

Part number:
44601-0102

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July 23, 2013, 05:12 AM

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Legal disclaimer

Specifications subject to change without further notice. Camera models and accessories subject to regional market considerations. License procedures may apply.

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General description

IR camera for furnace and high temperature inspection

The FLIR GF309 is an IR camera for the high-temperature measurement of industrial furnaces, chemical heaters, and coal-fired boilers, without the need to shut down the operation. The portable camera also greatly improves operator safety, by measuring through flames at a safe distance, for all types of furnaces. A good knowledge of the furnace condition can avert failures and unscheduled shutdowns

Industrial furnaces, heaters, and boilers are found in the chemical, petrochemical, and utility industries.

Benefits:

- Improved efficiency: The FLIR GF309 reduces inspection time by measuring the temperature through flames without the need to interrupt the industrial process or await scheduled service shutdowns. A furnace camera can help you to determine how to run a furnace/boiler efficiently to give the best fuel economy and maximize production output and quality. As the FLIR GF309 has a wide temperature range, high-accuracy electrical and mechanical inspections can be performed, which makes the camera even more useful for predictive maintenance.
- The wireless connectivity of the camera allows you to connect to smart phones or tablet PCs for the wireless transfer of images or the remote control of the camera—a useful function if regulations require a second person to accompany the furnace inspector or thermal images needs to be sent quickly for a second opinion.
- Increased worker safety: High-temperature measurement can be performed through flames in a non-contact mode, and from a safe distance. Custom-built, the FLIR GF309 also features a detachable heat-shield designed to reflect heat away from the camera and the camera operator, providing increased protection. The camera is ergonomically designed with a bright LCD and tiltable viewfinder, which facilitates its use over a full working day.
- Increased furnace safety: Good knowledge of furnace/boiler condition and operating parameters can provide the information needed to avert catastrophic failures and prevent unscheduled shutdowns.

Licensing and classification

License information

Interchangeable lens version of the FLIR GF3XX series requires US Department of State License and will be subject to limitations on resale, except inside US. Allow a minimum of 90 days after application submittal for approval.

Imaging and optical data

IR resolution	320 × 240 pixels
Thermal sensitivity/NETD	<15 mK @ +30°C (+86°F)
Field of view (FOV) / Minimum focus distance	24° × 18° / 0.3 m (1.0 ft.)
Focal length	23 mm (0.89 in.)
F-number	1.5
Focus	Automatic (one touch) or manual (electric or on the lens)
Zoom	1–8× continuous, digital zoom
Digital image enhancement	Noise reduction filter

Detector data

Focal Plane Array (FPA) / Spectral range	Cooled InSb / 3.8–4.05 μm
Sensor cooling	Stirling Microcooler (FLIR MC-3)

Electronics and data rate

Full frame rate	60 Hz
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Image presentation

Display	Built-in widescreen, 4.3 in. LCD, 800 × 480 pixels
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Image presentation

Viewfinder	Built-in, tiltable OLED, 800 × 480 pixels
Automatic image adjustment	Continuous/manual; linear or histogram based
Manual image adjustment	Level/span
Image modes	IR-image, visual image

Measurement

Temperature range	-40°C to +1500°C (-40°F to +2732°F)
Accuracy	±1°C (±1.8°F) for temperature range (0°C, to +100°C, +32°F to +212°F) or ±2% of reading for temperature range (>+100°C, >+212°F)

Measurement analysis

Spotmeter	10
Area	5 boxes with max./min./average
Profile	1 live line (horizontal or vertical)
Difference temperature	Delta temperature between measurement functions or reference temperature
Reference temperature	Manually set or captured from any measurement function
Emissivity correction	Variable from 0.01 to 1.0 or selected from editable materials list
Measurement corrections	Reflected temperature, distance, atmospheric transmission, humidity, external optics

Set-up

Menu commands	Level, span Auto adjust continuous/manual/semi-automatic Zoom Palette Start/stop recording Store image Playback/recall image
Color palettes	Iron, Gray, Rainbow, Arctic, Lava, Rainbow HC
Set-up commands	1 programmable button, local adaptation of units, language, date and time formats

Storage of images

Storage media	Removable SD or SDHC memory card, two card slots
Image storage capacity	> 1200 images (JPEG) with post process capability per GB on memory card
Image storage mode	IR/visual images Visual image can automatically be associated with corresponding IR image
Periodic image storage	Every 10 seconds up to 24 hours
File formats	Standard JPEG, 14 bit measurement data included
GPS	Location data automatically added to every image from built-in GPS

Video recording in camera and video streaming

Radiometric IR-video recording	15 Hz direct to memory card
Non-radiometric IR-video recording	MPEG4 (up to 60 minutes/clip) to memory card. Visual image can automatically be associated with corresponding recording of non-radiometric IR-video.
Visual video recording	MPEG4 (25 minutes/clip) to memory card
Radiometric IR-video streaming	Full dynamic to PC using USB or WLAN
Non-radiometric IR-video streaming	RTP/MPEG4
Visual video streaming	MPEG-4 using WLAN (using Wi-Fi USB micro adapter) Uncompressed colorized video using USB

Digital camera

Built-in digital camera	3.2 Mpixel, auto focus, and two video lamps
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Laser pointer

Laser	Activated by dedicated button
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Data communication interfaces

WLAN	Peer to peer (ad-hoc) for iOS or infrastructure (network) for Android, using Wi-Fi USB micro adapter
USB	<ul style="list-style-type: none"> USB-A: Connect external USB device USB Mini-B: Data transfer to and from PC
USB, standard	USB Mini-B: 2.0 High Speed
Video out	Digital Video Output (image)

Power system

Battery type	Rechargeable Li Ion battery
Battery voltage	7.2 V
Battery capacity	4.4 Ah
Battery operating time	> 3 hours at 25°C (+68°F) and typical use
Charging system	In camera (AC adapter or 12 V from a vehicle) or 2-bay charger
Start-up time	Typically 7 min. @ 25°C (+77°F)

Environmental data

Operating temperature range	-20°C to +50°C (-4°F to +122°F)
Storage temperature range	-30°C to +60°C (-22°F to +140°F)
Humidity (operating and storage)	IEC 68-2-30/24 h 95% relative humidity +25°C to +40°C (+77°F to +104°F) (2 cycl)
EMC	<ul style="list-style-type: none"> EN61000-6-4 (Emission) EN61000-6-2 (Immunity) FCC 47 CFR Part 15 class A (Emission) EN 61 000-4-8, L5
Encapsulation	IP 54 (IEC 60529)
Bump	25 g (IEC 60068-2-29)
Vibration	2 g (IEC 60068-2-6)

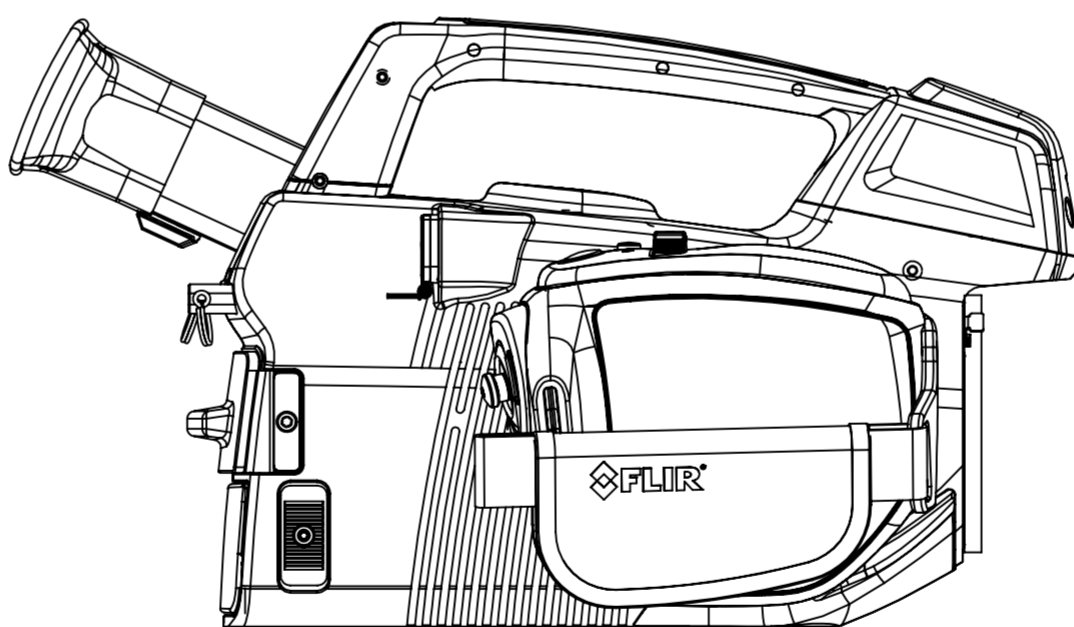
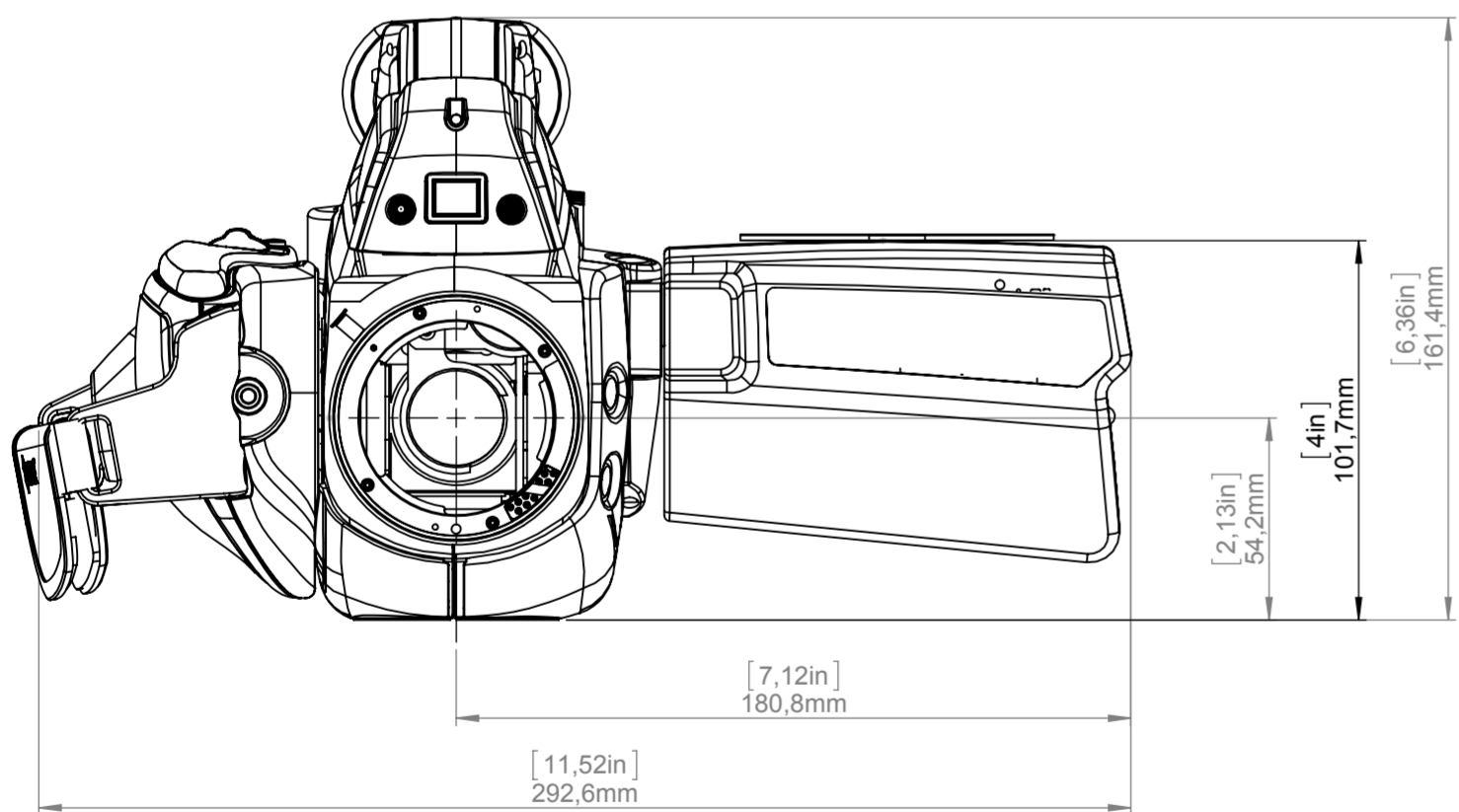
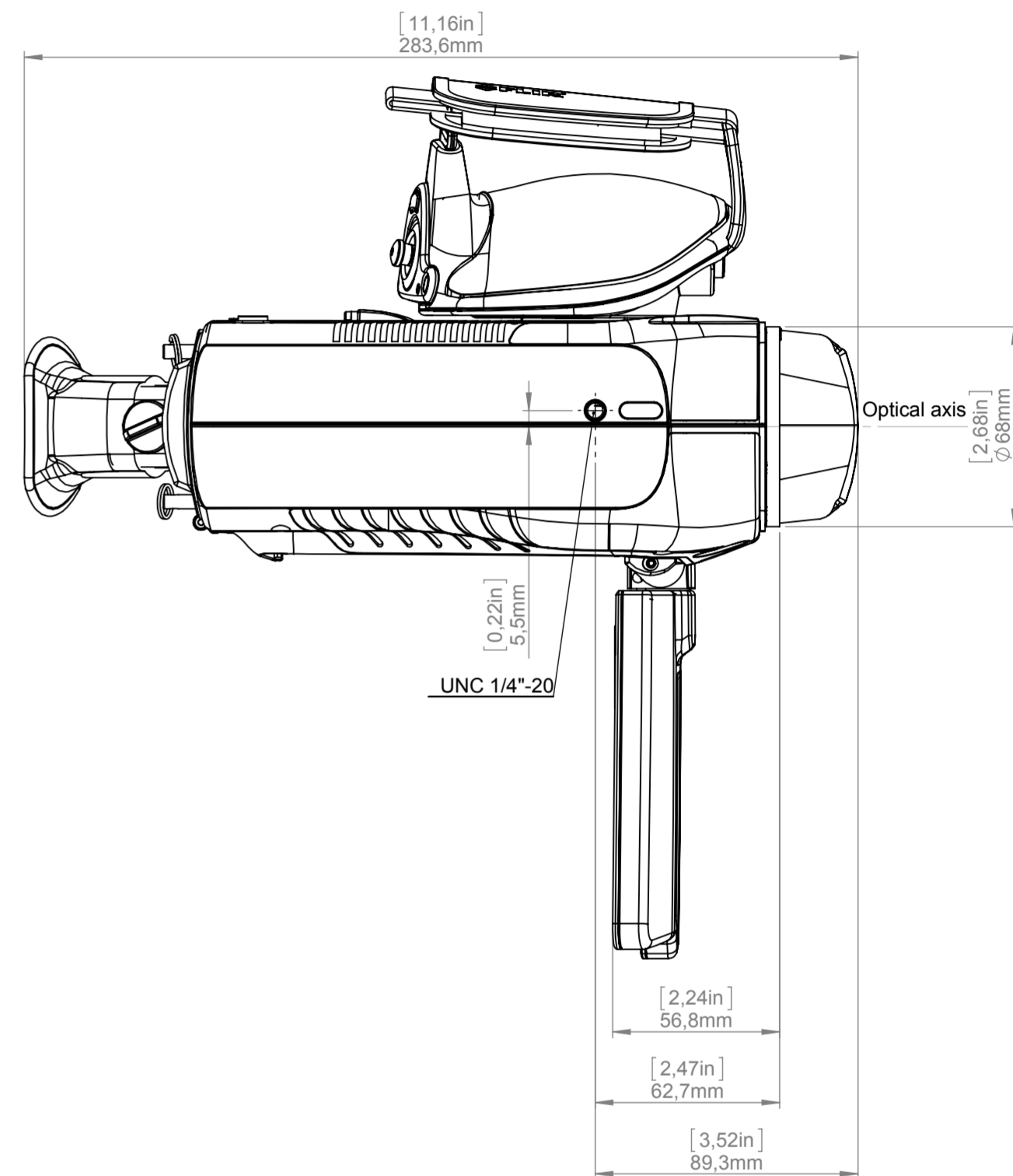
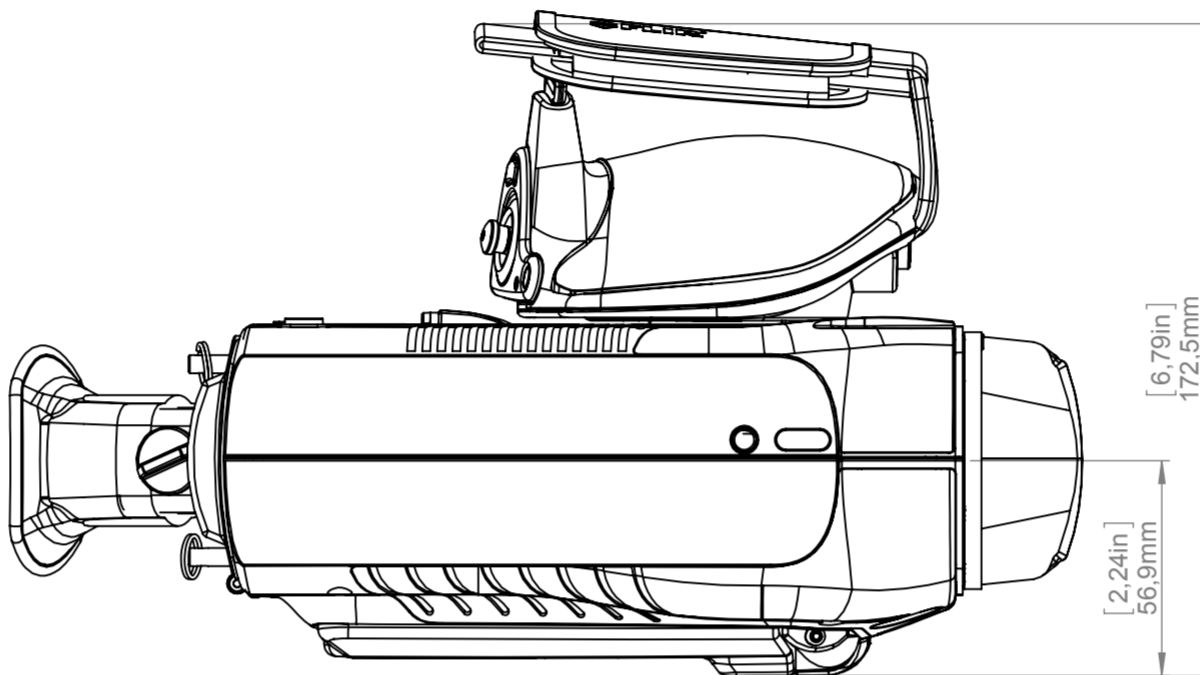
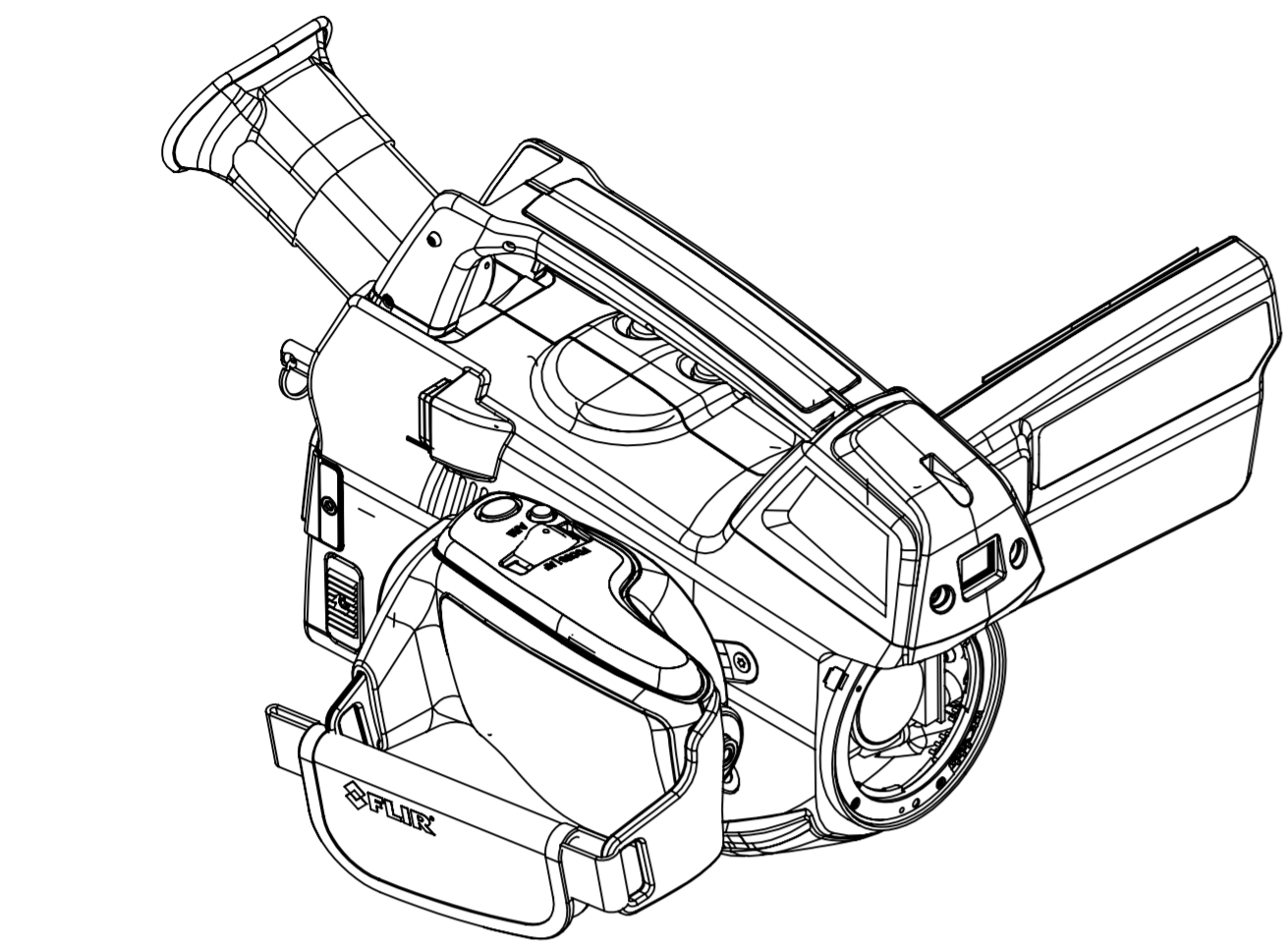
Physical data

Camera weight, incl. lens and battery	2.48 kg (5.47 lb.)
Cameras size, incl. lens (L x W x H)	306 x 169 x 161 mm (12.0 x 6.7 x 6.3 in.)
Tripod mounting	UNC ¼"-20

Shipping information

- Hard transport case
- Infrared camera with lens
- Battery charger
- Battery, 2 ea.
- Calibration certificate
- Downloads brochure
- FLIR Tools software
- HDMI-DVI cable
- HDMI-HDMI cable
- Heat shield
- Lens cap (2 ea.)
- Lens cap (mounted on lens)
- Memory card
- Memory card adapter
- Power supply, incl. multi-plugs
- Printed Getting Started Guide
- Printed Important Information Guide
- Registration card
- Service & training brochure
- Shoulder strap
- USB cable
- User documentation CD-ROM
- Wi-Fi USB micro adapter (depending on CE and FCC regulations regarding wireless equipment for your country)

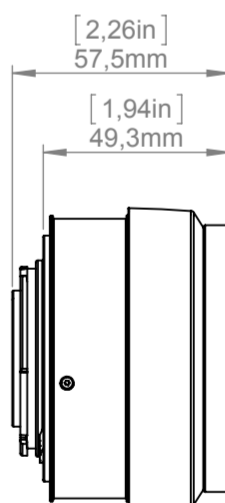
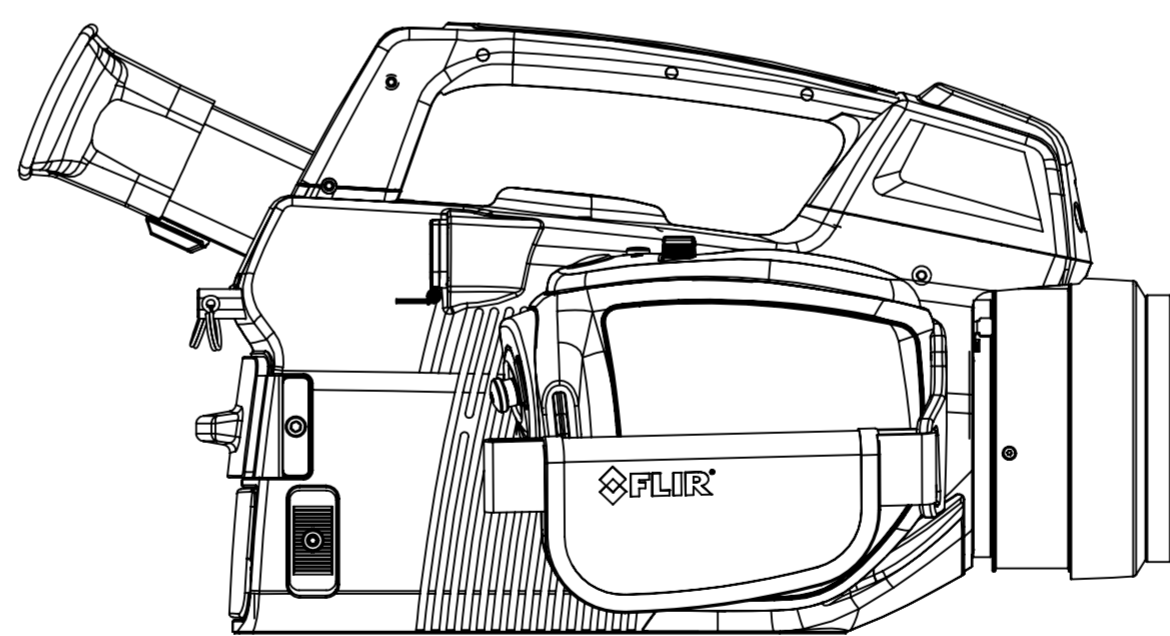
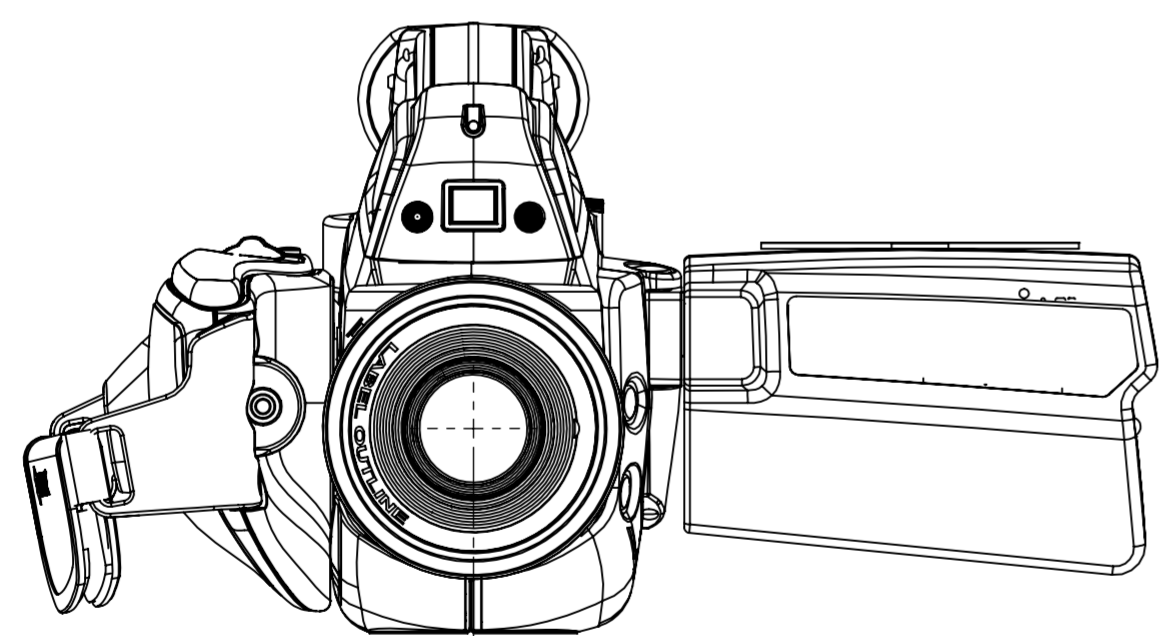
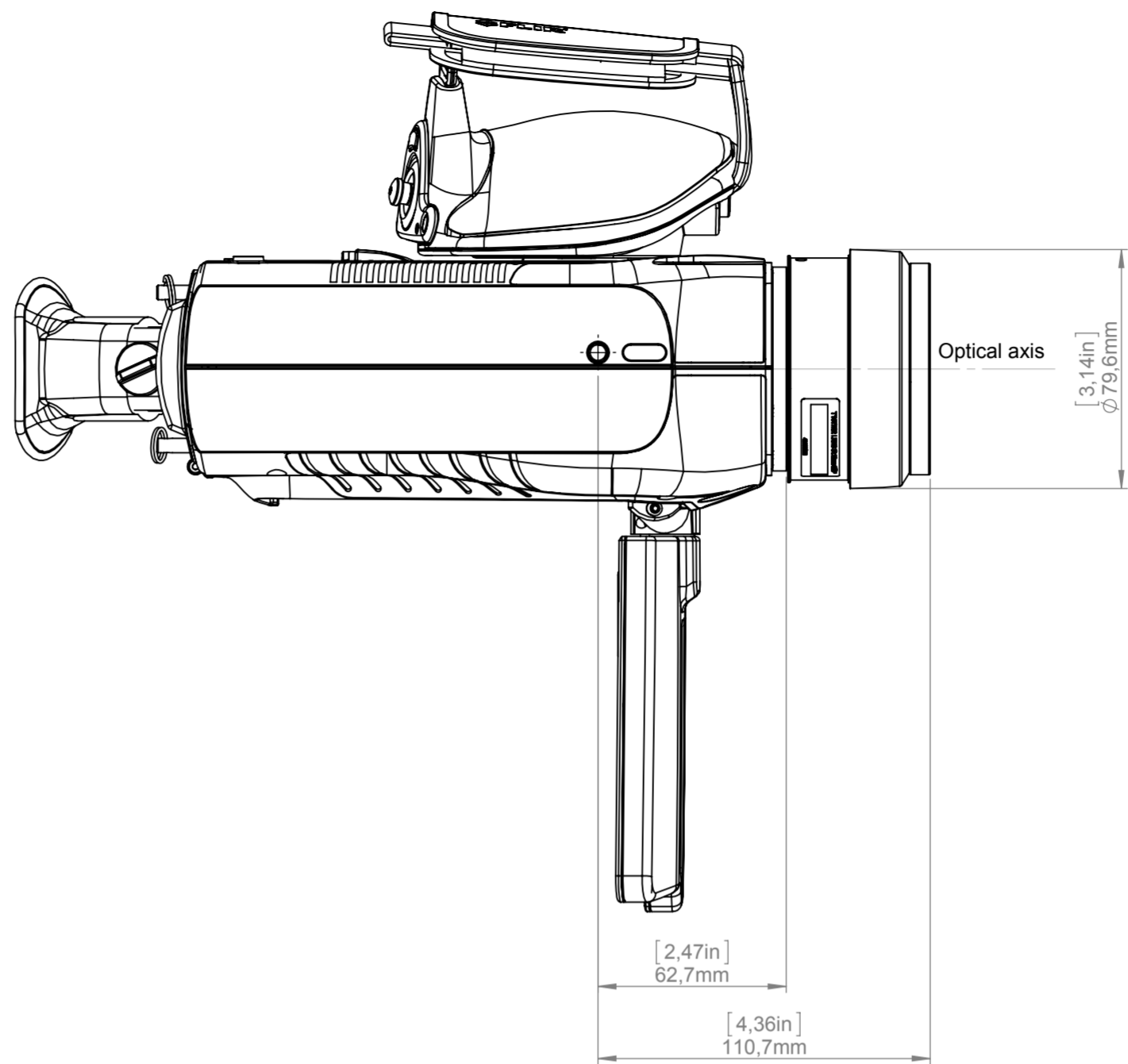
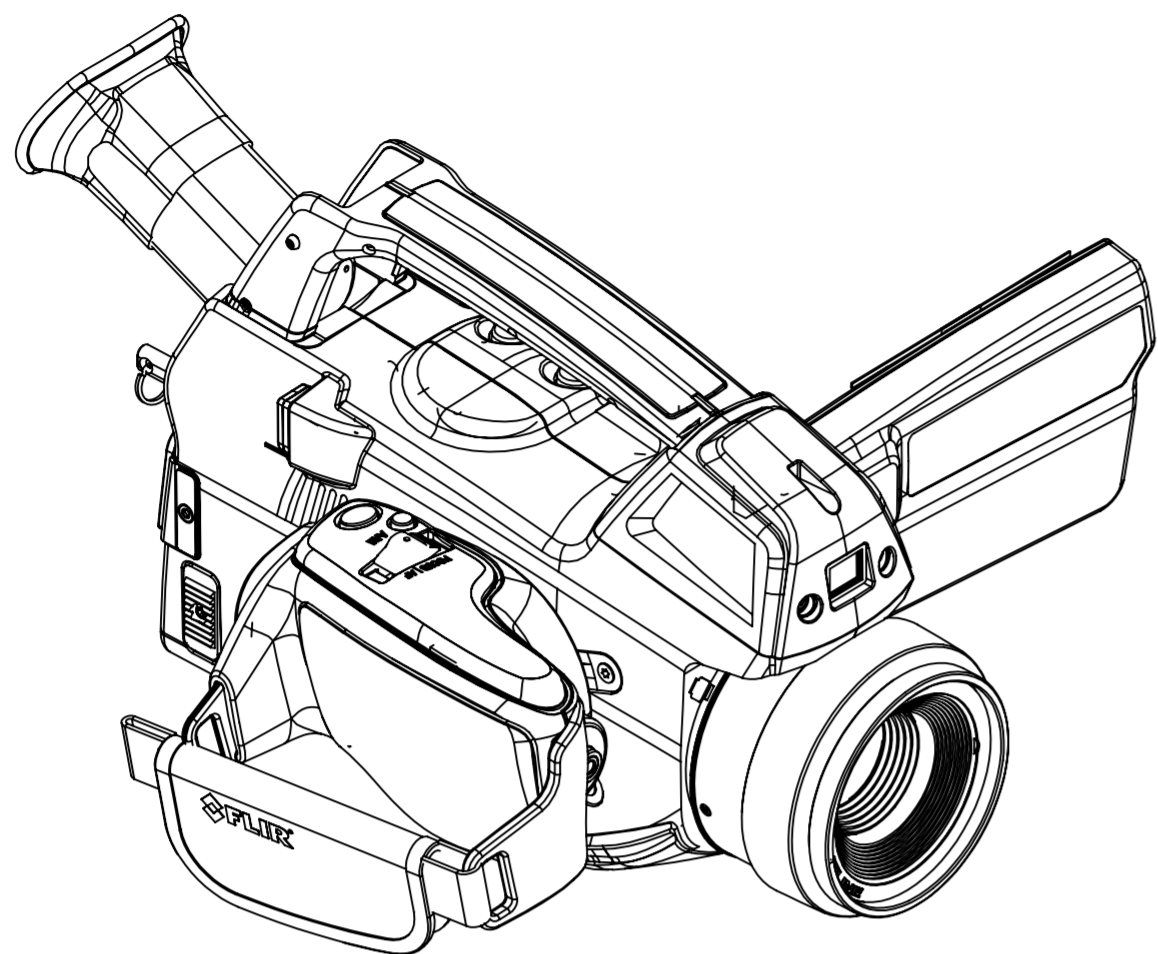
Camera housing



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Denomination			
Basic dimension FLIR GF3xx			Size A3 Scale 1:2 Drawing No. T127603
			Sheet 1(5) Size B

Camera with Lens IR f=23 mm (24°)
 Camera with Lens IR f=38 mm (14,5°)

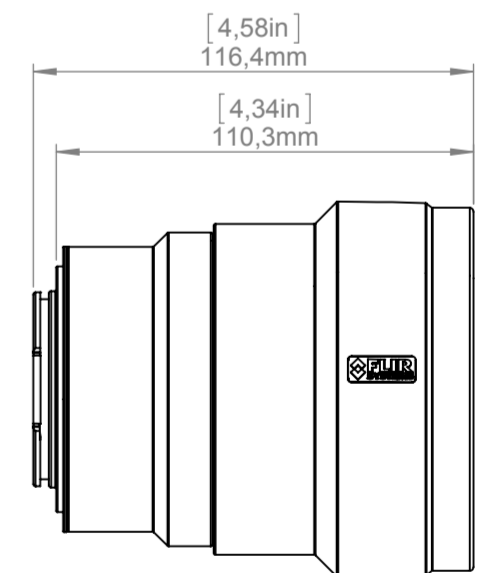
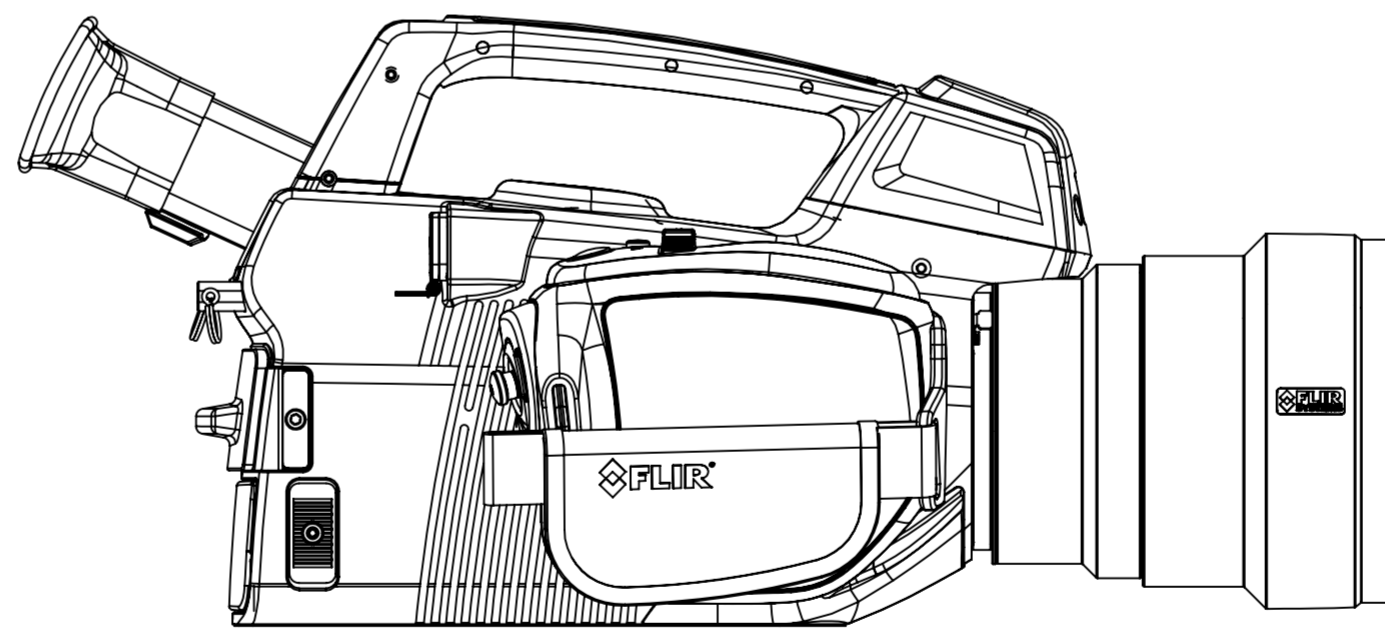
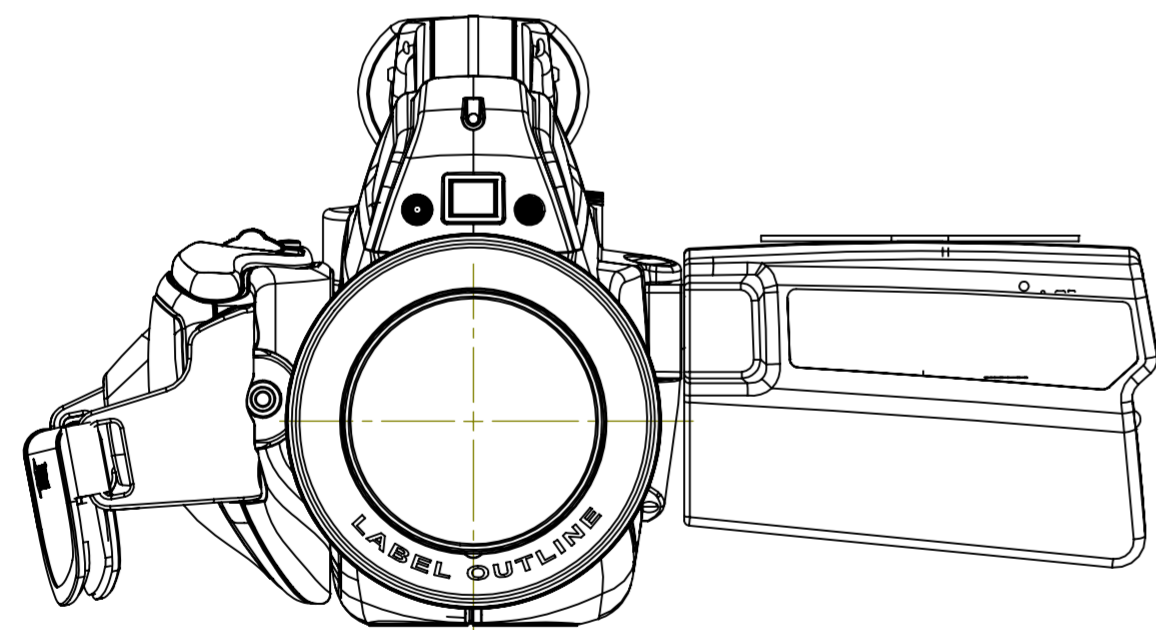
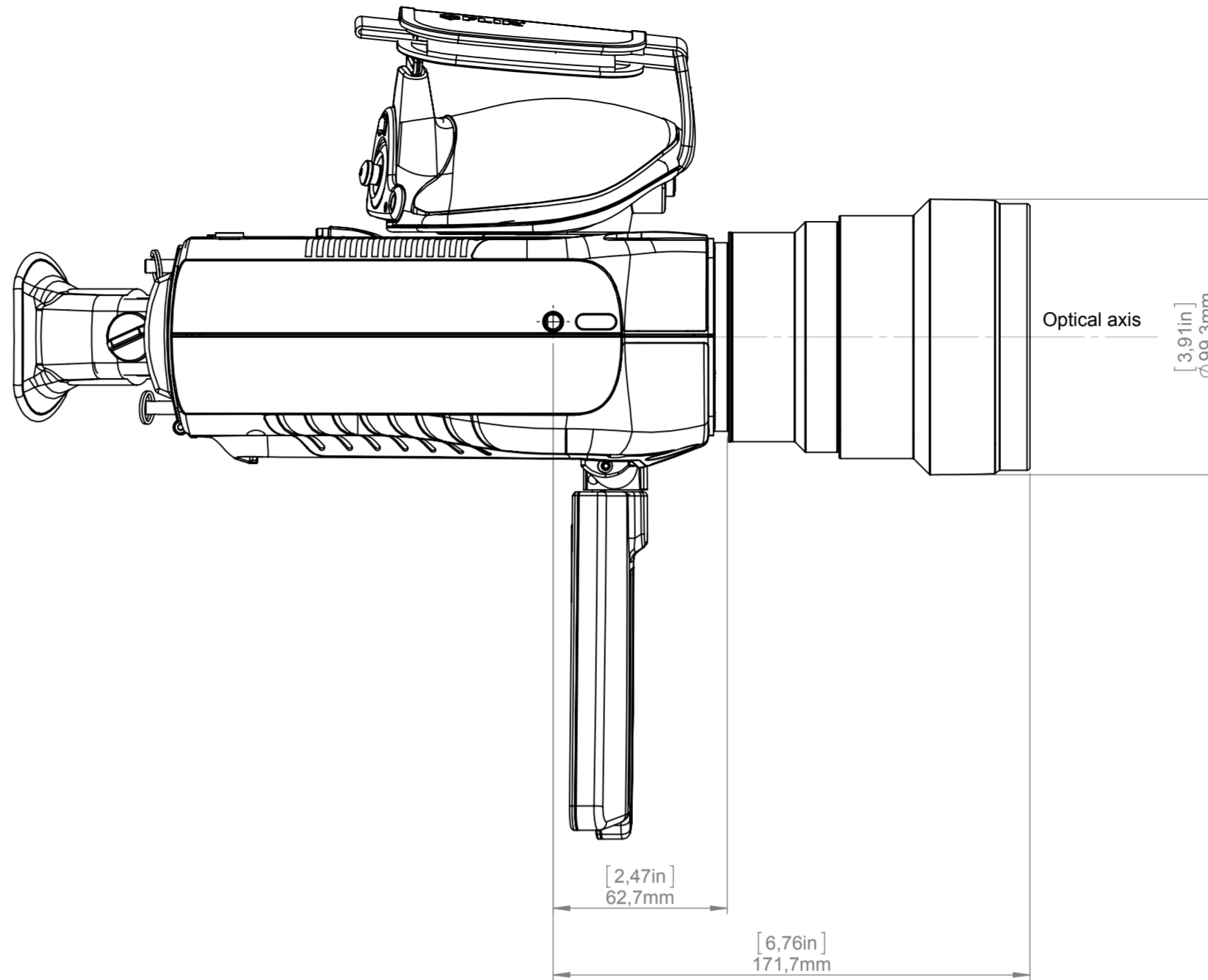
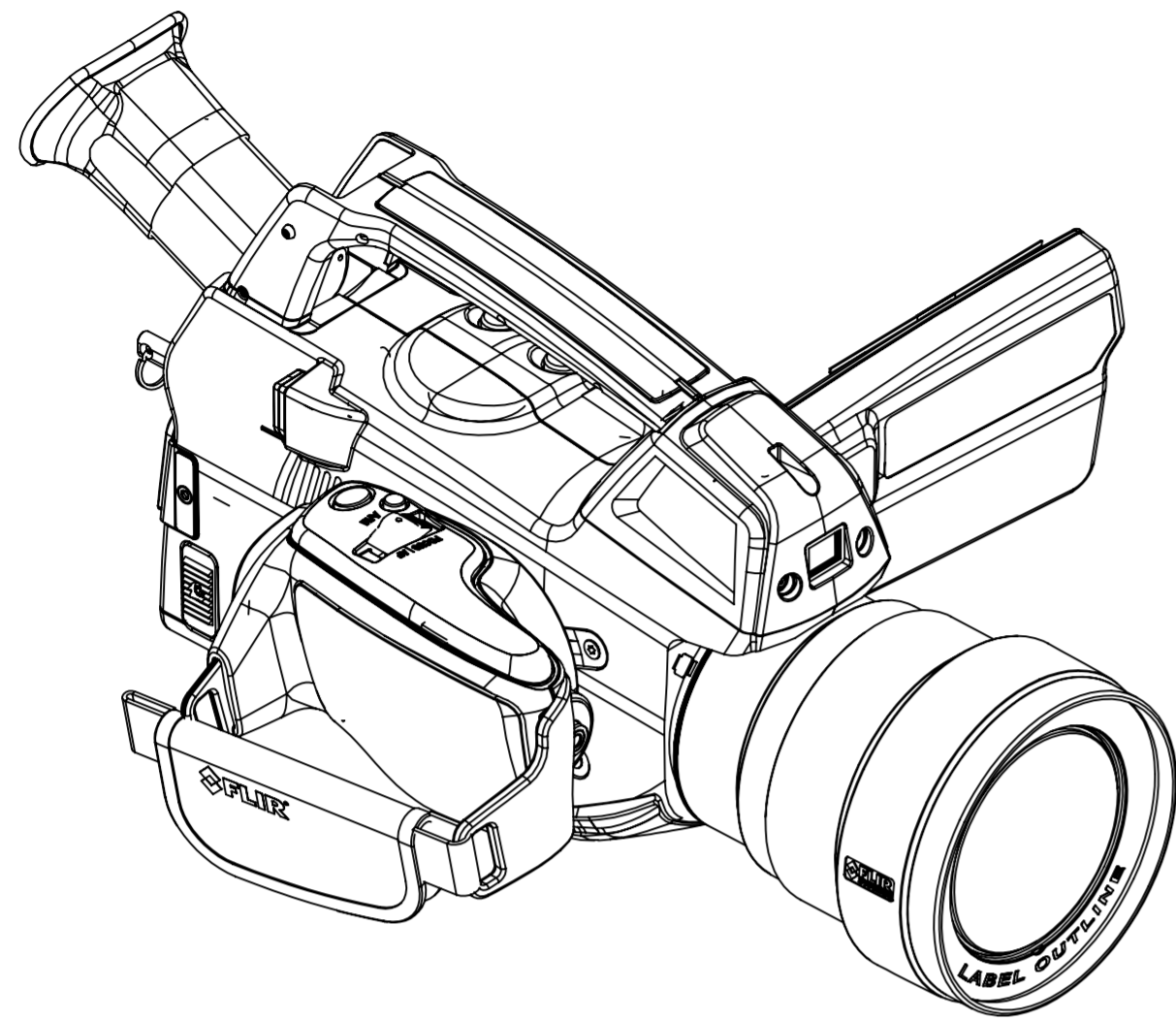


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For additional dimensions see page 1

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Camera with Lens IR f=92 mm (6°)

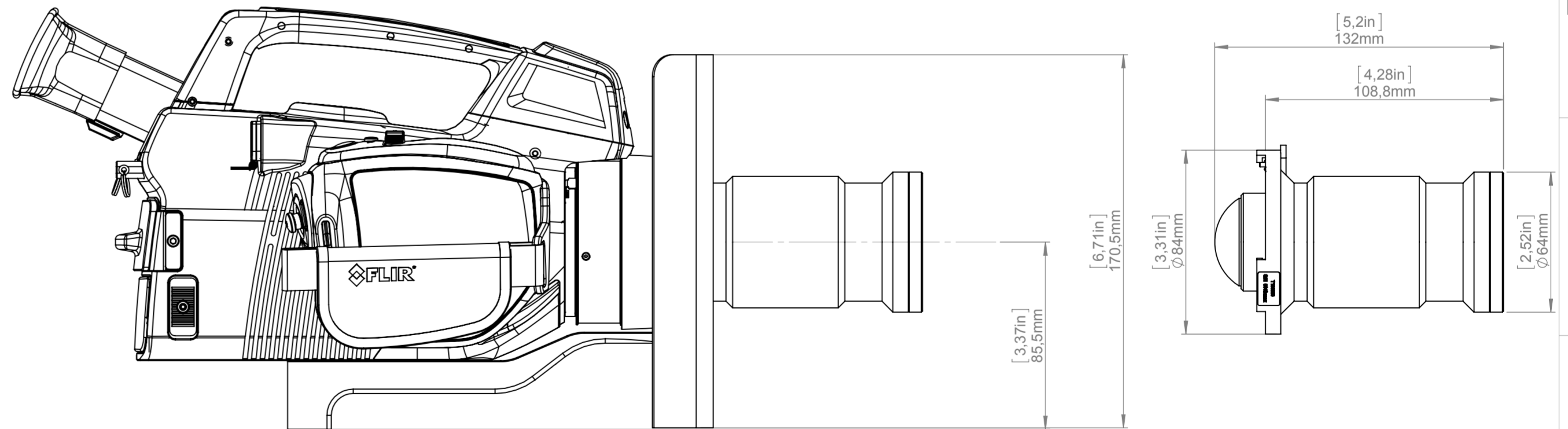
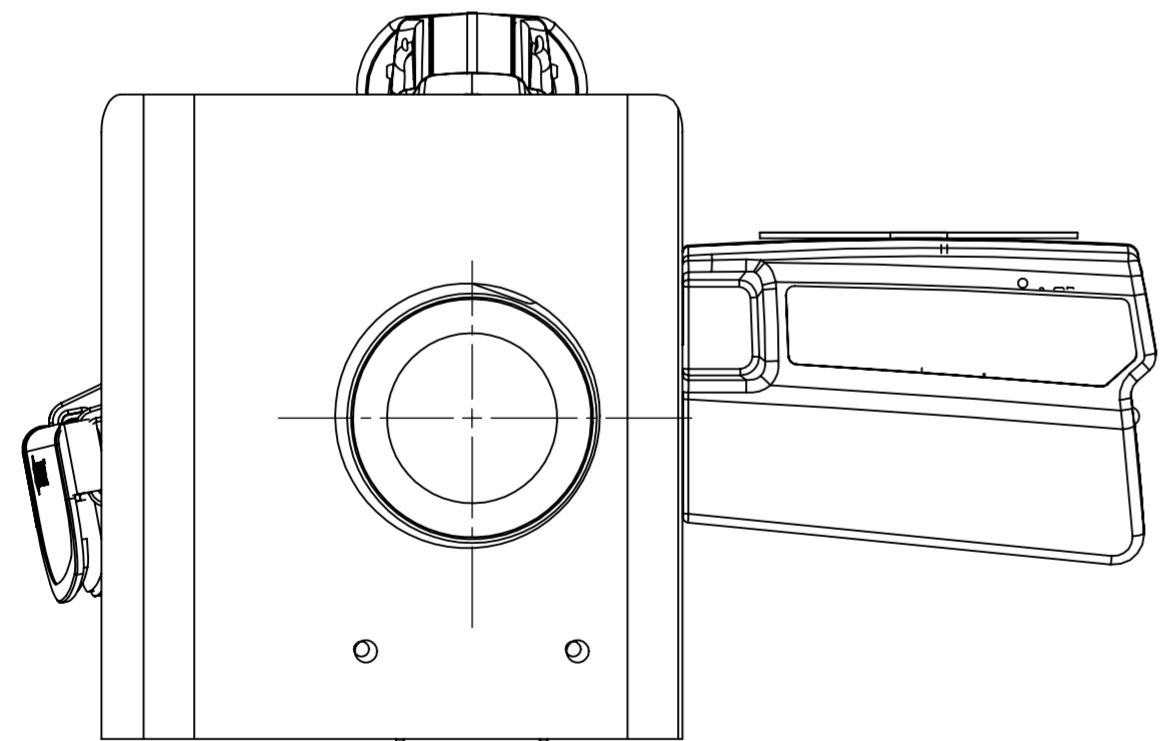
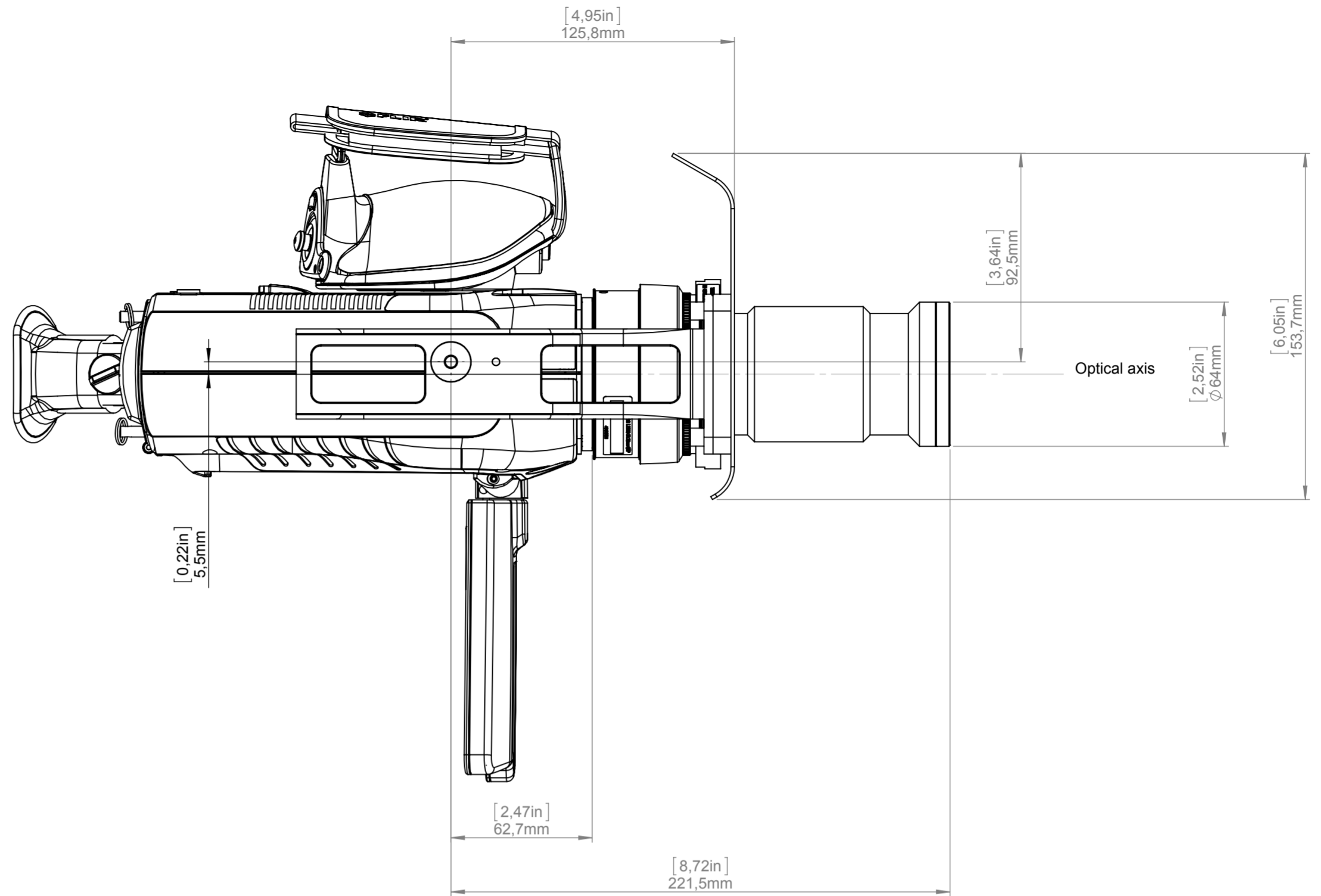
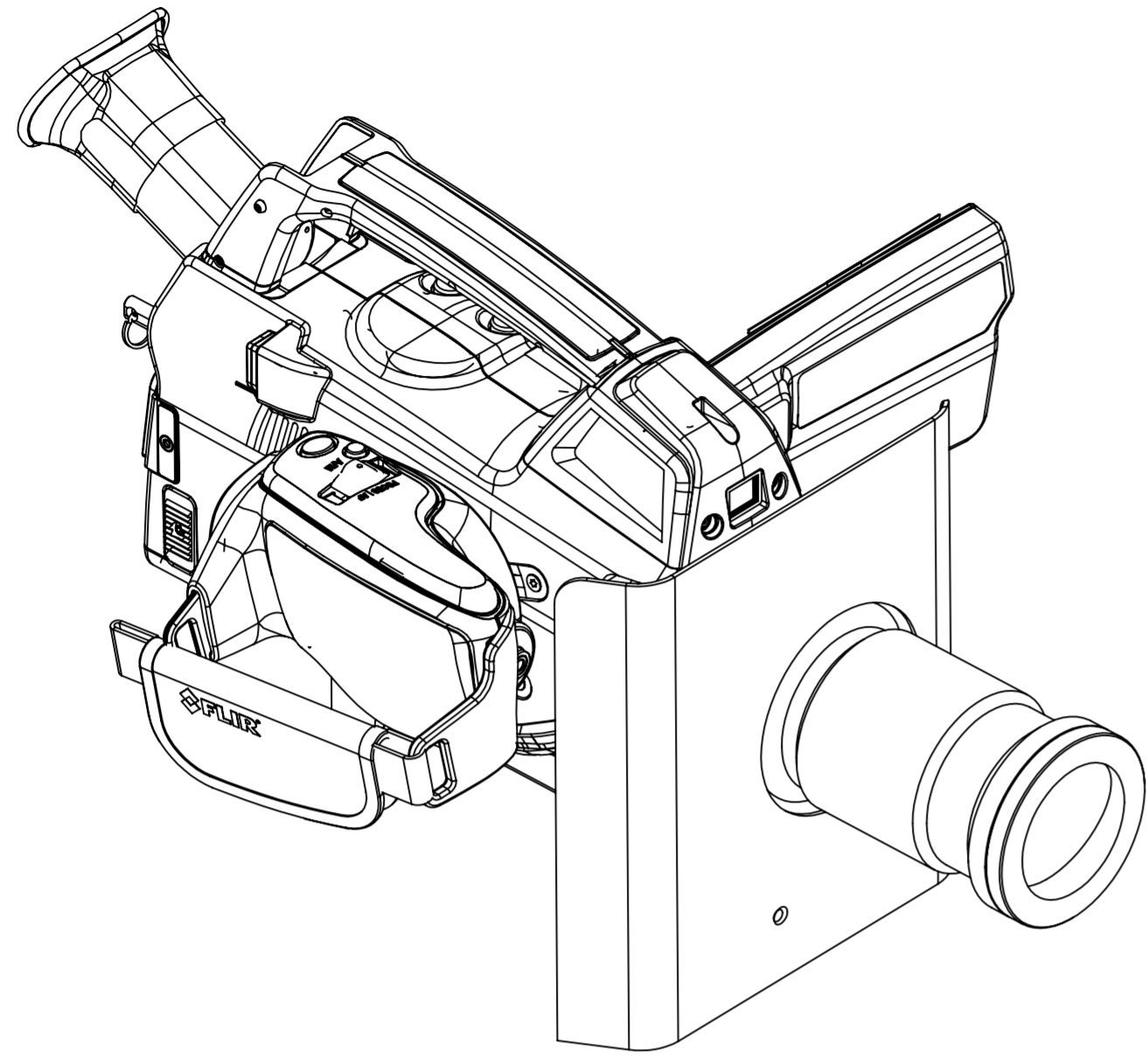


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Camera with Lens f=23mm and extender

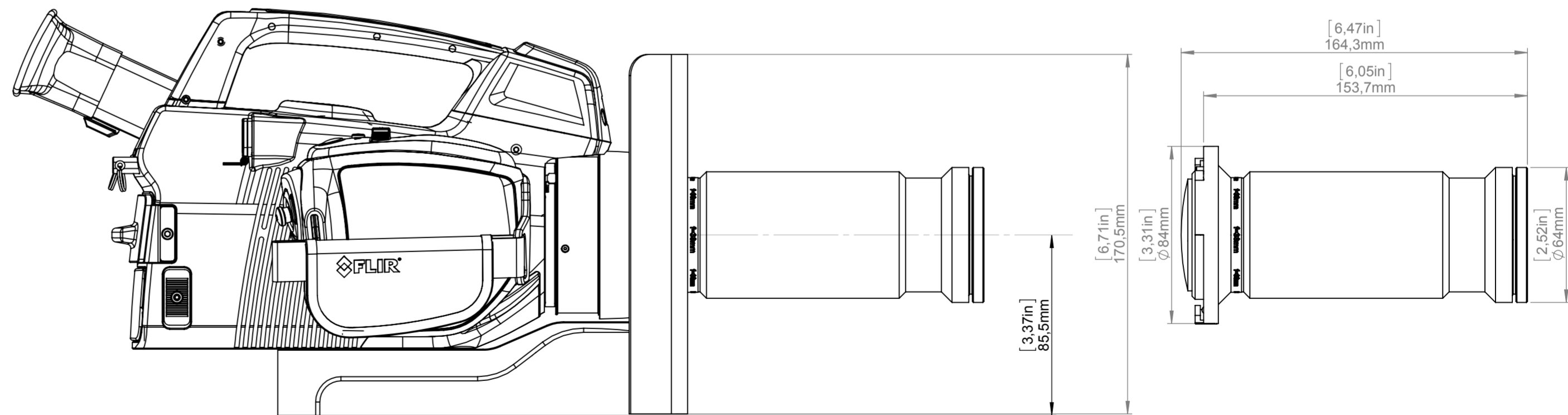
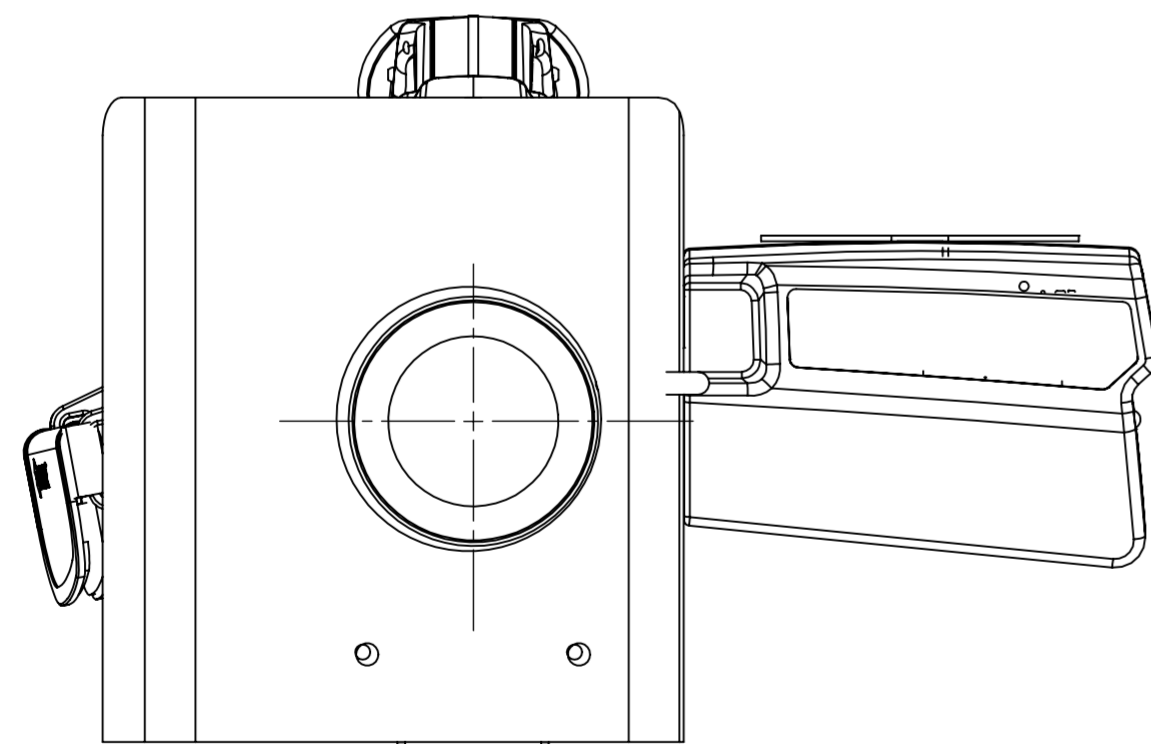
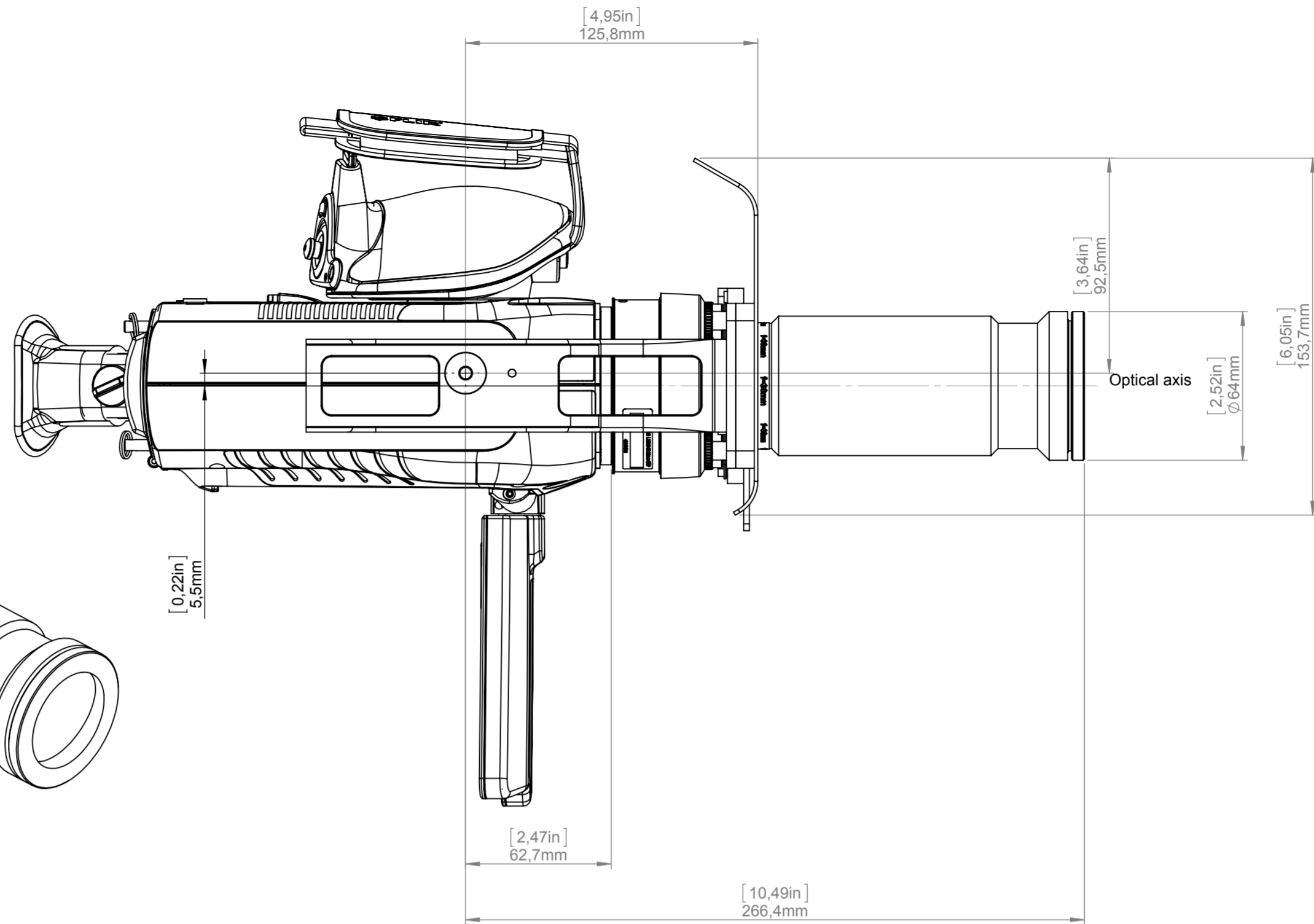
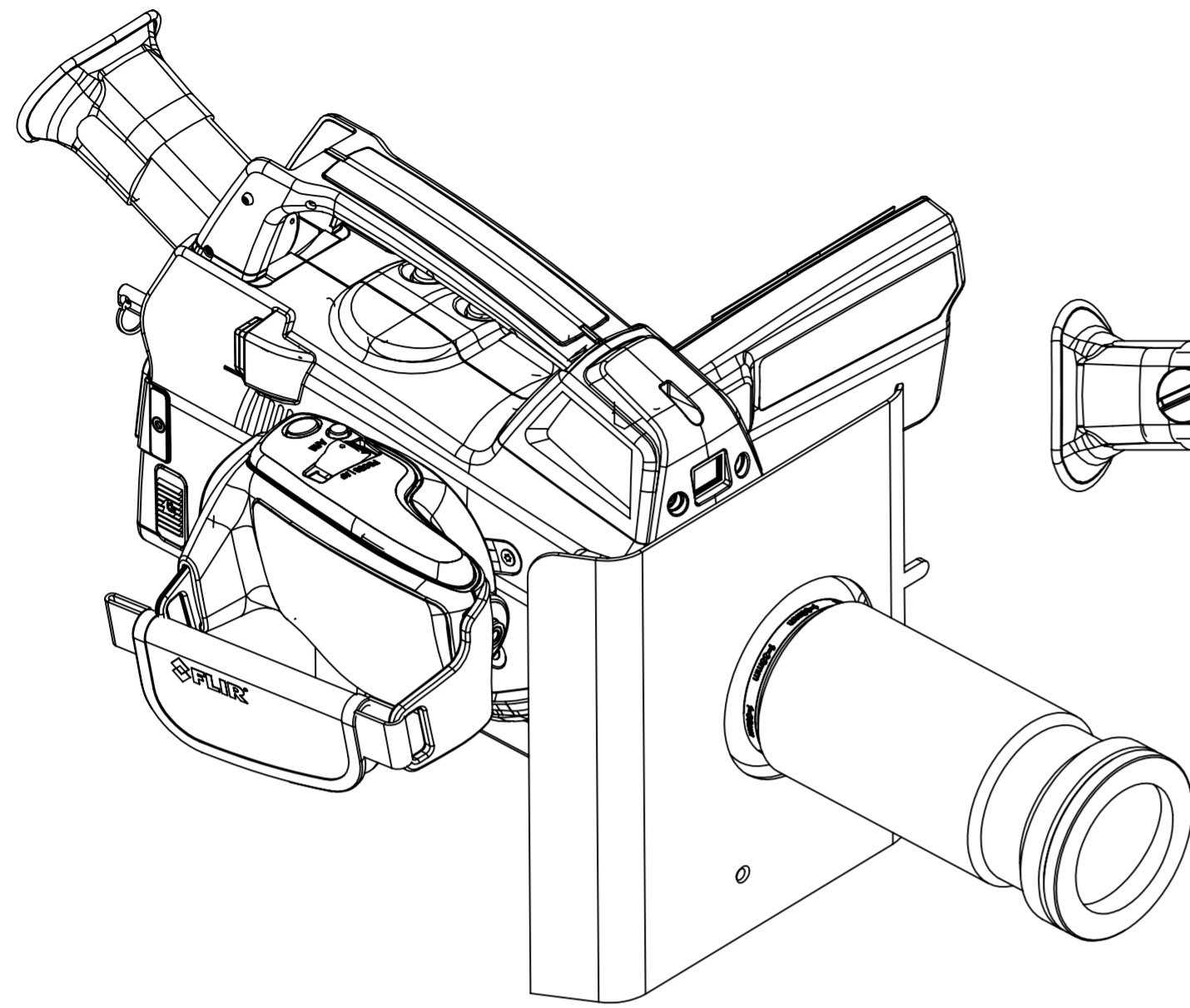


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Camera with Lens f=38mm and extender



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