activate and OFF to deactivate feature.

3) DIGITAL ZOOM: This setting allows digital zoom feature for either video or photo mode to be activated. When digital zoom is activated, use the UP button to zoom in and the DOWN button to zoom out. The setting choices are OFF, 4X, 10X, 16X and 60X.

4) AUTO LCD OFF: This setting allows LCD to stay on or turn off after a specified time; 30 seconds, 1 minute, or 3 minutes. Use this feature to conserve battery power. Select OFF to disable function and leave screen turned ON.

5) VOLUME: This setting allows beep sound volume to be turned OFF or adjusted from level 1 to 5.

6) LANGUAGE: This setting allows MENU language to be selected between English, Chinese (Traditional), Chinese (simplified), Japanese, French, German, Dutch, Portuguese, Spanish, Korean and Italian.

7) FIRMWARE VERSION: This indicates installed firmware version. Please note when updating firmware in order to confirm new firmware has been installed.

8) TIME SETUP: This setting allows current date and time to be set. With sub-menu item highlighted, press OK button to enter setting. Press UP or DOWN button to change number and press MODE button to scroll to next. When done, press OK button to confirm and go back to sub-menu.

9) FORMAT: This feature allows MicroSD card to be formatted. **WARNING, formatting card will erase all data!** Press OK button to enter function. Press the DOWN button to highlight YES and press OK to format.

10) DEFAULT SETTING: This feature allows all camera settings to be reset to factory default.

11) AUTO POWER OFF: This setting allows camera to stay on (when OFF is selected) or turns camera off when 30 sec, 3 minutes or 5 minutes is selected. Use this feature to conserve battery power.

12) LENS CORRECT: This feature corrects for "fisheye" distortion in <u>videos only</u> by straightening the curved edges.

"Lens Correct" mode OFF   "Lens Correct" mode ON

13) FOV: This setting changes the "field of view" angle in both videos and photos. Choices are: FOV0 (wide), FOV1 (medium) and FOV2 (narrow).

IMAGE QUALITY MENU

With IMAGE QUALITY menu icon highlighted, press OK button to enter photo settings sub-menu. Use the UP or DOWN button to scroll through the sub-menu and press OK button to select from FLICKER, SCENE MODE, WHITE BALANCE, IMAGE EFFECTS, CONTRAST, SHARPNESS, METER, ISO, and EV SETTING. After selecting sub-menu, use UP or DOWN to scroll through choices, press OK button to select and press MENU button to go back to main screen.

1) FLICKER: This setting allows the camera to be adjusted to AUTO, 60Hz or 50Hz to prevent video flickering caused by fluorescent lights. For USA, the setting is 60Hz.

2) SCENE MODE: This setting selects the below scene modes.

SCENE MODE	DESCRIPTION
OFF	Scene Mode is OFF
NIGHT SCENE	For video/photography in low light and at night. Due to slower shutter speed, mounting on stable object such as a tripod is recommended.
DIVING	Activates an electronic red filter to add back warm colors while diving at depths between 20'-50'/ 6 M-15 M in salt water. Below 50'/15 M, it is recommended to deactivate DIVING mode and use a physical red filter such as Intova IFRED SP1.
SPORTS	For video/photography of fast moving subjects or during action activities. Camera uses faster shutter speeds to improve imagery.
LANDSCAPE	For video/photography of distant subjects such as mountains, cityscape, etc.
SUNSET	For video/photography of scenes that include sunrise or sunset in the background. Camera uses faster shutter speed to improve imagery.
SAND & SNOW	For video/photography where bright background causes subject to appear dark (silhouetted). Camera uses slower shutter speed to improve imagery.

3) WHITE BALANCE: This setting improves color accuracy when the ambient light is either too cool (blue or green) or too warm (yellow/orange). Examples of cool lighting situations are cloudy day, diving at depths below 20 feet / 6 meters in either fresh or salt water, fluorescent light, or scenes in shade. Examples of warm lighting situations are candlelight and tungsten light. Setting choices are AUTO, MANUAL, SUNNY (daylight situations), CLOUDY (cool light situations), FLUORESCENT (under fluorescent lighting), and INCANDESCENT (under filament lamp lighting).

To use MANUAL white balance setting:
1. Select MANUAL and press OK button to activate, then press MENU button to go to main screen.
2. Press MENU button to go to main screen. The manual white balance icon will be blinking at the top of the LCD screen.
3. Aim camera at white balance board or a white object and press SHUTTER button. White balance is now set to current ambient light.
4. To reset manual white balance for a new ambient light situation, turn camera off and on to reactivate blinking manual white balance icon and repeat step 2.

4) IMAGE EFFECTS: This setting allows selection of image altering effects as shown below.

EFFECT	DESCRIPTION
ART	Changes background sharpness and contrast
SEPIA	Adds yellow-brown tint to video/photo.
NEGATIVE	Reverses imagery to make it appear like a film negative.
BLACK & WHITE	Removes color to create a monochrome video/photo.
VIVID	Enhances colors

5) CONTRAST: This setting increases or reduces the difference between dark and light areas. The default setting is STANDARD. To make dark areas blacker and light areas brighter in videos/photos, select ENHANCE. To make dark areas less black and light areas darker, select LOW.

6) SHARPNESS: This setting increases or decreases video/photo sharpness. The default setting is STANDARD. Select HARD to sharpen or SOFT to blur.

7) METER: This feature selects the general area in a scene that the cameras uses when calculating image exposure. Selecting CENTER will decrease this area towards the middle of the scene. Selecting AVERAGE causes camera to adjust exposure to light coming from the overall area as viewed in LCD. Selecting SPOT will cause camera to adjust exposure based on light coming from a very concentrated area in the middle of the scene.

8) ISO: This setting adjusts the camera's sensitivity to light. The default setting is AUTO. A higher ISO number will result in a lighter video/photo and is useful in low light conditions. The choices are AUTO, 100, 200, 400, and 800.

9) EV SETTING: This setting adjusts the brightness or darkness of the video/photo between ±2 f stops. Setting to positive values will brighten imagery, while negative values will darken imagery.

VIEW PHOTOS OR PLAYBACK VIDEOS

Using LCD screen to playback videos or view photos:
1. Go to View Files mode by pressing MODE button twice if in Video mode or once if in Photo mode.
2. Press UP or DOWN button to scroll through files
3. To playback a video file, press the OK button to start video and press OK button to stop and return to thumbnail view. Pressing UP arrow button will slow down video during playback and pressing DOWN arrow button will speed up video playback.
4. To view photo, press the OK button. Press MODE button to return to thumbnail view.
5. Press MODE button to return to video mode.

Playback using High Definition TV Output:
To view HD videos on a High Definition TV, use a micro HD TV cable (not included) to connect camera to the TV. Plug the micro HDTV plug into the camera's micro HD TV port and the other USB plug into the HDTV. Turn camera on and press MODE button twice to get to the file viewing mode. Use UP or DOWN buttons to scroll through thumbnail images and press OK button to select a video file. Press OK button again to begin playback and view on HDTV.

DELETING FILES

To delete a single file:
1. Go to View Files mode by pressing MODE button twice if in Video mode or once if in Photo mode.
2. Press UP or DOWN button to select a file and then press the MENU button.
3. Press the OK button twice, then press the UP or DOWN button to highlight circle.
4. Press OK to execute deletion.

To delete all files:
1. Go to View Files mode by pressing MODE button twice if in Video mode or once if in Photo mode.
2. Press UP or DOWN button to select a file and then press the MENU button.
3. Press to OK button once then press the DOWN button to select "all".
4. Press the OK button then press the UP or DOWN button to highlight circle.
5. Press OK to execute deletion of all files.

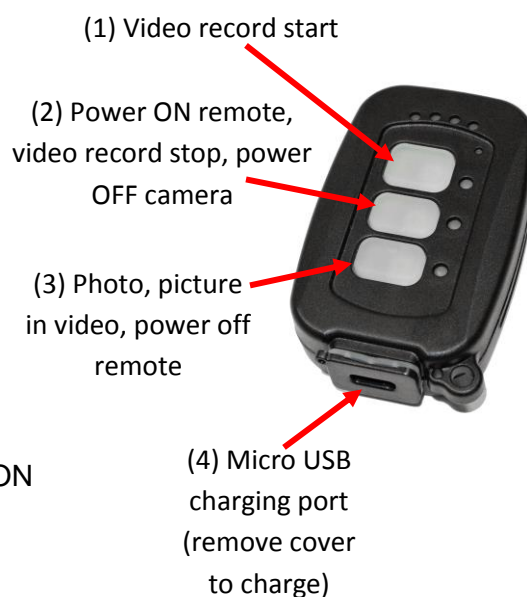# OPTIONAL ACCESSORY (sold separately)

WiFi remote:
The remote enables user to start/stop video recording, take a photo and turn off camera. Powered by rechargeable Li-ion battery. Model WIFI REMOTE.
IMPORTANT NOTE: Wireless transmission will not work underwater. Wireless remote is for above water use only.

WiFi remote operations
1) Press and hold (2) Power ON remote button for 3 seconds to turn ON remote.
2) Turn on camera and go to WiFi menu.
3) Turn on "REMOTE" feature in WiFi menu.
4) Press MENU button to go to main screen.
5) Press and hold MENU button for 3 seconds to turn on WiFi.
6) Camera and remote are connected when WiFi icon turns green with red "R".
7) To start video recording, quickly press and release (1) Video record start button.
8) To take photo while recording video, quickly press and release photo button.
9) To stop video recording, quickly press and release (2) Power ON remote button.
10) To take a photo, quickly press and release (3) Photo button.
11) To turn off camera and remote at the same time, press and hold (2) Power ON remote button for 3 seconds.

(1) Video record start

(2) Power ON remote, video record stop, power OFF camera

(3) Photo, picture in video, power off remote

(4) Micro USB charging port (remove cover to charge)

SPECIFICATIONS

Effective Sensor	1/ 2.3 ″ 12MP CMOS SENSOR
LCD Screen	Built in 1.5" TFT-LCD 480*240 resolution
Photo Resolution & approximate number of shots using a 64GB Micro SD card	12M 4000x3000 JPG approx. 15000 photos/64GB
	10M 3648x2736 JPG approx. 18000 photos/64GB
	8M 3200x2400 JPG approx. 22000 photos/64GB
	5M 2592x1944 JPG approx. 36000 photos/64GB

Video Resolution & approximate possible video recording time using a 64 GB Micro SD card class 10 (quality set at super fine)	1080P60	256 min
	1080P30	384 min
	1080P48	384 min
	1080P24	384 min
	1200P60	256 min
	1200P30	384 min
	1200P48	384 min
	1200P24	384 min
	960P60	256 min
	960P30	384 min
	960P48	384 min
	960P24	384 min
	720P60	570 min
	720P30	960 min
	720P48	960 min
	720P24	960 min
	720P120	330 min
	848x480/60F (WVGA)	960 min
	848x480/30F (WVGA)	1920 min
	848x480/48F (WVGA)	1920 min
	848x480/24F (WVGA)	1920 min
	848x480/120F (WVGA)	570 min
	848x480/240F (WVGA)	330 min
	Possible recording times for VGA is similar to WVGA	

Lens specification	F/2. 8 f=3. 5 mm 160° wide angle
Built-in microphone	Yes
Operation Tone	Available
Battery capacity	3.7V/ 1150mAh
Power consumption	1.9W
Continuous recording	About 1.75 hours (LCD off and WiFi off), 1.5 hours (LCD on and WiFi off) and 1.0 hour (WiFi on and LCD off)
Charging spec.	DC5V about 780mA
Charging time	About 6 hours
Micro USB port	USB 2.0 High Speed for downloading and charging
High Definition TV output port	Built in
Type of memory card	Micro SD card (class 10 required for HD video)
Capacity of memory card	4GB-64GB
WiFi	Built in
Depth rating	Waterproof to 330 ft / 100M
Weight	201 grams
Dimension	(2.8x3.3x2.4)in / (84 x 70 x 60)mm
Standard Accessories	Lithium ion battery, USB cable, float strap, anti-glare hood, silicone grease

NOTE: As a result of continual improvements, the design and specifications of the product as described in this manual may change without notice.

STANDARD CONSUMER WARRANTY

Intova warrants its products against defects in material and workmanship for 1 year from Date of Purchase. Pursuant to this Limited Warranty, Intova will, at its option, repair or replace legitimately defective products. Repair and/or replacement may include the use of refurbished parts or products. "Refurbished" means products or parts that have been factory restored to original specifications. Warranty coverage only applies to the original purchaser, when purchased from an authorized Intova dealer. Proof of Purchase from authorized dealer must be included with all warranty returns. The Warranty does not cover: (1) Rental or Commercial use (2) damage caused by accident, misuse, abuse, improper installation or operation, product modification or neglect, (3) damage occurring during shipment; (4) damage caused by repair or service performed by persons not authorized by Intova; (5) products on which the serial number has been altered, defaced or removed; (6) products not purchased from an Authorized Intova Dealer. To obtain warranty service, contact Intova for a Return Authorization number. Product and Proof of Purchase must be returned, freight prepaid, to Intova with RA number clearly marked on package. Product must be sent in original or comparable packaging that protects the contents. It is the owner's responsibility to back up and save all data, photos or software. Intova will not be responsible for loss or damage to data, software or photos.

For questions or customer service please call:
(808) 837-0074 or (877) 837-0074 toll free USA only