

# Gas Camera

# GMPC02

#### User's Guide



This manual is limited to describing camera devices only. For more information, refer to the following manuals.

- For detailed operating instructions, "Gas Camera System GMP02 User Guide.
- For an overview of how to use the Gas Camera, "Gas Camera System GMP02 Quick Setup Guide".
- · Safety and Cautions, "Safety Guide".

### Table of contents

Please	Read This First	. 1
1 Int	oduction	. 2
1.1	Conventions Used in this Manual	. 3
1.2	Overview of this System Camera	. 3
1.3	Disclaimers	. 4
2 Saf	ety Guide	. 5
2.1	Safety Warnings	. 5
2.1	.1 Safety Indication and Graphic Symbols	. 5
2.1	.2 Battery, Environment, and Conditions of Usage	. 6
2.1	.3 Product Handling	. 7
2.1		
2.2	Precaution for Handling	10
2.2		
2.3	Export Regulation	
2.4	Caution on Transport	
2.5	Camera that is No Longer Needed	
2.6	Disposing of the Product	12
3 Ma	ntenance of the <del>System</del> Camera	13
3.1	Routine Care and Cleaning	13
3.2	Battery Charging and Storage	13
4 Otl	er Matters	14
4.1	Intellectual Property Rights	14
4.2	Laws and Regulations	
4.2	.1 Regulation Notices (Camera)	14
4.2	2 Air Transportation of Lithium-ion Batteries	16
4.3	Specifications	17
4.3	.1 Camera	17
4.3	2 Battery	18
4.3	.3 AC/DC Adapter	18
4.3	4 Battery Charger	18
4.3	.5 Customer Support	18

# Please Read This First

### 1 Introduction

Thank you very much for choosing the Gas Camera.

Please ensure you read this manual before using this camera. To use this camera safely and effectively, it is important to carefully read this manual and understand the proper usage of the camera. Keep this manual in a safe place and readily accessible for your future reference.

No part of this manual shall be reprinted, translated into other languages, or cited without permission. Also, please note that any descriptions of specifications or any other contents are subject to change without prior notice for modification and/or improvement.

All copyrights of this camera belong to Konica Minolta, Inc., excluding programs and documents that have a separate copyright notice. The copyrights of such programs and documents belong to their respective copyright holders.

#### 1.1 Conventions Used in this Manual

This manual uses the following descriptions:

NOTE Explains matters requiring attention.				
EXPLANATION	Provides extensive technical information.			
XXXX	Indicates a certain reference link within this manual.			

#### 1.2 Overview of this Camera

The Gas Camera enables visualization of gas leak and records of images relating to gas leak, together with associated data of inspection conditions and operational data. The camera detects possible gas leaks in the camera field of view, and outputs images that have been processed using in conjunction with their associated inspection data.

#### NOTE

- This camera is not a gas detector. It is intended to be used in conjunction with existing gas detectors to assist your conservation efforts.
- The quality of gas leak visualization varies depending on the external environmental conditions.

Target gases for this camera is methane and all other hydrocarbon gases.

#### NOTE

Acetylene and cyanide are outside the scope of inspection.

#### 1.3 Disclaimers

- This camera has been designed and manufactured for industrial use. Therefore, please refrain from using it for any purposes that require high stability and reliability, e.g., nuclear control facilities, aviation and aerospace facilities, medical devices, safety apparatus for movable installations or vehicles, and any other purposes that might be pose a risk to human lives or injury. Also, never use this camera under environments that could damage the product or the optical system external materials, e.g., chemically polluting environments, electromagnetic interference environments, or environments that subject the camera to shock and vibrations. Konica Minolta assumes no responsibility for any damage or loss caused by improper use of this camera.
- Performance of this camera may be hindered under the following circumstances:
  - When there are glass or mirrored objects between the camera and the inspecting area;
  - When there are suspended particles in the atmosphere, such as, rain, snow, mist, smoke, water vapor and dust;
  - When vibration or shock are applied to the camera;
  - When the camera is subject to static electricity or other electrical charge.
- This camera is not designed to prevent theft, disasters, or accidents. Konica Minolta assumes no responsibility for any damage or loss due to theft, disasters, or accidents.
- This camera does not have an explosion resistant specification. DO NOT use this camera where any
  explosion risk may exist.
- Konica Minolta assumes no responsibility for any data loss that is not attributable to this camera, damage
  resulting from being unable to use the camera, or for any other loss when using this camera system for
  functions other than those which are offered by this camera.
- Never use this camera for any purposes other than those authorized by us.
- Sensors and other electrical components in use with this camera are consumable items. Please provide periodic maintenance to these components.

### 2 Safety Guide

### 2.1 Safety Warnings

The following instructions must be followed to ensure the user's safety with this camera during daily operation. Carefully read the safety precautions before you use this camera, and always ensure that this camera is operated correctly.

Be sure to also read each manual and guide provided with accessories, and use them correctly.

#### **IMPORTANT**

- Keep this manual in a safe and readily accessible place for quick and easy future reference.
- Carefully read the safety precautions when you use this camera, and always ensure that this camera is operated correctly.

#### 2.1.1 Safety Indication and Graphic Symbols

The following are explanations of matters that must be complied with in order to prevent injuries to the user and other persons as well as damage to property.

The following precautions are pictured to prevent injuries to the user and other persons as well as damage to property.

• The following categories and symbols are used depending on the extent of risk that might be incurred by mishandling the camera.

Safety indication	Description
<b>↑</b> WARNING	If this warning is ignored and the device is used incorrectly, there is a
Z:\WAINING	possibility of human death or serious injury.
<b>CAUTION</b>	If this caution is ignored and the device is used incorrectly, there is a
Z:\OAO I ION	possibility of human injury or property damage only.

• The following are examples of the main graphic symbols used.

Graphic symbol	Description	Graphic symbol	Description	Graphic symbol	Description
<u> </u>	Caution		Prohibition		Instruction

#### 2.1.2 Battery, Environment, and Conditions of Usage

### **↑** WARNING



- Do not use cables, batteries, battery chargers, AC/DC adapters or other accessories other than those included in the package or designated options. Using any products that were not included in the package, nor designated, might cause excessive heat generation, ignition, explosion, liquid leakage, or failure. Carefully read the contents of the instruction manuals of the battery and battery charger before use.
- Do not attempt to forcibly attach or detach the battery from the camera body. Doing so might cause a fire, burn or personal injury.
- The AC/DC adapter, battery and battery charger are dedicated parts for this camera. Do not use them for other products.



Be sure that the battery is properly aligned when the battery is attached to the camera. Failure to attach the battery correctly might cause the battery to ignite, burst, excessive heat generation, or leakage, which might result in a fire, burns, or personal injury.



Be sure the interface cover and battery cover are properly secured, and ensure that there is no dirt on the seal of them. Any water penetration through the interface cover and the battery cover might cause heat generation, ignition, or failure.



Do not use damaged cables. Also, ensure the cables have not been subjected to forcible bending, twisting, pulling, trampling, or pinching by a door, etc. Such conditions might cause a fire or electric shock.

Do not use this camera in an environment that exceeds the operating temperature and humidity range.

Operating temperature and humidity range

When the battery is connected:  $-20^{\circ}$ C to  $50^{\circ}$ C ( $-4^{\circ}$ F to  $122^{\circ}$ F) temperature; 30% to 80% (relative humidity with no condensation)

When the AC/DC adapter is connected:  $0^{\circ}$ C to  $40^{\circ}$ C ( $32^{\circ}$ F to  $104^{\circ}$ F) temperature; 30% to 80% (relative humidity with no condensation)



Do not leave this camera in an environment that exceeds the storage temperature and humidity range.

Storage temperature and humidity range

Camera alone:  $-20^{\circ}$ C to  $60^{\circ}$ C ( $-4^{\circ}$ F to  $140^{\circ}$ F) temperature; 30% to 80% (relative humidity with no condensation)

Battery:  $-20^{\circ}$ C to  $50^{\circ}$ C ( $-4^{\circ}$ F to  $122^{\circ}$ F) temperature (recommended:  $-20^{\circ}$ C to  $25^{\circ}$ C ( $-4^{\circ}$ F to  $77^{\circ}$ F)); 30% to 80% (relative humidity with no condensation)

AC/DC adapter:  $-20^{\circ}$ C to  $60^{\circ}$ C ( $-4^{\circ}$ F to  $140^{\circ}$ F) temperature; 30% to 80% (relative humidity with no condensation)

Also avoid sudden temperature change, which might result in burn or personal injury due to a fire or equipment damage.

### **ACAUTION**



If this camera is used in a location where they are exposed to direct sunlight, the external metal components might get very hot and cause burns. Be sure to protect yourself by wearing gloves when touching the external metal parts that are at high temperature.



This equipment is not suitable for use in location where children are likely to be present.

#### 2.1.3 Product Handling

### **⚠ WARNING**



Ensure that no foreign matter penetrates the connector. Such penetration might cause a short circuit which could result in a fire or camera failure.



Do not place the camera or battery in a fire and do not heat them. Also, do not bring fire such as candles, etc., close to the camera. This might cause the equipment to ignite, burst, or a fire.



Do not wash the camera in water to avoid the possibility of electric shock.



Do not dismantle or modify the camera. Such acts might cause a fire, electric shock, personal injury, or equipment failure.



Do not use the camera while it is covered with a cloth or in a hard case.

The excessive heat might cause a fire.



Do not drop the camera, battery, and battery charger.

Dropping them might cause a fire. Also, there is a possibility of personal injury.

Observe the following rules when handling the power plug on the battery charger, as there is a possibility of fire or electric shock.



- Do not use starburst connections.
- Avoid inserting the plug into the socket if it is contaminated with foreign matter (e.g. dust).
- Do not remove or insert the plug with a wet hand.
- Do not remove the plug by pulling the cable.



Do not point the optical window or the infrared lens towards the sun or a strong light source. Doing so may cause a fire or failure.

	<b><u>A</u>CAUTION</b>					
$\Diamond$	Avoid touching the battery terminal or the area around it. Also, before touching the camera or battery, touch nearby metal to discharge static electricity on your body. Although rare, touching the battery might cause damage to the battery, or heating due to static electricity. If you notice heat generation, avoid burn injuries, and contact your dealer.					
$\Diamond$	Do not apply shock or force to the optical windows, or the infrared lens surface of the camera.  Doing so might result in damage to the optical window or the infrared lens, or in personal injury. Keep the lens capped when it is not in use.					
$\bigcirc$	When replacing the battery, make sure that it has sufficiently cooled after turning off the power. Touching the battery while still hot might cause burns.					
$\Diamond$	Dropping or toppling the camera could cause personal injury. Be sure to place the camera in the designated hard case when transporting. Avoid carrying the camera by holding its handle while it is attached to a tripod. The tripod could become a tripping hazard and cause personal injury.					
$\bigcirc$	When using the camera attached to the tripod, securely fix the tripod so that it does not topple. If the tripod topples, for example due to a gust of wind, it could cause failure of the camera or injury to the operator.					
$\bigcirc$	Be careful when carrying the camera in the hard case. Dropping it on a foot might result in injury.					
$\Diamond$	When placing the camera on a table, put the rubber foot down for stability.  Placing the camera sideways, upside down, or with the infrared lens down might cause the camera to topple over, resulting in failure of the camera or personal injury.					

#### 2.1.4 Defects of the Product

	Ziiii Delects of the Floduct					
<u>^</u> WARNING						
$\bigcirc$	Avoid using damaged, deformed, or leaky batteries. Using such batteries might cause a burst, heat generation, ignition, or failure.					
$\bigcirc$	Stop charging the battery if it is not fully charged within the specified charging time. Using such batteries might cause a burst, ignition, liquid leakage, or excessive heat generation.					
$\bigcirc$	Do not use the battery if you observe unusual odor, heat, discoloration, or deformation. Using such batteries might cause a fire, burn or personal injury.					

### **MARNING**



When you experience any of the following conditions, immediately turn off the camera, remove the battery and AC/DC adapter, and contact your dealer. Continued use in such conditions might cause a fire or electric shock. Do not attempt repairs to any of the following defects as they may cause a risk to the user:

- There is smoke, abnormal odor, or noise coming from the camera.
- The camera and expansion devices are damaged.
- No image appears despite correctly following the procedures.

### **ACAUTION**



Do not use the product if a crack, abnormal noise, or excessive heat is observed to avoid personal injury or burn. In this case, immediately turn off the camera, remove the battery and AC/DC adapter, and contact your dealer.



If the battery fluid contacts your eyes, do not rub your eyes. To avoid the risk of loss of vision, immediately rinse your eyes thoroughly with tap or other clean water, and immediately seek medical treatment.



If the battery fluid adheres to the skin or clothes, immediately wash the affected area with tap or other clean water, to avoid skin damage.

### 2.2 Precaution for Handling

A failure, unauthorized repair, or mishandling of this camera camera might cause data loss or damage. In such cases, Konica Minolta will assume no responsibility for the restoration of the corrupted or lost data, nor any damage or lost earnings resulting from data corruption or loss.

#### 2.2.1 General Precautions when Using the Camera

- This camera is a precision instrument. Use with care to avoid impact.
- Be sure the infrared lens surface and the optical window are kept clean before starting the operation of the camera. If there is fogginess or smudges on the lens, clean the lens with a soft cloth.
- Be sure to remove the lens cap of the infrared lens before starting the operation of the camera. If an inspection is performed with the lens cap still on, the camera will not be able to detect the gas.
- Although the camera is dustproof and waterproof (IP54), do not use it in the rain as it may cause failure.
- The camera and any equipment other than the battery that is attached to the camera are not intended for outdoor use.
  - Use the equipment other than the camera and the battery removed from the camera indoors.
- Do not use the camera near high-voltage electrical power lines or any source that generates magnetism, which could result in failure, malfunction, or damage to the camera device.
- Avoid using or storing the camera in an atmosphere of corrosive gas or salt mist. Doing so might cause deformation, or failure of the camera.
- Do not place the camera under a sterilization lamp. This might cause deformation, discoloration, or failure of the camera.
- Do not store or leave this camera in a car. Doing so may cause failure due to high temperatures.
- Do not apply benzene, thinner or other organic solvents to the camera. Also avoid using organic solvents to clean the camera. There is a possibility of damage to the lens coating, surface finish and paint materials on the camera.
- If blurring occurs during shooting, inspection accuracy may be reduced. For high-precision inspections, attach the tripod to the camera to hold it in place.
- Handle the camera gently and avoid bumping into objects. This might negatively impact the gas inspection accuracy.
- Check the surroundings and pay attention to safety whenever carrying the camera or tripod. Otherwise, it might result in personal injury or camera damage.
- Regularly clean the camera to maintain its performance.
  - ► Clean the optical window and infrared lens surface carefully with a clean, soft cloth. Be careful not to scratch the window or lens.
  - ▶ When the camera becomes dusty, blow the dust away with a blower, and then wipe the camera with a damp cloth.
  - ▶ Regularly clean the rubber seals of the battery cover and interface cover to prevent hair, dust, or powder from getting caught in them.
- The LCD screen of the camera is not designed as a touch panel. Do not to press too hard as this may cause failure.

- Plug in the USB cable with the correct orientation. Otherwise, it might damage the camera.
- Do not disconnect the USB cable when the camera and PC are connected via USB for data transfer. Doing so may corrupt data.
- Turn off the camera before inserting or removing the SD card. Removing or inserting the SD card while the camera is running may result in data corruption.
- Be sure to change the initial Wi-Fi password. Keep the changed password with caution.
- GPS signals may not be received if you are inside a building or there are obstacles in the surrounding area.
  - If you need to receive GPS signals, move to an open outdoor area.
  - If you move to an open outdoor area and still cannot receive the GPS signals after 10 minutes or more, reboot the camera.
- This camera may make a motor noise for a while after turning off the power, but this does not affect product quality.

### 2.3 Export Regulation

The products comprising this camera contain goods, technology, or software that are subject to the Foreign Exchange and Foreign Trade Act of Japan and its related laws and regulations, and the Export Administration Regulations (EAR) of the U.S. Department of Commerce. Comply with these laws and regulations when exporting the products comprising this camera or providing them to non-residents. The use of this camera in the design, development, production and/or use of nuclear, chemical or biological weapons or missiles is strongly prohibited.

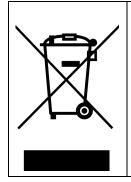
#### 2.4 Caution on Transport

THIS PRODUCT IS A PRECISION INSTRUMENT. WHEN YOU NEED TO TRANSPORT THIS PRODUCT TO ANY LOCATION, USE PACKING MATERIALS SPECIFIED BY KONICA MINOLTA IN ORDER TO MINIMIZE VIBRATIONS AND SHOCKS. CONTACT YOUR DEALER FOR FURTHER INFORMATION REGARDING OUR SPECIFIED PACKING MATERIALS.

### 2.5 Camera that is No Longer Needed

Comply with applicable laws and regulations when disposing of the camera by yourself.

### 2.6 Disposing of the Product



This symbol means: Do not dispose of this product together with your household waste!

Please refer to the information of your local community or contact our dealers regarding the proper handling of end-of-life electric and electronic equipment. Recycling of this product will help to conserve natural resources and prevent potential negative consequences for the environment and human health caused by inappropriate waste handling.

### 3 Maintenance of the Camera

### 3.1 Routine Care and Cleaning

- 1) Before cleaning the camera, turn off the power and remove the battery and the AC/DC adapter.
- 2) Regularly clean the camera to maintain its performance.
- 3) When the surface of the infrared lens or the optical window becomes dirty, carefully wipe off dirt with a clean, soft cloth, such as one for cleaning glasses, so that the lens or the window will not be scratched.
- 4) Never wash the camera with water.
- 5) When the camera becomes dusty, blow the dust away with a blower, and then wipe the camera with a damp cloth.
- 6) Avoid using any chemicals or solvents. Use of chemicals or solvents may result in damage to the camera.
- 7) When the camera is soiled with hand cream or sebum, don't leave it as it is (because of possible discoloration).
- 8) In order to maintain the dustproof and waterproof function of the camera, regularly clean the rubber seals of the battery cover and interface cover to prevent hair, dust, or powder from getting caught in them.

### 3.2 Battery Charging and Storage

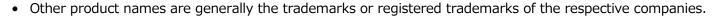
- The battery life varies based on the usage environment and battery aging.
- Avoid storing the camera with a fully or minimally charged battery. It might impact battery performance and life.
- When the battery will not be used for an extended period of time, remove the battery from the camera for storage, and charge it at least once every six months.
- Do not store the battery fully discharged. Recharge the battery after every use.
- Complete discharge and leaving it, as is, may impact the battery usability and recharge capability.
- Discontinue charging the battery if it is not fully charged within the specified charging time.
- Depending on the usage conditions of the battery, the battery may swell as it approaches the end of its operational life, but this is not a problem.
- Never use the battery when its case has been damaged, such as in a fall.
- Stop using the battery if it generates heat when it is not being used.
- Stop using the battery if leaking occurs.
- When the battery is fully charged, remove it from the battery charger and store it.

Gas Camera / GMPC02 Other Matters

#### 4 Other Matters

### 4.1 Intellectual Property Rights

- KONICA MINOLTA and KONICA MINOLTA logos are the trademark and registered trademark of Konica Minolta, Inc.
- All intellectual property rights on software installed in this camera belong to Konica Minolta, Inc.
- Reproduction, analysis, modification, or incorporation into another camera of a part or all of the software in this camera for use is prohibited.
- This camera compresses video using H.264 under a license agreement with MPEG LA,LCC. If you wish to use the output data of this camera for commercial purposes or to refer to the latest information regarding the license, check the MPEG LA,LCC website.
- QR Code is a registered trademark of DENSO WAVE Incorporated.
- Wi-Fi is a registered trademark of Wi-Fi Alliance.
   Wi-Fi CERTIFIED logo is a certification mark of Wi-Fi Alliance.



### 4.2 Laws and Regulations

#### 4.2.1 Regulation Notices (Camera)

The Gas Camera: GMPC02 includes approved Wireless Module, MODEL: WPEA-251ACNI(BT)

#### ■ SPECIFICATIONS:

2.4 GHz frequency range: 2.412 GHz to 2.484 GHz (Based on radio Law of each country) Maximum radio-frequency power transmitted in the frequency band (EIRP): Max. 20 dBm for 2.4GHz

#### ■ For U.S.A. users

FCC: Declaration of Conformity Product Type: Gas Camera

Product: GMPC02

https://www.konicaminolta.com/us-en/gas/

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

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

Gas Camera / GMPC02 Other Matters

communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

#### **↑** WARNING

- The design and production of this unit conform to FCC regulations, and any changes or modifications must be registered with the FCC and are subject to FCC control. Any changes made by the purchaser or user without first contacting the manufacturer will be subject to penalty under FCC regulations.
- This device must be used with a shielded interface cable. The use of non-shielded cables is likely to result in interference with radio communications and is prohibited under FCC rules.

#### **!** CAUTION

To maintain compliance with FCC's RF exposures, use only the supplied antenna. Unauthrized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

This device complies with FCC part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

"Contains FCC ID: 2A4C6-GMP02"

#### ■ For Canadian users

This Class A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

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.

L'utilisation de ce dispositif est autorisée seulement aux conditions suivantes:

- (1) il ne doit pas produire de brouillage, et
- (2) l'utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

"Contains IC: 1048B-GMP02"

#### ■ For European users

We hereby declare that this product is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

The latest version of the Declaration of Conformity is available at our official website.

https://www.konicaminolta.com/us-en/gas/download/download.html

Note: 5 GHz may not be available.

This radio equipment is restricted to indoor use only. Outdoor use is prohibited.

This restriction applies to all the countries listed in the table below.



AT	BE	BG	СН	CY	CZ	DE	DK	EE
EL	ES	FI	FR	HR	HU	IE	IS	IT
LI	LT	LU	LV	MT	NL	NO	PL	PT
RO	SE	SI	SK	TR				

#### ■ For users in countries not subject to class B regulations

#### **!** WARNING

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

This device must be used with a shielded interface cable. The use of non-shielded cables is likely to result in interference with radio communications and is prohibited under CISPR rules and local rules.

#### 4.2.2 Air Transportation of Lithium-ion Batteries

When lithium-ion batteries need to be transported, it is necessary to satisfy conditions such as "IATA Aviation Dangerous Goods Regulations". Also, the regulations on the air transportation of lithium-ion batteries are subject to change. Carry out the transportation in accordance with the latest transportation regulations.

## 4.3 Specifications

### 4.3.1 Camera

ltem	Specifications			
Model No.	GMPC02			
Battery operating time	Approximately 2 hours (without deterioration, in a normal thermal environment)			
Infrared/visible image	Shooting range	Horizontal angle of view: 40°		
shooting function		Vertical angle of view: 32°		
	lmage size	Visible image/Visible gas image: 640x512		
		Others: 320x256		
	Focus range	Visible: ∞ fixation		
		Infrared: 0.4 m to ∞ (1.31 ft to ∞)		
	Frame rate	5fps *10fps only for high sensitivity image		
Usage environment	Temperature	-20°C to 50°C (-4°F to 122°F)		
	Humidity	Humidity 30% - 80% relative humidity (no condensation)		
Storage environment	Temperature	-20°C to 60°C (-4°F to 140°F)		
(*Excluding battery)	Humidity	Humidity 30% - 80% relative humidity (no condensation)		
Protection level	IP54			
External dimensions	159(W)×187(H)×287(D) mm (6.26(W)×7.36(H)×11.3(D) in.)			
Weight	Approx. 2.5 kg (5.5 lbs.) *Battery included			
Communication	Wi-Fi			
External I/O	USB MicroB			
	SD card (Video speed class V30 or higher recommended)			
Safety	IEC 62368-1			
Environment	Compliant with RoHS Directive			

Gas Camera / GMPC02 Other Matters

#### 4.3.2 Battery

ltem		Specifications	
Model No.	RRC2054		
Operating temperature	Charging 0°C to 40°C (32°F to 104°F)		
range	Discharging -20°C to 50°C (-4°F to 122°F)		
	Storage	-20°C to 50°C (-4°F to 122°F) *0°C to 25°C (-4°F to 77°F)	
		is recommended	
External dimensions	$77.4(W) \times 85.1(H) \times 22.4(D) \text{ mm } (3.05(W) \times 3.35(H) \times 0.88(D) \text{ in.})$		
Weight	230 g (8.1 oz)		

### 4.3.3 AC/DC Adapter

ltem	Specifications			
Model No.	PS65			
Operating temperature	Usage	0°C to 40°C (32°F to 104°F)		
range	Storage -30°C to 80°C (-22°F to 176°F)			
Input power supply	100-240 VAC			
Output power supply	19.00 VDC±5%			
External dimensions	$50(W)\times25.4(H)\times85(D)$ mm $(1.97(W)\times1(H)\times3.35(D)$ in.)			
Weight	Approx. 270 g (9	Approx. 270 g (9.5 oz)		

### 4.3.4 Battery Charger

ltem	Specifications		
Model No.	RRC-SMB-DBC		
Operating temperature	Usage	0°C to 50°C (32°F to 122°F)	
range	Storage -10°C to 70°C (14°F to 158°F)		
Input power supply	19.00-26.00 VDC		
External dimensions	$175(W)\times43(H)\times155(D)$ mm $(6.89(W)\times1.69(H)\times6.1(D)$ in.)		
Weight	Approx. 325 g (11.5 oz)		

### 4.3.5 Customer Support

If you have any questions about the camera, contact the dealer from whom you purchased the camera.





