FLIR VS70: Wired Articulation Camera Videoscope Combo

P/N: VS70-3

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Website

http://www.flir.com

Customer support

http://support.flir.com

Disclaimer

Specifications subject to change without further notice. Camera models and accessories subject to regional market considerations. License procedures may apply. Products described herein may be subject to US Export Regulations. Please refer to exportquestions@flir.com with any questions.

The Articulation Combo (Wired), Long Focus kit includes the VS70, a wired handset, and a dedicated 6 mm long-focus camera with two-way articulation on a 1 m semi-rigid cable. Long focus provides an increased viewing distance, and articulation provides greater internal camera control.

ERP description	Articulation Combo (Wired), Long Focus
Kit contents	VS70 + VSA2-1

VS70 main unit general data	
LCD screen	145 mm (5.7″), 135 mm (5.3″) viewable
Active matrix	Active matrix, 640 × 480 pixels
Memory type	SD card 4 GB included (32 GB maximum)
Compression format	MPEG4
Still image format	JPEG (640 × 480 pixels)
Video recording format	AVI (640 × 480 pixels)
Video output format	NTSC and PAL, frame rate 30 fps
Multi-language menu	Yes
Receiver frequency	2.4 GHz
Receiver sensitivity	–87 dBm (SNR = 42 dB, F_{mod} = 15)
Data/video	Mini USB 1.1 and AV out
Audio	Earphone plug, 3.5 mm, 4 rings
Speaker	15 mm, 32 Ω, 20 Hz to 20 kHz
Microphone	Boom microphone 6 mm × 5 mm (0.24″ × 0.2″), total length 10 cm (3.9″), Wire length 1.2 m (3.9′)
Tripod mount	On rear, accepts standard tripod screw
Certifications	FCC, CE
Warranty	https://www.flir.com/testwarranty

VS70 main unit power system	
Battery	3.7 V rechargeable lithium polymer
Battery life	6–8 hours
Power adapter	100–240 V input/5 V DC output
Battery status indication	Progressive with auto power off (APO)

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VS70 main unit environmental data	
IP rating	67
Drop test	2 m
Operating temperature	–10 to 60°C (14 to 140°F)
Operating humidity	80% maximum
Storage temperature	–40 to 80°C (–40 to 176°F)

VS70 main unit physical data	
Product weight	1.57 kg (3.46 lb.), including batteries
Product dimensions	241 mm × 178 mm × 70 mm (9.5″ ×7″ × 2.75″)
Material	PC-ABS, rubber hand grip, nylon strap
Color	Gray and black

Camera VSA2-1 (two-way 6 mm articulated camera with 1 m probe)	
Diameter	6 mm
Resolution	VGA (640 × 480 pixels)
Probe length	1 m
Focal length	65 mm to infinity
Field of view	56°
Articulation	Two-way 240 ± 20° manual tip articulation
Integrated handset	Yes
Wireless capabilities	No
Compatible main unit	VS70
Compatible wireless handset	N/A
Compatible detachable cameras	N/A
Warranty	2 years
Imaging sensor	CMOS
Video format	NTSC
Brightness control	Manual with variable options
Lamp type	LED
Operating temperature	–10 to 50°C (14 to 122°F)
Power requirements	N/A

Shipping information	
Packaging type	Brown shipping box over hard case
Packaging contents	VS70 main unit, VSA2-1 (two-way 6 mm articulated camera with 1 m probe), VSA-60 (6 mm camera accessories: mirror, anti-snag tip, magnet), patch cable, 4 GB SD card, USB/video out cables, power adapters, vehicle charger, headset, neck strap, cleaning kit, VS-HC (VS70 hard case with camera storage), and user manual (printed English and translated on CD)
Packaging weight	7.5 kg
Packaging dimensions (H × W × L)	53 cm × 43.5 cm × 22 cm
Carton weight	16 kg
Carton dimensions (H × W × L)	55 cm × 46.5 cm × 46 cm
Carton quantity	2

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Shipping information	
EAN-13	0793950400746
UPC-12	793950400746
Country of origin	TW
Tariff code	9013809000

Technical support	
Website	http://support.flir.com

Documentation	
Manual Languages (on CD and web)	Czech, Danish, German, Greece, English (US), Spanish (Spain), Finnish, French (France), Hungarian, Italian, Japanese, Korean, Bokmal Norwegian (Norway), Dutch Flemish (Netherlands), Polish, Portuguese (Portugal), Russian, Swedish, Chinese, Chinese (Taiwan)

Suggested cameras and accessories	
VST	Wireless handset
VS-2PC	2 m patch cable
VSA2-1-W	Wireless two-way 6 mm articulated camera with 1 m probe
VSC65-17S	17″ stainless steel rigid probe

Compatible cameras full list	
VSA2-2M-W	Wireless two-way 6 mm articulated camera with 2 m probe via SF
VSA2-2-W	Wireless two-way 6 mm articulated camera with 2 m probe
VSA2-1M-W	Wireless two-way 6 mm articulated camera with 1 m probe via SF
VSA2-2	Two-way 6 mm articulated camera with 2 m probe
VSA2-2M	Two-way 6 mm articulated camera with 2 m probe via SF
VSA2-1	Two-way 6 mm articulated camera with 1 m probe
VSA2-1M	Two-way 6 mm articulated camera with 1 m probe via SF
VSC2-58-1FM	Two-channel Camera, 5.8 mm diameter 1 m probe
VSC58-30M	5.8 mm camera with 30 m FG probe—QVGA via SF
VSC58-20M	5.8 mm camera with 20 m FG probe—QVGA via SF
VSS-30	30 m plumbing spool
VSS-20	20 m plumbing spool
VSC28	28 mm camera head for spool
VSC25	25 mm camera head for spool
VS-BR25	Centering brush for VS70 camera probes
VS-BR28	Centering brush for VS70 camera probes
VS-RB	Replacement centering brush
VSC65-12S	12″ stainless steel rigid probe
VSC41-2RM	4.1 mm camera with 2 m SR probe—QVGA via SF

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Compatible cameras full list	
VSC39-1FM	3.9 mm camera with 1 m flex probe—QVGA via SF
VSC58-2R	5.8 mm camera with 2 m SR probe—VGA via LF
VSC58-2RM	5.8 mm camera with 2 m SR probe—VGA via SF
VSC58-1R	5.8 mm camera with 1 m SR probe—VGA via LF
VSC58-1RM	5.8 mm camera with 1 m SR probe—VGA via SF
VSC80-2R	8 mm camera with 2 m SR probe—VGA via LF
VSC80-1R	8 mm camera with 1 m SR probe—VGA via LF

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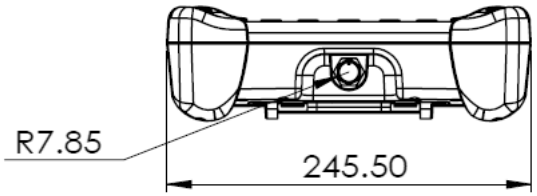

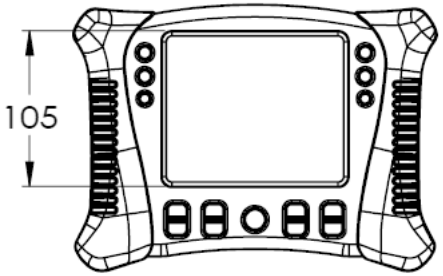

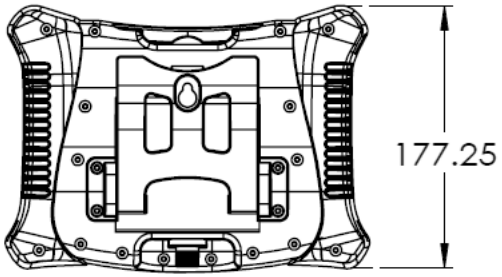

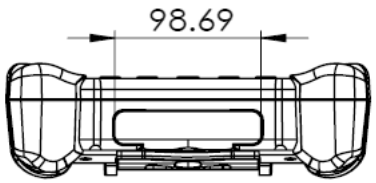

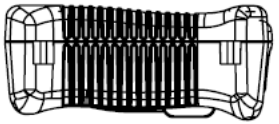

Modified Date	Modified By
Monday, April 21, 2014	T&M Engineering
Description	
FLIR VS70, Units in mm	

City Bright Co., LTD.

京 澔 股 份 有 限 公 司

Material Safety Data Sheet

City Bright Co., LTD **MSDS No: 20190115001**

Product Name: Lithium Polymer Batteries pack

Issued and Revised Date: 2019-1-15

Section 1 Chemical Product and Company Identification

Product information

Model name: CB-556192
Norminal Voltage：3.7V
Rated Capacity:7600mAh
Watt-hour Rating:28.12Wh
Supplier Identification:

City Bright Co.,LTD
Add: 4F., No.12,Aly.10, Ln. 321,XinMing Rd., Neihu Dist., Taipei City 11471
Taiwan R.O.
TEL: 886-2-27901380 FAX: 886-2-27900203

Section 2 Composition/Information on Ingredients

INGREDIENTS	Weight Percentage/%	CAS No.
Cobaltic lithium oxide	35.05%	12190-79-3
Graphite powder	15.98%	7782-42-5
Rubber	10.36%	69028-37-1
Carbon black	0.79%	1333-86-4
Styrene-butadiene rubber（SBR）	0.71%	61789-96-6
Polypropylene	1.74%	9003-07-0
Polyethylene	1.27%	9002-88-4
Lithium hexafluorophosphate	1.27%	21324-40-3
Ethylene carbonate（EC）	6.34%	96-49-1
Diethyl carbonate（DEC）	4.76%	105-58-8
Propylene carbonate（PC）	1.11%	108-32-7
Polycaprolactam （NYLON 6）	1.11%	25038-54-4
Copper	8.39%	7440-50-8
Aluminium	11.12%	7429-90-5

Section 3 Hazards Identification

The lithium ion batteries are not hazardous when used according to the instructions of manufacturer under normal conditions. In case of abuse, there's a risk of explode, rupture,fire, heat, leakage of internal components, which could cause casualty loss. Abuses include but not limited to the following cases: charge for a long time, short circuit, put into fire, whack with hard object, puncture with acute object, crush, break.

Section 4 First-aid Measures

The lithium batteries are not hazardous with eye and skin contact under normal circumstance. In case of fire or rupture, the leakage of internal hazardous substance and formation of hazardous substance would occur, take the following measures if contact with it：

Eye :Immediately flush with plenty of clean water for 15 minutes, seek medical assistance;

Skin: Immediately flush with plenty of clean water for 15 minutes; seek medical assistance if severe;

Inhalation: If inhaled, remove to fresh air immediately, seek medical assistance, and ventilate the contaminated area.

Ingestion: Rinse mouth with clean water immediately, activate vomit under the direction of expert, and seek medical assistance.

Section 5 Fire-fighting Measures

Extinguish with plenty of water, dry powder extinguishers, sands, earth. Combustion products and decomposed products by contact of water or air with internal substance include: carbon monoxide, carbon dioxide, hydrogen fluoride, phosphorus fluoride.

Section 6 Accidental Release Measures

When leakage of batteries happens, liquid could be absorbed with sands, earth or other inert substance, and the contaminated area should be ventilated meantime.

Section 7 Handling and Storage

Don’t handle and store batteries with metalwork. Store and use far away from heat, sparks, open flame, or any other ignition source, and under room temperature (<30℃) in ventilating and dehumidifying environments.

Section 8 Exposure Controls/Personal Protection

There is no need for protect under normal conditions. In engineering aspect, ventilation equipment should be installed. Gas mask, blinkers, gloves enduring chemical erosion and exposure suit are required when dealing with fire and leakage.

Section 9 Physical and Chemical Properties

Batteries are not single chemical material; there are no specific physical and chemical properties such as melting point and boiling point.

Main purpose of lithium batteries: used in portable and digital products.

Section 10 Stability and Reactivity

Batteries are safe under normal conditions. The following substance might appear after catching fire or leakage: organic carbonate, hydrogen fluoride, carbon monoxide,carbon dioxide, phosphorus fluoride.

Section 11 Toxicological Information

Batteries are not hazardous when used properly. If the batteries catch fire or the internal substance leaks, combustion products and decomposed products might have irritation and toxicity to skin, eye and respiratory systems. Toxicity data of some substance are listed following:

Hydrogen fluoride

Extremely toxic. May be fatal if inhaled or ingested. Readily absorbed through the skin contact may be fatal. Possible mutagen. LCLo: 50 ppm/30m (human beings)，LC50：1276 ppm/1h （rats） 。

Carbon and graphite
Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.
Causes chronic damage to upper respiratory tract and cardiovascular system.
Copper: Dust may cause respiratory irritation.LD50: 3.5 mg kg-1(mouse).
Aluminium: There is no hazard.

Section 12 Ecological Information

There is no influence to ecology and environment when used properly.

Section 13 Disposal

Deserted batteries couldn't be treated as ordinary trash. Be put to garbage box which recycle batteries after being placed into plastic bags or be dealt as special trash. Couldn't be thrown into fire or placed in high temperature. Couldn't be dissected, pierced, crushed or treated similarly. The package and plastic box which contain batteries could be treated as ordinary trash. Best way is recycling.

Section 14 Transport Information

For the international transport of lithium batteries, they must comply with these regulations: the International Maritime Dangerous Goods (IMDG) Code by International Maritime Organization (IMO), Dangerous Goods Regulations (DGR) by International Air Transport Association (IATA) and Technical Instructions for the Safe Transport of Dangerous Goods by Air (TI) by International Civil Aviation Organization (ICAO). These regulations are based on the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria.

Lithium batteries which meet the requirements of UN38.3 (UN Manual of Tests and Criteria, Part III, subsection 38.3) could be transported by air and by sea as ordinary goods, otherwise should be transported according to Class 9, Packing Group 1 hazardous goods. The Li-ion Battery (OP16HDVR) has passed the test UN38.3.

According to UN classification: However this product's shipping name is "lithium ion batteries"(or "Lithium ion Batteries packed with equipment" or "Lithium ion Batteries contained in equipment"), it is not recognized as "DANGEROUS GOODS" when its transport condition accords with "packing instruction 965 section II of IATA-DGR"(or "Packing instruction 966 section II" or "Packing instruction 967 section II") or "special provision 188 of IMO-IMDG Code".

1. For lithium ion batteries, UN ID number is 3480. For lithium ion batteries contained in equipment or lithium ion batteries packed with equipment, UN ID number is 3481.

2. The consignment should be fully described by proper shipping name and packed, marked and in proper condition for carriage by air. The consignment is not classified as dangerous under the current edition of the IATA 59th Effective 15 January 2019, Dangerous goods regulation and all applicable carrier and government regulations.

3. For transported by air, Lithium-ion Cells/Batteries shipped as "Not Restricted" Cargo: Must comply with Part II of PI965-PI967 accordingly; For cells, the Watt-hour rating should not be more than 20Wh; For batteries, the Watt-hour rating should not be more than 100Wh. Watt- hour rating must be marked on the outside of the battery case .

4. Each consignment must be accompanied with a document such as an air waybill with an indication. For those Lithium ion cells/ batteries contained in equipment, the equipment must be equipped with an effective means of preventing accidental activation. The telephone number for additional information for City Bright Co., Ltd battery is (886) 2-2790-1380.

5. Quantity per package shall not exceed 10 kg.

6. Each package must be capable of withstanding a 1.2m drop test in any orientation without damage of cells or batteries contained therein.

7. Lithium batteries which meet the requirements of A154 could be transported by air, and the batteries meet these requirements.(A154 Lithium batteries identified by the as being defective for safety reasons, or that have been damaged, that have the potential of producing a dangerous evolution of heat, fire or short circuit are forbidden for transport.)

8. Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to short circuit.

9. Transport condition should accord with “special provision 188 of IMO-IMDG Code”.

10. Conclusion.

No	ITEMS	RESULT	REMARKS
1	Altitude simulation	Pass	Test 1 to 5 must be conducted in sequence on the same cell or battery
2	Thermal test	Pass	
3	Vibration	Pass	
4	Shock	Pass	
5	External short circuit	Pass	
6	Impact	Pass	
7	Overcharge	Pass	Only battery do need this test item
8	Forced Discharge	Pass	

Section 15 Regulatory Information

OSHA hazard communication standard (29 CFR 1910.1200)
_____ hazardous √ Non-hazardous

Section 16 Other Information

This information comes from reliable sources, but no warranty is made to the completeness and accuracy of information contained. City Bright Co., Ltd doesn’t assume responsibility for any damage or loss because of misuse of batteries. Users should grasp the correct use method and be responsible for the use of batteries.

For more information contact:
Vic Liu
Tech. Dept Manager

Address: 4F., No.12,Aly.10, Ln. 321,XinMing Rd., Neihu Dist., Taipei City 11471 Taiwan R.O.C

Tel: 886-2-27901380
Fax: 886-2-27900203
URL: www.ncity.com.tw
E-mail: market@ncity.com.tw

UN38.3 Test Report

UN38.3 检测报告

Applicant's name 委托方名称	TAIWAN HSINYU ENTERPRISE LTD. 臺灣芯宇實業有限公司
Applicant's Address 委托方地址	3F., No.298, Sec. 2, Jianguo Rd., Toufen City, Miaoli County 35149, Taiwan 35149 臺灣苗栗縣頭份市建國路二段 298 號 3 樓
Name of Sample 样品名称	Polymer Li-ion Rechargeable Battery 聚合物锂离子可充电电池
Model 型号	556192
Testing Laboratory 测试实验室	Shenzhen TCT Testing Technology Co., Ltd. 深圳市通测检测技术有限公司 1B/F., Building 1, Yibaolai Industrial Park, Qiaotou, Fuyong, Baoan District, Shenzhen, Guangdong, China 中国广东省深圳市宝安区福永桥头亿宝来工业城 1 栋 1 层 B
Report No. 报告编号	TCT200312B034
Date of Issue 签发日期	2020. 03. 23
Test Conclusion 测试结论: **The test results are qualified. 测试结果为合格。**	

Tested by 主检人: May Hou 侯梅 **Approved by 批准人:** Allen Din 秦超

Inspected by 审核人: Amy Zeng 曾仪 **Seal of TCT 报告单位（盖章）:**