

SAFETY CAMERA & VIDEO CAPTURE SYSTEMS

Clarion

A NEW VISION OF SAFETY AND SECURITY



Protect your investment with advanced in-car surveillance equipment from the world's leading provider of automotive media systems



As a world leader in the development and production of in-car media equipment, Clarion has always been at the forefront of technological evolution. Our years of experience — including more than four decades of development of in-vehicle camera systems — have given us an expertise that none can match. And nowhere is that expertise more important than in designing safety camera and monitor systems.

Our reliability is backed up by one of the world's most rigorous production line quality assurance systems because we know that our in-vehicle equipment must perform consistently and reliably no matter where it's being used — whether it's the hot tropics, a parched desert, a wet rainforest, or the freezing cold of the far north. Our state-of-the-art computer design system simulates various climatic conditions and every product goes through a wide range of quality control tests. Only when products pass these tests, are they entitled to bear the Clarion insignia and be delivered to our customers around the world. And thanks to advanced automation, our factories produce 50,000 in-vehicle CCD cameras for both commercial and private vehicles in countries around the world each and every month. So when it comes to in-car surveillance — leave it to Clarion. Because if it's "in-car," it's Clarion.



Headquarters and Technical Center



Waterproof Test

Assuming vehicles are washed by a car wash and exposed to the weather, we check for water penetration inside the camera and determine how watertight the equipment is.



Vibration Test

Assuming our products are used in commercial vehicles, we confirm durability by subjecting them to severe vibrations.



Temperature Test

Reliability under rapid temperature change is checked, including performance confirmation under high and low temperatures.



Durability Test

We expose each and every design, as well as a sample from each production to extreme operation testing. We check the durability of movable parts such as shutter opening/closing and monitor controls by conducting more than 50,000 cycles. The buttons on our monitors are given the same challenge.

LCD COLOR MONITORS

Introducing high-quality Clarion monitors that deliver superior cost performance in a sophisticated original design with dual camera connectivity.

7" WIDE COLOR LCD MONITOR

Large 7-inch screen delivers sharp, clear images in a sleek, stylish design that fits attractively in your vehicle interior.

CJ7100E

7" Wide Color LCD Monitor (Compatible with both DC 12V and 24V)

- Camera power supplies and a two-camera switcher are built in.
- Convenient true/mirror image switching function.
- Automatic video switching with reverse gear and turn signal link.
- Manual dimmer function.
- Image sources other than those from a camera can be displayed via video input and audio input.
- Seven language display selection.
- Wireless remote control is included.



On-dash
mounting kit



IR Remote



5.6" COLOR LCD MONITOR

Good cost-to-performance value from a practical 5.6-inch color LCD monitor.

CJ5600E

5.6" Color LCD Monitor (Compatible with both DC 12V and 24V)

- Camera power supplies and a two-camera switcher are built in.
- Convenient true/mirror image switching function.
- Automatic video switching with reverse gear and turn signal link.
- Seven language display selection.



On-dash
mounting kit



QUAD CAMERA COLOR MONITOR

We can't be in four places at once, but with the new new CJ7300G, you can see what you want, when you want. Safety has never been easier.

CJ7300G

7" WIDESCREEN DIGITAL QUAD CAMERA COLOR MONITOR

- Digital LCD panel delivers high image quality.
- Four display modes from one to four cameras simultaneously in various screen combinations.
- Built-in power box allows direct connection of up to 4 cameras.
- Left-right inversion display (normal / mirror image switching) available.
- On-screen distance marker (Camera 1 only).
- Built-in speaker (works in combination with the CC3000E's microphone*).
- Touch-panel buttons and 8-language menu.
- Auxiliary video input terminal.
- Compatible with 12V and 24V electrical systems.
- On-dash mounting kit and remote control are provided.

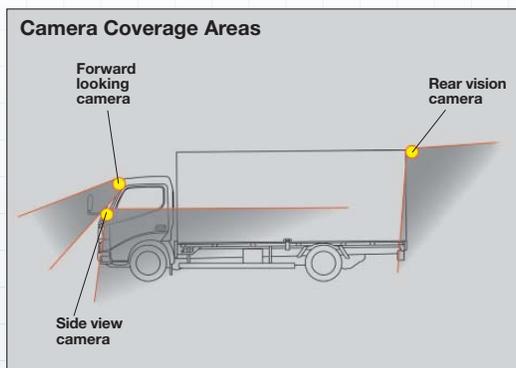
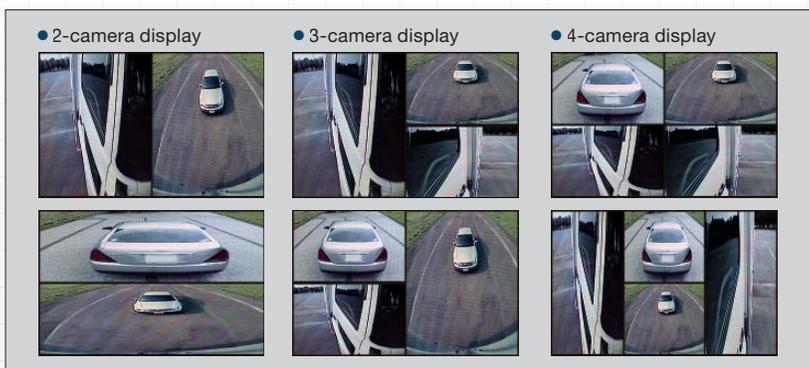
*Only Camera 1 input can be used with the CC3000E's microphone function.



Wireless remote control



On-dash mounting kit



Specifications

Diagonal screen size (inches)	7	Separate video input	Yes
Power supply	12/24V	A/V input	1 input (video/mono audio)
Power consumption	900mA (DC14V - with 4 cameras connected)	Operating temperature range	-10°C ~ +60°C / 14F ~ +140F
Picture element pixel	800 × 3(RGB) × 480	Dimension	174 (W) × 125 (H) × 27 (D) mm 6.85 (W) × 4.92 (H) × 1.06 (D) inches
Image	True/Mirror: Selectable	Weight	Approx. 480 g / 16.93 oz
Number of connectable cameras	4 cameras		
Auto triggering	3 signal inputs		

System Example



HEAVY DUTY CCD CAMERAS

Based on the concept of safety and reliability, Clarion's heavy-duty CCD cameras utilize state-of-the-art technology and deliver high performance even under tough conditions.

HEAVY DUTY COLOR CCD CAMERAS

With motorized shutters to protect the premium optics and extreme-duty cast aluminum housings, reliability concerns don't exist.

CC2001F  
Heavy Duty Color CCD Camera with Shutter
 (Mirror Image/Wide Angle)

CC2004E  
Heavy Duty Color CCD Camera with Shutter
 (True Image/Wide Angle)

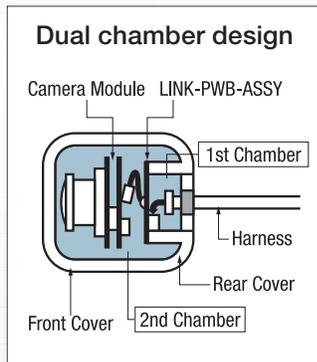
- Clarion's flagship CCD camera delivers both high image quality and high durability no matter what the operating conditions are.
- Front gate shutter prevents visibility from being obstructed by mud, grit, water, etc, ensuring you always have a clear view.
- Dual chamber design keeps any moisture or water that may leak from the harness from getting inside in the camera.
- Sturdy aluminum die-cast housing ensures the durability of the camera body.



Opening and closing of shutter is coupled with camera operation (CC2001F only).



The connector can be tightened securely with a wrench to ensure watertightness.



Thanks to the digital CCD image sensor, these heavy-duty cameras have exceptional picture quality.

CC2000E 
Heavy Duty Color CCD Camera
 (Mirror Image/Wide Angle)

CC2003E 
Heavy Duty Color CCD Camera
 (True Image/Wide Angle)

CC2002E 
Heavy Duty Color CCD Camera
 (True Image/Narrow Angle)



CCD CAMERAS

With a lineup that ranges from a model with infrared LED illumination to sleek, ultra compact models and more, there's a Clarion CCD camera to meet every need.

IR ILLUMINATED COLOR CCD CAMERA

Designed for a wide range of applications with infrared LED light, microphone, pre-heater, and more.

CC3000E



IR Illuminated Color CCD Camera

- Illumination is provided by the camera's infrared LED light, making it especially convenient when backing up at night or in a dark garage.
- Built-in microphone so you can hear, not just see, what's going behind your vehicle.
- Built-in pre-heater ensures the camera is ready for use at all times.
- Combines cost performance and multi-functionality in a single unit.

Note: Microphone function is available only in combination with the CJ7100E or CJ7300G.



COMPACT COLOR CCD CAMERA

CC1030E



Compact Color CCD Camera (Mirror Image/Wide Angle)

- Compact size and light weight.
- Wide-angle view.



ULTRA COMPACT COLOR CMOS CAMERA

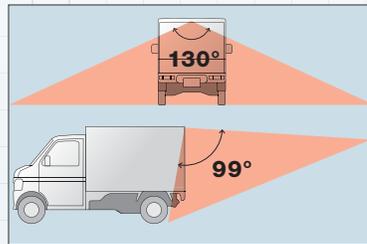
Incorporating high-performance CCDs in ultra-compact bodies, these small CCD color cameras are ideal for smaller vehicles.

CC4100E



Ultra Compact Color CCD Camera

- Wide 130° viewing angle provides the field of view you need even at low mounting positions.
- Small, light design allows for easy mounting.



LIGHT DUTY ULTRA COMPACT COLOR CMOS CAMERAS

Incorporating high-performance CCDs in ultra-compact bodies, these small CCD color cameras are ideal for smaller vehicles.

CC4001U



Ultra Compact Color CCD Camera

- Wide 130° viewing angle provides the field of view you need even at low mounting positions.
- Small, light design allows for easy mounting.



CAU001

Illuminated Licence Plate Frame

- Die Cast Aluminum
- Adjustable Vertical Angle



SDHC VIDEO CAPTURE

Surveillance recording in and around your vehicle is the best way to assure the safety and security of both you and your passengers.

When it comes to surveillance recording, Clarion has the expertise to provide you with the superior, leading-edge technology you demand. Building on our proven reputation for reliability, our CF5000E in-vehicle digital recorder uses a new SDHC memory card, which is a large-capacity version of an SD card. Unlike a conventional hard disk, the SDHC card feature high vibration resistance, low running cost and removable convenience, making it the ideal medium for in-vehicle digital recording.

CF5000E

SDHC Quad Camera Digital Video Recorder



Tamper prevention kit is included.



Large-capacity, easy-to-handle SDHC card

- Data storage on easy-to-handle, large-capacity SDHC cards (up to 16 GB).
- Video data is compressed in the H.264 format and audio data is compressed in the G.726 format, enabling approx. 4 hours of recording per gigabyte (30 fps, 512 kbps, VGA).
- Continuous recording mode is the default setting and event-activated recording mode is also available.

Driving/vehicle data recording

- The CF5000E incorporates a GPS receiver to record vehicle location data and records other data including driving time, vehicle ID, flagged points, activation of the brake and directional signals and door contact status.

Emergency locked file function

- Images recorded while the emergency trigger button is kept depressed cannot be overwritten.

Comprehensive security functions

- A tamper prevention kit with lock is incorporated to protect the CF5000E's main unit.
- Recorded data can only be played back when the vehicle management information is verified via proprietary playback software, which also has a data tampering detection function.

Up to 4 cameras can be connected

- Up to 4 channels of video can be input for extensive coverage of driving and vehicle conditions. When 4 Clarion CCD cameras are installed at various locations inside and outside of the vehicle, areas such as the front of the vehicle, the interior, rear of the vehicle and door areas can be fully covered.
- The CF5000E incorporates a built-in power supply for 4 high-performance, high-reliability Clarion color CCD cameras.

Note: The CC2001 camera with shutter cannot be used.

Automatic Run-On timer function

- The CF5000E can be configured to continue recording for up to 90 minutes after the car's accessory power is turned off.

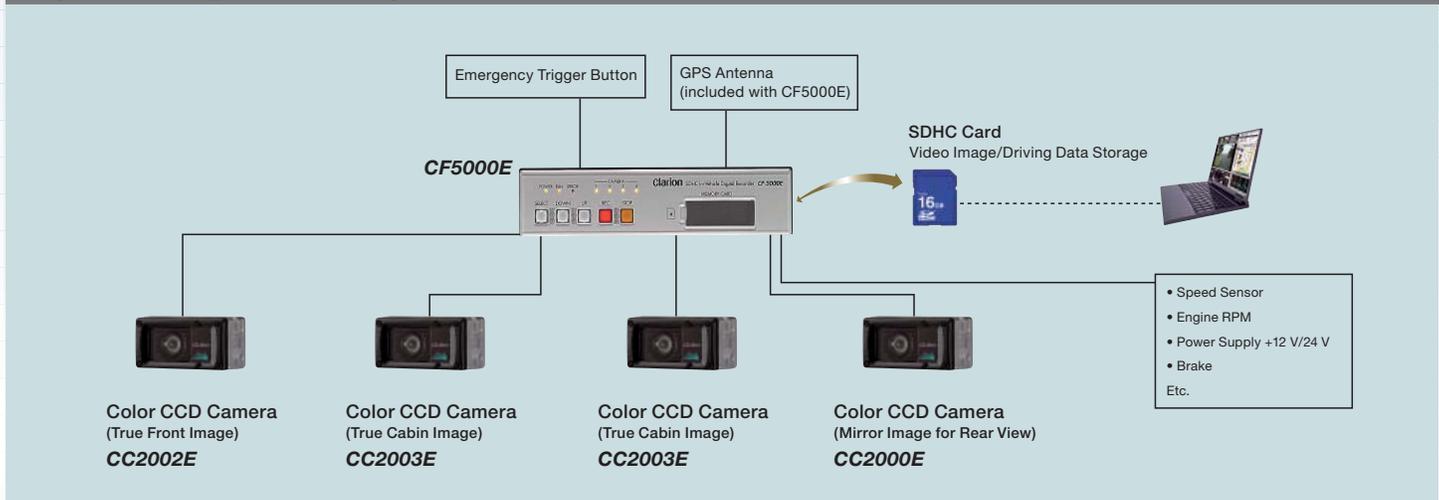
Specifically designed for in-vehicle usage

- Compatible with DC 12–24 V.
- Installation is easy thanks to the compact design.
- Since there are no mechanical moving parts, there is no need for periodic replacement of components.
- Built to stand up to the most severe conditions including vibrations, impact, high humidity, and high temperature.

General Features

- Camera images input as composite video signals (from up to 4 camera systems) can be H.264/AVC compressed and recorded onto an SDHC memory card while being simultaneously display on a quarter-split screen video.
- H.264/AVC files recorded onto the SDHC memory card can be reviewed using dedicated software CTA-042-400 (sold separately).
- The time of recording (year, month, date, hour, minutes and seconds) according to the internal clock can be superimposed onto the camera image.
- Through the use of GPS reception, location information can be recorded together with the video image. Time correction of the internal clock can also be made.
- By using a computer and Class 6 or above SDHC memory card reader/writer, files within the SDHC memory card can be played, backed up, and formatted.

System configuration example



Specifications

Main unit dimensions (excluding tamper prevention mechanism)	178 (W) × 40 (H) × 153 (D) mm	Frame rate	5 to 30 fps (NTSC)
Overall dimensions (including tamper prevention mechanism)	193 (W) × 40 (H) × 170 (D) mm	Resolution	VGA: 640 × 480 / CIF: 352 × 288 (selectable)
Weight	Approx. 1.3 kg	Event recording	Creates an event file that includes the triggered file, the file before the event file and the file after the event file
Power supply	+12 V/+24 V	Overwrite prevention function	Selectable overwrite protection of event files
Recording media	4 GB to 16 GB SDHC memory card Please ask your Clarion dealer for recommended SDHC cards.	Run-On timer function	Recording can be continued for up to 90 minutes after ACC power is switched off
External input terminal	Camera input × 4 (DIN 5P × 4) Alarm input × 4 Audio input × 1 (MIC input or Line input)	Camera angle of view (CC2003E)	Left-Right 118°, Up-Down 97°
External output terminal	Video output × 1 Alarm output × 2 Audio output × 1	Link to GPS mapping	Available
GPS receiver	Built in	Operating temperature range	-10°C~+55°C
Number of connected cameras	4 (Clarion cameras)	Included accessories	<ul style="list-style-type: none"> • Tamper prevention kit • Camera connector • Power cable • Trigger input cable • Mounting bracket • GPS antenna
Recording compression method	MPEG4/AVC (H.264)		

Recording time (Reference values) Recording capacity 16GB

Bit rate [kbps]			2048	1024	512	256	128
No. of frames/sec.	Resolution	Audio recording					
30/sec.	VGA	Available	Approx. 16 hrs.	Approx. 32 hrs.	Approx. 64 hrs.	Approx. 128 hrs.	Approx. 256 hrs.

Note: The recording capacity does not change even when the number of frames is changed. When the number of frames is increased, the picture quality of each frame decreases.

VIDEO CAPTURE SOFTWARE

Offers unprecedented retrieval capability in a conventional viewer, while synchronizing all video images with map routes and velocity graph.

CTA-042

Viewing Software Suite for CF5000E

- Allows you to confirm images as well as driving conditions and locations as they are recorded.
- Sudden braking, abrupt starting, and abrupt steering are listed chronologically to enable retrieval of dangerous driving events. Turn signal and brake/door status are also displayed.

- Map routes and vehicle travelling data can be displayed in sync with video images.
- Velocity values are shown on a graphic display.
- Cockpit view features animated reproduction of driving conditions synchronized with the current on-screen images.

The screenshot displays the software interface with several key components:

- Video view:** A large central window showing a first-person perspective of a road from the driver's seat.
- Cockpit view:** A smaller window below the video view showing an animated dashboard with a steering wheel, speedometer, and gauges.
- Map view:** A window on the right showing a Google Maps-style street view with a yellow route line and vehicle icons.
- List view:** A table at the top right listing driving events with columns for No., Date, Time, Incon., and Type.

No.	Date	Time	Incon.	Type
21	25/10/2008	7:06:25 AM	3	Abrupt steering
22	25/10/2008	7:06:29 AM	1	Brake
23	25/10/2008	7:06:30 AM	3	Abrupt steering
24	25/10/2008	7:06:39 AM	1	Left direction indicator
25	25/10/2008	7:06:39 AM	3	Sudden braking
26	25/10/2008	7:06:43 AM	1	Brake
- Graph view:** A window at the bottom right showing a line graph of Velocity (km/h) and Revolutions (RPM) over time.

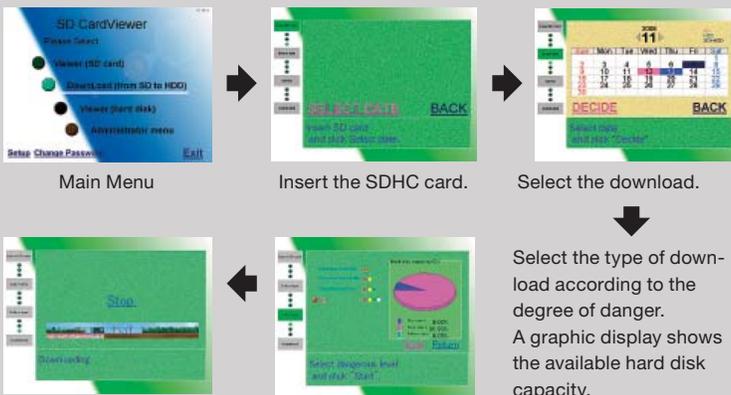
Callouts point to specific elements: 'Video view' points to the main road view; 'Cockpit view' and 'Steering wheel' point to the dashboard; 'Left/right turn signals', 'Speedometer', 'Brake lamp', and 'Reverse lamp' point to specific gauges and indicators in the cockpit view; 'List view' points to the event table; 'Map view' points to the street map; and 'Graph view' points to the velocity and RPM graph.

Information such as Vehicle Speed, Engine RPM, Turn Signals, Brake and Reverse Lamps requires connection during installation.

Download Wizard

Easy-to-operate, user-friendly displays

- Data recorded on the SDHC card can be transferred to your PC's hard disk and stored for playback at anytime.



Note: CTA-042 screen displays are subject to change due to product updates.

Management functions

- Setting and administration of vehicle information such as vehicle names and vehicle numbers.
- Contact setting/danger degree setting.
- Setting operation parameters including recording conditions on SDHC card.
- Data tampering detection function.
- Password management function.



ACCESSORIES

Clarion offers all the cables and accessories required to complete a reliable installation on any kind of vehicle.

Water-resistant Specification Camera Cables for CC2000 Series Camera

- CCA-392** (7m / 23ft.)
- CCA-393** (10m / 33ft.)
- CCA-394** (15m / 49ft.)
- CCA-395** (20m / 65ft.)



Water-resistant specification extension cables

- CCA-439** (0.9m / 3ft.)
- CCA-391** (5m / 16ft.)
- CCA-415** (10m / 33ft.)



Cables & Installation Kit for Trailer

Trailer “break point” to camera cables

- CCA-452** (20m / 65ft.)
- CCA-453** (15m / 49ft.)



- CCA-451** (5m / 16ft.)



Cabin (monitor) to trailer break cable

- CCA-454** (15m / 49ft.)



Power Box (only for 12V vehicles)

CAA-188

- DC12V power box.
- Connects Clarion cameras to Source units with 8pin mini Din.
- Composite video output.



CAA-185

- DC12V power box.
- Composite video output.



Water-resistant Camera Cables for CC4100E Camera

- CCA-532** (7m / 23ft.)
- CCA-533** (10m / 33ft.)
- CCA-534** (15m / 49ft.)
- CCA-535** (20m / 65ft.)



Water-resistant Specification Camera Cables for CC3000E Camera

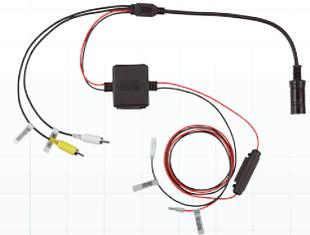
CCA-729

- For connecting CJ5600, CJ7100 & CJ7300G
- 20m / 65ft



CCA-730

- Only for DC12V
- For connecting general purpose AV monitor with video input terminal



Monitor and Cable Accessories

RCA-223

3-Camera Video Switch Box

- Connect up to 3 cameras.



LAA057100

Mounting Bracket for Monitor



CCD CAMERAS	CC2001F/ CC2004E	CC2000E/ CC2003E	CC2002E	CC1030E	CC3000E	CC4100	CC4001U
Dual chamber design	Y	Y	Y	N	N	N	N
Motorized lens shutter	Y	N	N	N	N	N	N
Digital zoom (x 1.4)	Y	Y	Y	N	N	N	N
IR LED	N	N	N	N	Y	N	N
Microphone	N	N	N	N	Y	N	N
Low light rating (lux)	1	1	1	3 or less	0.01 (6 LED ON)	3 or less	3 or less
Iris function	Y	Y	Y	N	N	N	N
CCD pixels	250,000	250,000	250,000	250,000	250,000	307,200	307,200
View angle(horiz./vert.)	118/97	118/97	40/30	115/88	95/70	130/99	130/98.8
Operating temperature range	-30°C to +70°C	-30°C to +70°C	-30°C to +70°C	-30°C to +70°C	-10°C to +60°C	-30°C to +70°C	-30°C to +70°C
CCD size	1/4"	1/4"	1/4"	1/4"	1/3"	1/4"	1/4"
Power voltage (camera)	9Vdc.neg connection	9Vdc.neg connection	9Vdc.neg connection	9Vdc.neg connection	12Vdc.neg connection	9Vdc.neg connection	9Vdc.neg connection
Current consumption (camera)	Less than 150mA	Less than 150mA	Less than 150mA	Less than 150mA	Less than 200mA	Less than 120mA	Less than 120mA
Power voltage (shutter)	DC12V	N/A	N/A	N/A	N/A	N/A	N/A
Current consumption (shutter)	Less than 300mA	N/A	N/A	N/A	N/A	N/A	N/A
Vibration rating (G-force)	10	10	10	10	6.8	6.8	6.8
True/Mirror image select	Mirror(CC2001F)/ True(CC2004E)	Mirror(CC2000E)/ True(CC2003E)	True	Mirror	Mirror	Mirror	Mirror
Size (W x H x D mm)	80 x 40.5 x 57.4	80 x 40.5 x 53	80 x 40.5 x 53	48 x 35 x 32.5	70 x 44 x 57	23.5 x 23.4 x 22	27 x 25 x 28.3
Weight	300g	260g	260g	100g	238g	80g	72g
Signal system	NTSC	NTSC	NTSC	NTSC	NTSC	NTSC	NTSC

LCD COLOR MONITORS	CJ5600E	CJ7100E	CJ7300G
Diagonal screen size (inches)	5.6	7	7
Power supply	DC12V/24V	DC12V/24V	DC12V/24V
Power consumption	550mA (DC12V, monitor set only)	450mA (DC12V, monitor set only)	900mA (DC14V, with one Camera)
Picture element pixel	320 (W) x 3 (RGB) x 234 (H)	480 (W) x 3 (RGB) x 234 (H)	800 (W) x 3 (RGB) x 480 (H)
Built-in speaker	N	Y	Y
Volume control	N/A	Y	Y
Day/Night dimming	MAN	MAN	MAN
Image:True/Mirror	Selectable	Selectable	Selectable
Reverse gear on trigger	Y	Y	Y
Camera switcher	Y (2 cameras)	Y (2 cameras)	Y (4 cameras)
Auto triggering for 2nd camera	Y	Y	Y
Auto triggering for 3rd camera	N	N	Y
Separate video input	N	Y	Y
Separate video output	N	N	N
Separate audio input	N	Y (MONO INPUT)	Y (MONO INPUT)
Separate audio output	N	N	N
Electronic distance markers	N	N	Y (adjustable)
Operating temperature range	-10°C to +60°C	-10°C to +60°C	-10°C to +60°C
Size (W x H x D mm)	163 x 112 x 30	187 x 113.5 x 26.6	174 x 125 x 27
Weight	300g	450g	480g
Signal system	NTSC (switch between NTSC/PAL)	NTSC (switch between NTSC/PAL)	NTSC

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