

ACCESS CONTROL  
DOOR PHONES

**PanDoor**  
PSTN Line adaptive  
Door Access  
Control Device

**Installation and  
Programming  
Manual**

**ITS**  
Telecom

# **PanDoor**

## **Installation and Programming Manual**

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**Version 1, Release 1.5, November 2008**

## **NOTICE**

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The following shall void the above warranty: malfunctions resulting from fire, accident, neglect, abuse, or acts of God; use of improper electrical power; or repair of, tampering with or alteration of the product by anyone other than ITS authorized personnel.

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# 1 Introduction

ITS is pleased to introduce **PanDoor**, the latest addition to the wide range of indoor and outdoor Access Control Door Phones, which provides a cutting-edge technology, a high quality hands-free telephone and a built-in electromagnetic lock relay, alongside with an easy set-up, durable design and “plug and play” installation.

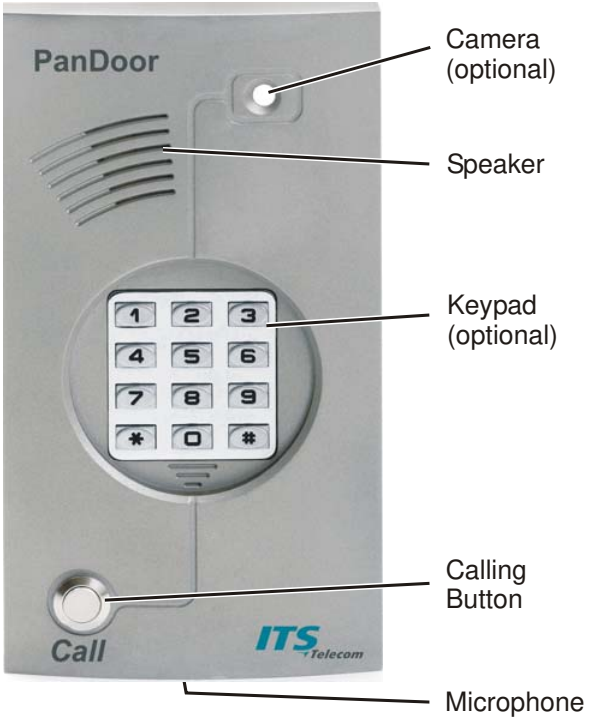
## 1.1 Product Description

The PanDoor is an access control door phone designed for both residential and office applications. The PanDoor system comprises the following components:

- Up to two outdoor units, available with a keypad and a CALL button, allowing visitors to establish a telephone call with an indoor telephone, or dial an access code to open a door or gate.
- A controller that connects one or two outdoor units to the telephone line. Programming and control are performed using DTMF tones on a telephone set.
- Optional – a built-in CCTV pinhole camera (black & white or color).

The PanDoor provides the following features:

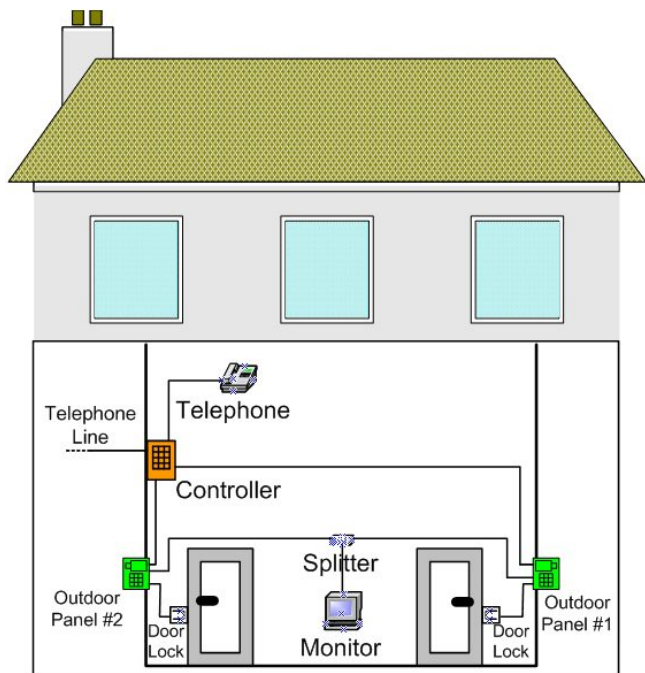
- Designed for wall mounting.
- Controls up to two doors.
- Two-way hands-free telephone.
- Modern designed casing.
- 12VAC transformer.
- Call Waiting support.
- Distinctive rings for each outdoor unit.
- DTMF Programming via home telephone.
- Optional black & white or color high-quality pinhole camera.



**Figure 1. PanDoor Panel**

## 1.2 Schematic Setup

The following picture illustrates the schematic setup of the PanDoor system.



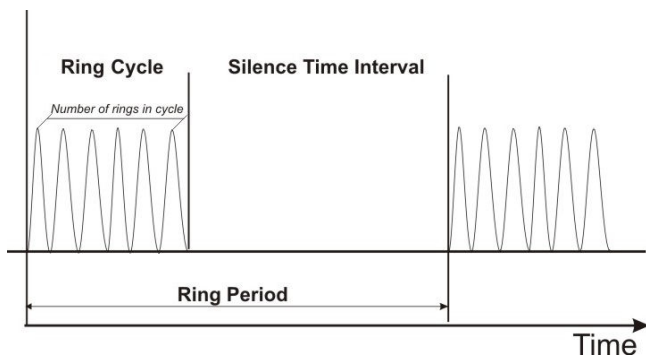
**Figure 2. PanDoor Schematic Setup**

## 1.3 Operating Methods

There are three methods of opening the door using the PanDoor panel:

- **Opening the door from the outside.** To open the door from the outside, you must dial a pre-defined code on the outdoor unit keypad. When the code is entered correctly, the keypad light flashes, and the door opens. When the code is entered incorrectly, the keypad light flashes quickly and the code is rejected.
- **Opening the door in response to a call from the outside.** When a visitor places a call by pressing the **CALL** button on the outdoor unit, a distinctive ring sounds on the residential telephone. While the telephone is ringing, the visitor hears On Hold beeps through the speaker. To answer the call, you must pick up the receiver as done in a regular phone call. After the conversation with the caller is complete, you can either dial a pre-defined code to open the door, or hang up to terminate the call.
- **Opening the door in response to a call from the outside while engaged in conversation.** When engaged in a conversation and a visitor places a call by pressing the **CALL** button on the outdoor unit, a distinctive Call Waiting tone sounds in the receiver. To answer the call, you must press the PSTN/Panel switch key (default – 0). After the conversation with the caller is complete, you can either dial a pre-defined code to open the door and press the PSTN/Panel switch key again to return to the original call, or press the PSTN/Panel switch key directly to terminate the conversation and return to the original call.
- **Defining a ring type to distinguish between PSTN and Door Panel call.** The user can program the ring cycle and silence interval for the ring that will sound when the incoming call is from the door panel. To program this ring type, use DTMF commands \*362, \*363 and \*364. The ring cycle is illustrated in Figure 3.



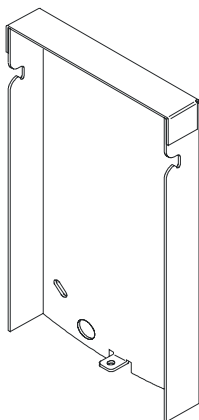


**Figure 3. Ring Cycle**

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## 2 Installation

The PanDoor should be mounted on the supplied installation bracket as displayed in Figure 4.



**Figure 4. Outdoor Unit Bracket**

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### ***Warning***

*DO NOT ROUTE TELEPHONE AND AC WIRING INSIDE THE SAME CONDUIT. Route all telephone wires inside a dedicated conduit that is **at least six inches** away from any AC line wiring.*

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### **2.1 Installing the PanDoor Wall Bracket**

**To install the PanDoor wall bracket:**

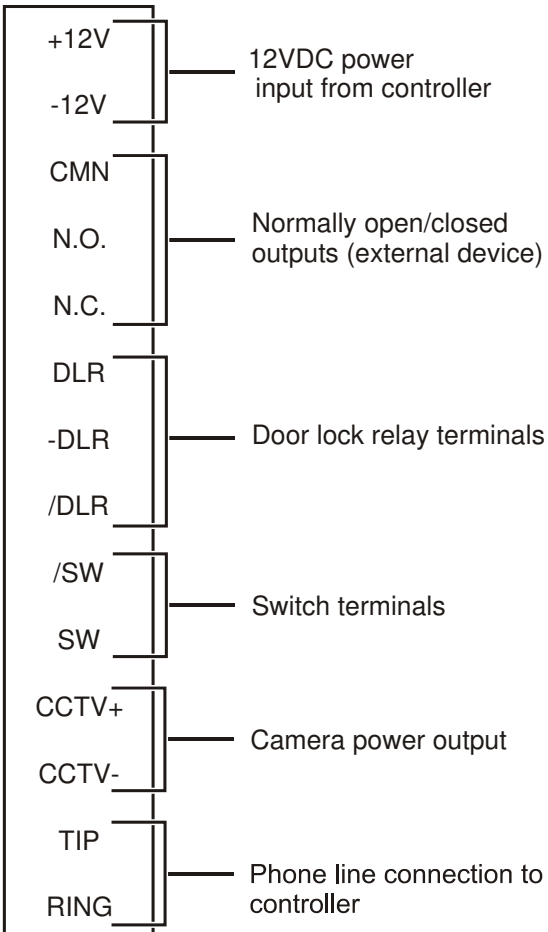
1. Measure and mark the location on the wall where the holes will be drilled for the mounting bracket.
2. Drill holes and insert the provided wall anchors.
3. Attach the mounting bracket using the provided wall screws.

## 2.2 Installing the PanDoor Panel

You can connect either one or two outdoor PanDoor units to a single controller (indoor unit).

The PanDoor can be connected to an external bypass switch for opening the door lock. This switch can be installed inside the residence and should be connected to the SW and /SW terminals on the PanDoor wire connector.

Figure 5 illustrates the terminal locations on the wire connector of the outdoor panel. All wiring to the unit should be attached to the wire connector. The wire connector is a screw connector type. In order to attach a wire, you must insert the stripped end of the wire into the appropriate terminal and tighten the terminal screw. This will crimp the wire connection.



**Figure 5. Outdoor Panel Wire Connector**

### To install the PanDoor Panel:

1. Remove the PanDoor panel cover and locate the wire connector.
2. Connect the 12V wires from the controller to the **+12V** and **-12V** terminals.
3. Connect the audio wires from the controller to the **TIP** and **RING** terminals.
4. Connect the door lock relay wires to the **DLR** and **-DLR** terminals. Alternatively, if the door lock relay is a powered-locked-state type lock, connect the door lock relay wires to the **/DLR** and **-DLR** terminals.
5. If an external bypass switch is installed, connect its wires to the **SW** and **/SW** terminals.
6. Place the PanDoor panel onto its mounting bracket.
7. If required to install another outdoor unit, repeat steps 1 to 6.

## 2.3 Installing the Controller

The controller is installed indoors. It receives power from a 12VAC transformer supplied with the unit. The controller powers the outdoor units through 12VDC wires connected to its **KEYPAD POWER** terminals.

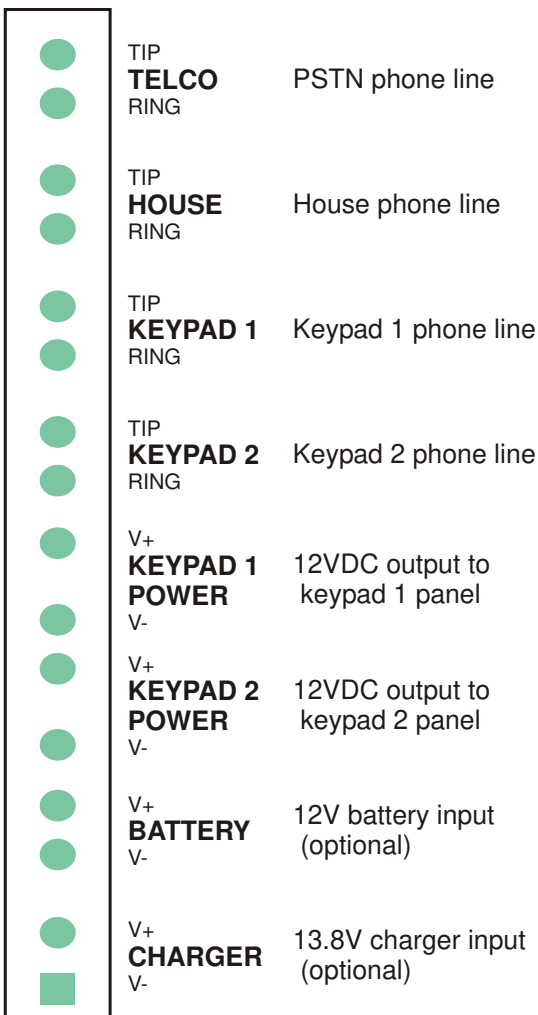
Figure 6 illustrates the terminal locations on the wire connector of the controller.

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#### *Note*

*Verify correct connection of the connectors to the controller. The polarity sign (+ or -) appears on the connectors.*

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**Figure 6. Controller Unit Wire Connector**

## Installation

### To install the controller:

1. Remove the controller cover and locate the wire connector.
2. Connect the telephone line wires to the **TELCO TIP** and **RING** terminals.
3. Connect the stripped cable wires of the indoor telephone unit to the **HOUSE TIP** and **RING** terminals.
4. Connect the audio wires from the outdoor unit to the **KEYPAD1 TIP** and **RING** terminals. If there is another outdoor unit, connect the audio wires to **KEYPAD2 TIP** and **RING** terminals.
5. Connect the **12V** power wires from the outdoor unit to the **KEYPAD1 POWER V+** and **V-** terminals. If there is another outdoor unit, connect the 12V power wires (if available) to the **KEYPAD2 POWER V+** and **V-** terminals.

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#### *Note*

*It is strongly recommended to use a 0.8 mm<sup>2</sup> cross-section wire, so that the device will work properly at a distance of up to 100 m.*

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6. Optional: Connect the wires of a backup battery to the **BATTERY V+** and **V-** terminals. A backup battery supplies power to a powered-locked-state type door lock relay in case of power failure so that the door can be opened. A battery charger should be connected to the **CHARGER V+** and **V-** terminals.
7. Place the controller on its mounting bracket.
8. Plug the transformer output cable into the **Power** connector located at the side of the controller.
9. Plug the transformer into a power outlet.

## 2.4 LED Indications

The door panels are equipped with three green LEDs located between the keypad and panel body, as displayed in Figure 7. When inactive, these LEDs are invisible, but when activated their emitted light is clearly visible.





**Figure 7. Keypad LEDs**

Status	LED 1	LED 2	LED 3
Idle	Off	On	Off
First touch on keypad	On	On	On
Code error	Fast Blink	Fast Blink	Fast Blink
Door open	Slow Blink	Slow Blink	Slow Blink

Timeout to return to idle state: 10 seconds after last digit was pressed.

### 3 Programming

PanDoor programming is performed via a telephone using DTMF commands.

Operational keys:

Operation	Command	Comment
Connect to panel	#1 – connect to panel 1 #2 – connect to panel 2	
Connect to controller	#9 – connect to controller	Use this option for programming operation
Open door	8	You may modify this code (*150)
Switch between active PSTN /Panel session	0 – switch between PSTN/Panel as response to waiting call tone	You may modify this code (*160)

#### To enter the programming mode:

1. Pick up the receiver of the residential telephone and make sure that you receive the PSTN dial tone.
2. Call the required unit (#1 for outdoor panel 1, #2 for outdoor panel 2 or #9 for indoor controller unit).
3. Wait until a connection indication signal sounds (two fast beeps).
4. Dial the following: **\*900+password (default '1234')**.
5. Start the programming procedure according to requirement. Every successful command is confirmed by two consecutive beeps. An error is indicated by a single beep.

**Note**

*If an incoming call comes through the PSTN during the programming process, a Call Waiting signal will sound. If you switch to answer the call, the completed programming settings are saved automatically.*

**To exit the programming mode:**

- Dial **\*900**.
- Hang up.
- Timeout (default value: 45 seconds).
- Switch to another panel or controller.

**Note**

*It is necessary to hang up between door panel programming and entering a controller.*

**3.1 Programming Code Guide**

The following programming guide provides a list of all possible operations, commands and default values.

Operation	Command	Default
Access code  Unit: <b>Panel</b>	*110 + XX + YYY...+# where: XX = Access code number (00-99) YYY...= New Access code (2-4 digits)  <b>Note:</b> The capacity of access codes is 100 entries per panel.	00=9876

## Programming

Operation	Command	Default
Code to open the door from the telephone during a conversation with a visitor.  Unit: <b>Panel</b>	*150 +XXXX + # where: XXXX = Digits (0-9)  <b>Note:</b> Cannot set digit already used as “Switch Code” (*160)	8
Reset controller to default factory setting  Unit: <b>Controller</b>	*151	
Reset panel to default factory setting  Unit: <b>Panel</b>	*152	
Panel/PSTN Switch Code  Unit: <b>Controller</b>	*160 + X where: X = Digits (0-9) Cannot set digit already used by “Relay activation” (*150)	0
Conversation timeout  Unit: <b>Panel</b>	*200 + XX where: XX = Seconds (10-99) 00 = Unlimited	45
Door opening time limit (sec)  Unit: <b>Panel</b>	*250 + X X = Seconds (1-9)	3 sec

Operation	Command	Default
Camera activation  Unit: <b>Panel</b>	*300 + Y where: Y = 0 – Camera off Y = 1 – always connected Y = 2 – Powered when off-hook (*) Y = 3 – Powered with any touch on (**) (*) <b>Note:</b> Power off will be always with 10 second delay after on-hook.  (**) <b>Note:</b> Power off will be 10 seconds after the last key has been pressed.	1
Calling beep indication  Unit: <b>Panel</b>	*350+X Where: X = 0 no beep indication X = 1 beep indication	1
Silence time interval after ring cycle completion (20ms resolution)  Unit: <b>Panel</b>	*362 +XXXX + # where: XXXX = Digits (0-9) in msec  Example: 2.5 sec pause = 2500 msec parameter (PSTN ring silence)	75
Number of rings in the cycle  Unit: <b>Panel</b>	*363 +XXXX + # where: XXXX = Digits (0-9) Example: 0025 PSTN ring Minimum value: 0003	3

Operation	Command	Default
<p>Number of rings that will sound when the Call button is pressed. After reaching the specified number of rings, the call will be rejected.</p> <p>Unit: <b>Panel</b></p>	<p>*364 +XXXX + # where: XXXX = Digits (0-9) in seconds</p> <p><b>Note:</b> Up to 4 digits</p>	<p>20</p>
<p>Change the system administrator's password (for programming)</p> <p>Unit: <b>Controller</b></p>	<p>*600 + New password (must be 4 digit long).</p> <p><b>Note:</b> Do not use the * or # keys.</p>	<p>1234</p>

## 4 Troubleshooting

When encountering a problem during system operation, this troubleshooting guide may be useful.

Problem	Solution
<p>I try to program the controller/panel and get an error tone.</p>	<p>Most commands are available only either controller or panel. Make sure that you program the correct device.</p> <p>This could indicate a problem in the command format. Consult the programming guide for legal entries and commands format.</p>
<p>When a person presses the Call button on the outdoor panel, they hear music for 20 seconds and then the call is disconnected.</p>	<p>Music during the waiting period is a normal operational situation, with timeout of 20 seconds. This could mean that the person inside the house did not answer the telephone, or that he chose not to accept call waiting.</p> <p>Check cables wiring.</p>
<p>During conversation, I try to open the door using internal access code, but the door does not open.</p>	<p>Check that internal access code is defined correctly.</p> <p>Make sure you are connected to the correct panel, and using the correct code.</p>
<p>I cannot switch between a call from PSTN and a call from PanDoor.</p>	<p>Check settings of command *160.</p>
<p>After switching from PSTN to panel and opening the door, I cannot return to the PSTN call.</p>	<p>In order to retrieve the original call (from PSTN) you need to dial the PSTN/Panel switching digit (default=0).</p> <p>It is possible that the person on the PSTN line disconnected the conversation.</p>

## Troubleshooting

<b>Problem</b>	<b>Solution</b>
The camera is not working.	<p>Check settings of command *300. When set to =0, camera is disabled. When set to =2, camera will be activated only during call or panel touch.</p> <p>Check cables wiring.</p> <p>Make sure your video equipment is compatible to the camera. Consult the technical specification section for details.</p>



## 5 Specifications

### 5.1 General Specifications

<b>Power Supply (External)</b>	12VAC@2.5A (supplied with unit) 16VDC@2.5A (optional)
<b>Line Voltage</b>	24-72VDC
<b>On-Hook Insulation</b> (resistance between line terminal and ground)	0-100VDC > 5M $\Omega$ 100-200VDC > 30 K $\Omega$ 500VAC/50Hz > 20K $\Omega$ 100VAC/25Hz > 100K $\Omega$
<b>Ring Capacitor</b>	0.47 $\mu$ F $\pm$ 10%
<b>On-Hook Impedance</b>	@50VDC, 40VAC/25Hz > 3K $\Omega$
<b>Ring Detect</b>	27-100VAC/16-60Hz
<b>DC Resistance</b> (off-hook)	24-66VDC@20-100mA/350 $\Omega$
<b>Impedance (Off-Hook)</b>	300-3400Hz 500-700 $\Omega$
<b>Imbalance Ratio</b>	300-3400Hz > 46dB
<b>Return Loss</b>	300-3400Hz > 18dB
<b>DTMF Reception:</b>	
<b>Frequency Tolerance</b>	$\pm$ 1.8%
<b>Frequency Level</b>	-29 to -2dBm
<b>Inter-Digit Pause Time</b>	>40msec
<b>Tone Burst Length</b>	>40msec
<b>Relay Switching Current</b>	<2A
<b>Dimensions (HxWxD):</b>	
<b>Outdoor Unit</b>	219x122x23mm/8.6x4.8x0.9inch
<b>Controller</b>	185x95x38mm/7.3x3.7x1.5inch
<b>Operating Temperature</b>	Outdoor: -20 $^{\circ}$ to 50 $^{\circ}$ C/ 4 $^{\circ}$ to 122 $^{\circ}$ F Indoor: 0 $^{\circ}$ to +35 $^{\circ}$ C/ 32 $^{\circ}$ to 95 $^{\circ}$ F

## 5.2 Camera Specifications

### Black and White Camera

<b>TV System</b>	EIA/CCIR
<b>Image Sensor Device</b>	1/3" interline transfer CCD
<b>Image Sensor Area</b>	4.8x3.6mm
<b>Horizontal Frequency</b>	15.625KHz
<b>Vertical Frequency</b>	50Hz
<b>Total Pixels</b>	542(H)x582(V)
<b>Scanning System</b>	625 lines, 50 fields/sec CCIR
<b>Resolution</b>	420 TV lines horizontal
<b>Minimum Illumination</b>	0.5 Lux @F2.0
<b>Electronic Shutter</b>	1/50–1/100,000 sec
<b>S/N Ratio</b>	Better than 48dB
<b>Video Signal Output</b>	1.0Vp-p composite video signal @75Ω load
<b>Gamma Correction</b>	0.45
<b>Gain Control</b>	Auto Gain Control (AGC)
<b>Lens &amp; View Angle</b>	5.5mm F5.5/60°

**Color Camera**

<b>TV System</b>	PAL/NTSC
<b>Image Sensor</b>	¼ inch CCD
<b>CCD Total Pixels</b>	542(H)x586(V)
<b>SYNC System</b>	Internal
<b>Minimum Illumination</b>	0.5 Lux @F1.2
<b>Resolution</b>	380 TVL/470 TVL (Enhanced)
<b>S/N Ratio</b>	52dB (MIN)/60dB (TYP) (AGC OFF)
<b>White Balance</b>	ATW/AWB/FIX (zero color rolling)
<b>White Balance Range</b>	AWB/ATW: 3200–10000°K FIX: 3200°K
<b>Electronic Shutter</b>	1/50–1/120,000 sec
<b>Video Output</b>	1.0Vp-p composite video signal @75Ω load
<b>Gamma Correction</b>	0.45
<b>Gain Control</b>	AGC
<b>Lens &amp; View Angle</b>	45° > 0.7mm



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