## Technical Specifications

# Thermal Imaging Bullet IP Camera

- 17 μm uncooled VOx microbolometer
- 320x240 / 640x480 Resolutions
- 30 fps or 9fps version for global commercial applications
- Flexible input power options: AC, DC, PoE
- 802.3af (PoE) simplified installation over a single standard cable
- Two-way audio
- Embedded VCA Technology video analytics
- Embedded Storage and Edge Recording
- Image Contrast Enhancement (ICE) features
- IP and analog connectivity
- Indoor/Outdoor (IP66)

| CAMERA MODULE (Pixel Array) | |
|---|---|
| Array Size (Resolution) | **ITC6500QD:** 320x240<br>**ITC6500VD:** 640x480 |
| Detection Type | Uncooled Vanadium Oxide Microbolometer |
| Sensor Pixel Size | **ITC6500QD / ITC6500VD:** 17 μm |
| Spectral Response | 8-14 μm |
| Sensitivity (NETD) | < 50 mK at f/1.0 |
| Lens (FOV) | **ITC6500QD:** 6°, 9°, 16°,24°, 42°, 60°<br>**ITC6500VD:** 12°, 18°, 25°, 37°, 50° |
| Scanning System | Progressive Scan |

| VIDEO | |
|---|---|
| Video Compression | H.264 Baseline, Main, High profile(MPEG-4 Part 10/ AVC), MJPEG(Motion JPEG) |
| Video Streaming | Dual Stream, Configurable streams in H.264, MJPEG<br>H.264: Controllable frame rate, bandwidth(VBR/CBR)<br>MJPEG: Controllable frame rate, JPEG quality |
| Resolutions | **ITC6500QD:**<br>640x480 (VGA, Scaled-up), 320x240 (QVGA), 160x120 (QQVGA)<br>**ITC6500VD:**<br>640x480 (VGA), 320x240 (QVGA), 160x120 (QQVGA) |
| Frame Rate | Configurable up to 30 FPS or 9 FPS* |
| Image Settings | Configurable brightness, contrast, and sharpness |
| Image Orientation | Flip / Mirror / Corridor Mode(-90°, +90°) |
| Motion Detection | Supported |
| Video Stabilization | Supported |
| Burnt-in Text | Supported |
| Privacy Mask | 4 configurable regions |
| Image Process | Image Contrast Enhancement (ICE™) |
| Gain / Level Control | Automatic |
| Smart Bitrate Control | Supported |
| Analog Output | NTSC / PAL |

| AUDIO | |
|---|---|
| Audio Streaming | Two-way |
| Audio Compression | G.711-uLaw |
| Audio Input / Output | Supported |

| NETWORK | |
|---|---|
| Ethernet Standard | 10 / 100 Base-T |
| IP | IPv4, IPv6 |
| Protocol | QoS Layer 3 DiffServ, TCP/IP, UDP/IP, HTTP, HTTPS, FTP, RTSP, RTCP, RTP/UDP, RTP/TCP, mDNS, UPnP™, SMTP, DHCP, DNS, DynDNS, NTP, SNMP v2c/v3(MIB-II), IGMP, ICMP, SSLv2/v3, TLS, SRTP, RTMP |
| Security | HTTPS(SSL), SRTP, IP Filtering, Multi-level access with password protection |
| Users | Live viewing for up to 10 clients |

| INTEGRATION | |
|---|---|
| Application Programming Interface | Software Development Kit(SDK) available |
| ONVIF Compliance | Profile S, Profile G |
| Event Sources | Sensor(DI); Alarm(DO); Video Motion Detection; Tamper Detection; Video Content Analytics(VCA); Network Loss/Detect; Network Setting Change; Time(Recurrence/Schedule); Storage Error |
| Event Actions | File upload: E-mail, FTP<br>Notification: E-mail, FTP, HTTP, TCP(push, multicast, TCP event server)<br>Active alarm(DO)<br>Recording<br>Event Log Saving |
| Event Metadata Streaming (RTSP/RTP) | Video Motion Detection(MD); Video Content Analytics(VCA) |

| GENERAL | |
|---|---|
| Material | Poly-carbonate, Aluminum |
| External I/O Terminals | 1x Alarm In, 2x Alarm Out, RS-485 |
| Language on Webpage | Korean, English, Chinese |
| Power Source / Consumption | DC 12V, AC 24V, PoE / 10W@12VDC |
| Weight | Approx. 1.2kg(2.65lb) |
| Dimensions (H x V x D) | 3.7" x 3.9" x11.5" (95 x 98 x 293 mm) |

## Technical Specifications

| | |
|---|---|
| Operating Temperature | -40°C ~ 60°C (-40°F ~ 140°F) |
| Storage Temperature | -50°C ~ 70°C (-58°F ~ 158°F) |
| Temperature Shock | -45°C ~ 65°C (-49°F ~ 149°F) |
| Humidity | Humidity up to 90% RH (non-condensing) |
| Approvals | KCC, KC safety(SDOC), FCC, CE, IP66, UL (all in progress) |
| Protection for Water and Dust | IEC 60529 IP66 |
| Functional Vibration | 10Hz to 30Hz, Amplitude 3.5mm , 1 hour |
| Handling Shock | Test Standard ISO 2248, dropping height based on ISTA2008 Resource book |
| EMI Testing | FCC Part 15 Subpart B Class A |
| Safety | UL 60065, 7th Edition, 2007-12-11, CAN/CSA-C22.2 No. 60065-03, 1st Edition, 2006-04 + A1:2006 |
| RoHS Compliance | European RoHS directive, 2011/65/EU |
| CE Mark Certification | Compliant to 2014/30/EU directive |

| VIDEO ANALYTICS | |
|---|---|
| High Performance | Advanced tracking algorithm, low false alarm rate |
| Easy to Use | Intuitive web browser interface |
| Detection Zones | Multi-segment polygons and lines |
| On-screen Display | Real-time display of tracking data and events |
| Tamper Detection | Detect camera tampering |
| Presence Filter | Detect presence of an object |
| Detection Behavior | Direction and Dwell filters |
| 3D Behavior | Perspective corrected size, speed filters and calibration |

| VIDEO ANALYTICS (OPTIONAL FEATURES) | |
|---|---|
| Detection Behavior | Enter, Exit, Appear, Disappear, Stop, Tailgating filters |
| Logical Rules | Extends standard rules to allow various combinations of the inputs |
| Counting Line | High accuracy people and vehicle counting |
| Counter | 20 counters in total |
| Counting Report | Generates counter reports based on the counter database |
| Meta Data | Plain XML Format |

| EDGE STORAGE | |
|---|---|
| Storage | microSDHC memory card embedded (optional) |
| Recording Types | Continuous Recording or Event Recording |
| Continuous Recording | Instant recording; Search & Download |
| Event Recording | Search of Event Logs; Playback; Download |

## Models by Resolution

| 320x240 Resolution | | | |
|---|---|---|---|
| Model | FPS | FOV | Standard |
| ITC6500QD-30A06 | 30 | 6.2 x 4.6 | QVGA |
| ITC6500QD-30A09 | 30 | 9 X 6.7 | QVGA |
| ITC6500QD-30A16 | 30 | 16 X 12 | QVGA |
| ITC6500QD-30A24 | 30 | 24 X18 | QVGA |
| ITC6500QD-30A42 | 30 | 41.8 X 31.4 | QVGA |
| ITC6500QD-30A60 | 30 | 60 X 45 | QVGA |
| ITC6500QD-9A06 | 9 | 6.2 x 4.6 | QVGA |
| ITC6500QD-9A09 | 9 | 9 X 6.7 | QVGA |
| ITC6500QD-9A16 | 9 | 16 X 12 | QVGA |
| ITC6500QD-9A24 | 9 | 24 X 18 | QVGA |
| ITC6500QD-9A42 | 9 | 41.8 X 31.4 | QVGA |
| ITC6500QD-9A60 | 9 | 60 X 45 | QVGA |

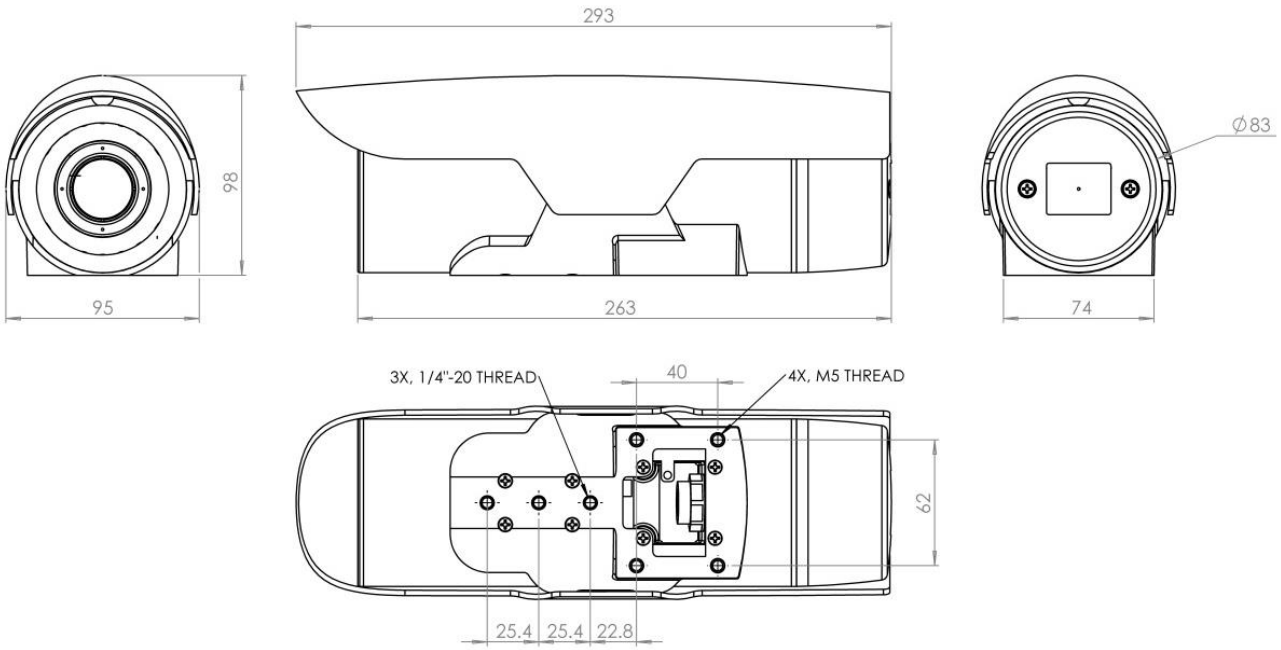
| 640x480 Resolution | | | |
|---|---|---|---|
| Model | FPS | FOV | Standard |
| ITC6500VD-30A12 | 30 | 12.4 X 9.3 | VGA |
| ITC6500VD-30A18 | 30 | 17.6 X 13.2 | VGA |
| ITC6500VD-30A25 | 30 | 24.8 X 18.6 | VGA |
| ITC6500VD-30A37 | 30 | 37.5 X 28 | VGA |
| ITC6500VD-30A50 | 30 | 49.8 X 37 | VGA |
| ITC6500VD-9A12 | 9 | 12.4 X 9.3 | VGA |
| ITC6500VD-9A18 | 9 | 17.6 X 13.2 | VGA |
| ITC6500VD-9A25 | 9 | 24.8 X 18.6 | VGA |
| ITC6500VD-9A37 | 9 | 37.5 X 28 | VGA |
| ITC6500VD-9A50 | 9 | 49.8 X 37 | VGA |

**9 Hz models are export controlled by the U.S. Department of Commerce under ECCN 6A993.*
*30 Hz models are export controlled by the U.S. Department of Commerce under ECCN 6A003b.4.b.*
*The commodities described herein may require the U.S. Government authorization prior to export or re-export.*

## Technical Specifications

### Dimensions

(Unit: mm)



## Technical Specifications

### Detection Range

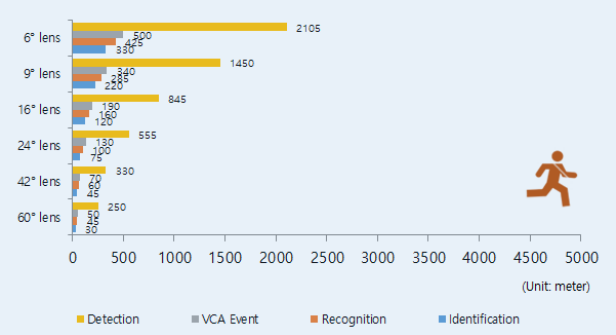
*The detection range is of the maximum values.

(Unit: meter)

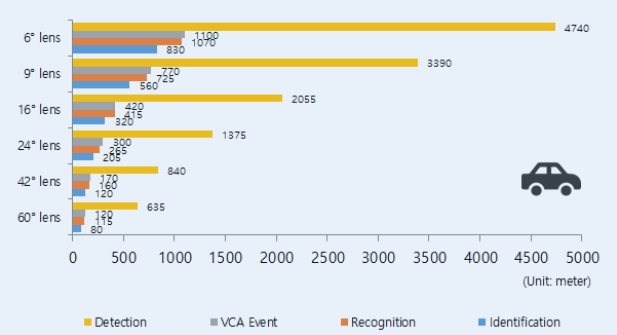
**ITC6500QD**

| Lens | Object | Detection | VCA Event | Recognition | Identification |
|---|---|---|---|---|---|
| 6° | Person | 2,105 | 500 | 425 | 330 |
| | Vehicle | 4,740 | 1100 | 1,070 | 830 |
| 9° | Person | 1,450 | 340 | 285 | 220 |
| | Vehicle | 3,390 | 770 | 725 | 560 |
| 16° | Person | 845 | 190 | 160 | 120 |
| | Vehicle | 2,055 | 420 | 415 | 320 |
| 24° | Person | 555 | 130 | 100 | 75 |
| | Vehicle | 1,375 | 300 | 265 | 205 |
| 42° | Person | 330 | 70 | 60 | 45 |
| | Vehicle | 840 | 170 | 160 | 120 |
| 60° | Person | 250 | 50 | 45 | 30 |
| | Vehicle | 635 | 120 | 115 | 80 |

**Person**



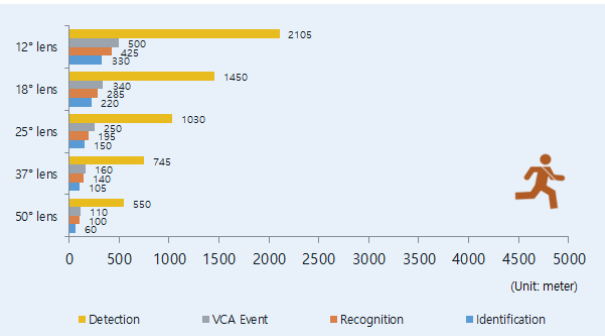

**Vehicle**



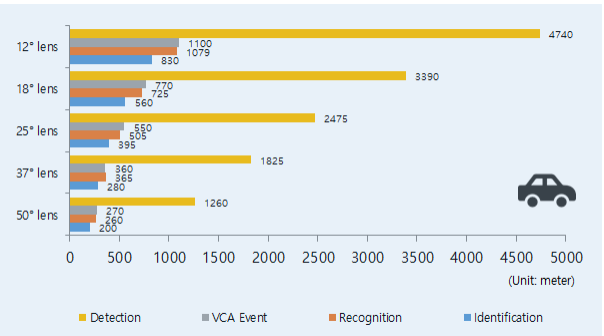

**ITC6500VD**

| Lens | Object | Detection | VCA Event | Recognition | Identification |
|---|---|---|---|---|---|
| 12° | Person | 2,105 | 500 | 425 | 330 |
| | Vehicle | 4,740 | 1,100 | 1,079 | 830 |
| 18° | Person | 1,450 | 340 | 285 | 220 |
| | Vehicle | 3,390 | 770 | 725 | 560 |
| 25° | Person | 1,030 | 250 | 195 | 150 |
| | Vehicle | 2,475 | 550 | 505 | 395 |
| 37° | Person | 745 | 160 | 140 | 105 |
| | Vehicle | 1,825 | 360 | 365 | 280 |
| 50° | Person | 550 | 110 | 100 | 60 |
| | Vehicle | 1,260 | 270 | 260 | 200 |

**Person**




**Vehicle**

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