Redvision™

NDAA Compliant

CCTV | IP & Analogue PTZ

# X2 COMBAT S - HYBRID

## Key Features

- Dual IP and Analogue PTZ Camera
- Pelco P and D Telemetry
- ONVIF (Profile S, G & T) Compliant
- Tough, rugged camera, Marine-Grade finish as standard
- Adaptive White Light and IR (zoom-linked) operation
- VMS Integration, including Redvision VMS1000
- Rugged Mounting Bracket Options
- Brushless Stepper Motors for Resilience and Durability
- SD Card recording option, up to 1TB.
- Long Life Silicone Wiper

ONVIF™ Member

## X2 COMBAT Hybrid rugged ball PTZ

The X2-COMBAT rugged, ball PTZ cameras are designed for tough, outdoor, surveillance applications. The X2-COMBAT uses advanced production techniques and state-of-the-art technology to offer a world-class, rugged CCTV camera with a best-in-class, feature set. The die-cast aluminium body is anodised before being powder coated, making the camera environmentally tough and resistant to malicious attack or vandalism.

Everything about the X2-COMBAT rugged, ball PTZ is of high quality. All moving parts are designed to last; from its long-life, silicon wiper through to the motor technology used in its pan and tilt mechanism and its 30x optical zoom camera module, with exceptional low-light performance. The camera is perfectly balanced, minimising component wear and giving a mean time before failure (MTBF) rating of 7 years.

## Dual Analogue and IP PTZ

The Hybrid X2-COMBAT can be used as either an IP or an analogue PTZ camera. This allows users to install the unit into sites with legacy analogue infrastructure, and keep the same HD camera for when an IP upgrade is permitted. The camera has coaxial video output, and Pelco P or D telemetry control; along with IP connectivity and ONVIF compliance.

## Intuitive, operator control

The X2-COMBAT has intuitive, operator control, from fast pan and tilt speeds of up to 180° / second to speeds of less than 0.1° / second, for when an operator is precisely tracking a target. The COMBAT™ also features long-life, super-efficient, white-light and IR LED illumination technologies, for night-time operation.

3D positioning allows operators simple control of the X2-COMBAT™ PTZ. Quick and simple setup directly from the COMBAT™'s Web User Interface; or tracking targets by mouse click from a compatible control platform, latency and over run are no longer an issue.

## VMS Integration Including Redvision VMS1000

ONVIF is an open industry standard that defines a communication protocol for IP-based video surveillance devices. This allows different manufacturers' cameras and video management software (VMS) to interoperate. Redvision VMS1000 is an ONVIF-compliant VMS that can be used to manage a wide range of IP cameras, with an enhanced SDK level integration into all Redvision's cameras.

## Simple install, maintenance free

The X2-COMBAT is designed for easy installation and configuration. A complete range of brackets, mounts and cable extensions allow upright or hanging installation in any environment, with a choice of RAL colour options to order. Cantilever arms enable the camera to view directly downwards on pole or tower mounts.

The X2-COMBAT mounting bracket has a 4" PCD mount with M8 clearance holes. A complete range of brackets, mounts and cable extensions are also available, which are zinc plated then powder coated.

The X2-COMBAT utilises a tooled silicone wiper option to keep the camera's view through the flat, scratch-resistant window free of water and dirt. A linkage-free, sprung steel mechanism reduces wiper wear and a polycarbonate window gives an even tougher option. Wiper activation is by a button press on VMS systems, including the VMS1000™, or by pre-set.

## Extensive features

The X2-COMBAT has an extensive range of features including four video streams for recording, visualisation, set-up and servicing; H265, H264 and MJPEG compression; optional 1TB maximum SD card-based edge storage; ONVIF compliance to Profile S and G; 400 pre-sets, 12 tours, 12 scans, 6 tracks and 20 privacy masks; alarms, motion detection, intelligent analytics; and its operating temperature range is -40°C to 70°C.

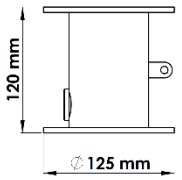
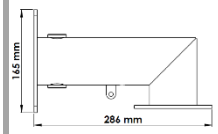
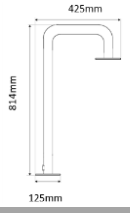
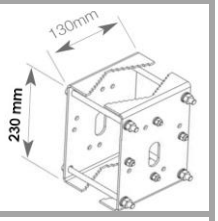
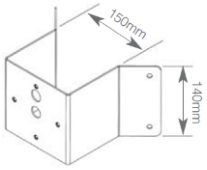
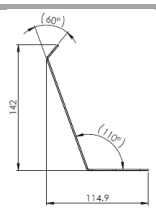
## Night-Time Performance

The Redvision X2-COMBAT rugged, ball PTZ cameras have infra-red (IR) and white light illumination options, using long-life, super-efficient LEDs. DORI (Detection, Observation, Recognition and Identification) tests show that the X2-COMBAT performs up to 300m.

The X2-COMBAT has Osram adaptive illumination, automatically adjusting IR and white light intensity in proportion to zoom and scene content. This feature ensures scene images are well-lit, but not bleached by over-exposure.

White light can be switched on as a visual deterrent to intruders.

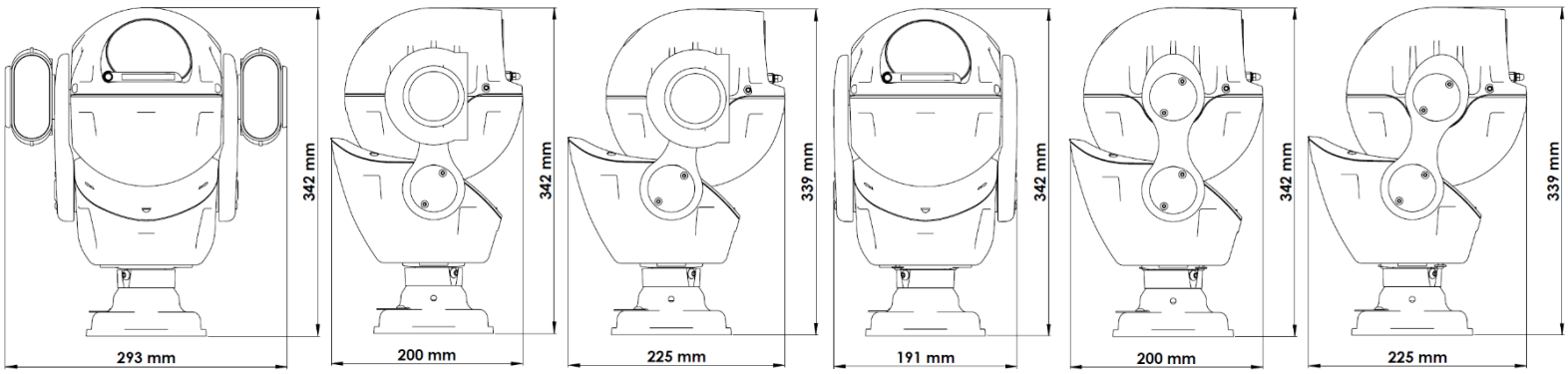
| Image | Part Code and Description |
|---|---|
|  | **RVX2S-HYB-G:** 30:1 4MP Hybrid IP and Analogue Ball PTZ, WIPER - Light Grey |
|  | **RVX2S-HYB-B:** 30:1 4MP Hybrid IP and Analogue Ball PTZ, WIPER - Black |
|  | **RVX2S-HYB-IR-G:** 30:1 4MP Hybrid IP and Analogue Ball PTZ, IR, WIPER - Light Grey |
|  | **RVX2S-HYB-IR-B:** 30:1 4MP Hybrid IP and Analogue Ball PTZ, IR, WIPER - Black |
|  | **RVX2S-HYB-IRWL-G:**30:1 4MP Hybrid IP and Analogue Ball PTZ, IR/ White Light, WIPER - Light Grey |
|  | **RVX2S-HYB-IRWL-B:**30:1 4MP Hybrid IP and Analogue Ball PTZ, IR/ White Light, WIPER - Black |

| Image | Part Code and Description | Drawing |
|---|---|---|
|  | **RVX2-STANDOFF-G**: 120 mm Standoff mount bracket - Light Grey<br><br>**RVX2-STANDOFF-B**: 120 mm Standoff mount bracket - Black |  |
|  | **RVX2-WALL-G**: Wall mount bracket - Light Grey<br><br>**RVX2-WALL-B**: Wall mount bracket - Black |  |
|  | **RVX2-SWAN-G**: Swan mount bracket - Light Grey<br><br>**RVX2-SWAN-B**: Swan mount bracket - Black |  |
|  | **RVX2-POLE-G**: Pole mount adaptor 60-90mm for RVX2-WALL - Light Grey<br><br>**RVX2-POLE-B:** Pole mount adaptor 60-90mm for RVX2-WALL - Black |  |
|  | **RVX2-CNR-G**: Corner Mount adapter for RVX2-WALL - Light Grey<br><br>**RVX2-CNR-B**: Corner Mount adapter for RVX2-WALL - Black |  |
|  | **RVX2-VISOR-G**: Sun & rain Visor (only applies when camera is mounted in upright position) - Light Grey<br><br>**RVX2-VISOR-B**: Sun & rain Visor (only applies when camera is mounted in upright position) - Black | |
|  | **RVX2-WASH:** Washer nozzle kit – compatible with standard CCTV wash pumps |  |
|  | **RV-HYB-PSU**: 24V DC PSU for X2 Hybrid Camera | |
| Other | **RVX2-SD, RVX2-PC4, RV-HYB-CABLE-5/10/20** | |

# Redvision™ Technical Specification

| Camera | |
|---|---|
| Image Sensor | 1/2.8” Progressive Scan CMOS |
| Effective Pixels | 2592(H)×1520(V) |
| Electronic Shutter | Auto/Manual, 1/5 ~ 1/20,000s |
| Min. illumination | Colour: 0.01 Lux @ (F1.6, AGC ON)<br>B/W: 0.001 Lux, 0 Lux (IR LED ON) |
| S/N Ratio | 55 dB |
| Day/Night | Auto(ICR)/Day / Night/Timing |
| Wide Dynamic Range | True WDR |
| IR On/Off Control | Auto/Manual |
| **Lens** | |
| Focal Length | 5.3 ~ 159mm |
| Max. Aperture | F1.6 ~ F4.3 |
| Angle of View | H: 55° ~ 2.3°, V: 41.6° ~ 1.7° |
| Optical Zoom | 30x |
| Focus Control | Auto/Manual |
| **PTZ** | |
| Pan/Tilt Range | Pan: 360° continuous Tilt: 150°<br>(Cantilever function gives 180° view range) |
| Manual Control Speed | Pan: 0.1° ~ 180°/s, Tilt: 0.1° ~ 90°/s |
| Preset Speed | Pan: 180°/s, Tilt: 90°/s |
| Presets | 400 |
| PTZ Mode | 6 Track, 12 Scan, 12 Tour (up to 32 presets per tour) |
| 3D Positioning | Supported |
| Power-Off Memory | Supported |
| PTZ Status Display | Supported |
| Idle Motion | Activate Preset/ Scan/ Tour/ Track if there is no command in the specified period |
| **Video** | |
| Encoding | H.264 / H.265 / MJPEG / Smart Encode |
| Max. Resolution | 4MP (2592×1520) |
| Streaming Capability | 3 Streams |
| Stream/Frame Rate | Stream1: 2592×1520, 2560×1440, 2304×1296, , 1920×1080, 1280×720 @ 25/30fps<br>Stream2: 1920×1080, 1280×720, D1, VGA, 640×360, CIF, QVGA @ 25/30fps<br>Stream3: VGA, CIF, QVGA @ 25/30fps |
| Bit Rate Control | CBR/VBR |
| Bit Rate | Stream1: 200kbps~12Mbps<br>Stream2: 10kbps~3Mbps<br>Stream3: 10kbps~1.5Mbps |
| Image Setting | HLC / BLC / Defog / WDR / Anti-shake (DIS) / Brightness / Saturation / Sharpness / Contrast / Exposure Control / Scene |
| Noise Reduction | 2D/3D DNR |
| Region of Interest | Off/On (8 Zone, Rectangle) |
| Privacy Masking | Up to 20 Masks |
| **Event** | |
| Alarm Triggers | IVA, Motion detection, Alarm input, Network alarm, SD alarm, Day/Night switch alarm |
| Event Actions | Alarm record, Alarm output, FTP upload, SMTP upload |

| Network | |
|---|---|
| Protocols | IPv4/IPv6, 802.1x, HTTP, HTTPS, TCP/IP, UDP/IP, RTSP, DHCP, NTP, RTCP/RTP, PPPoE, SMTP, DNS, UPnP, FTP, ARP, SNMP, TLS/SSL, IGMP, DNS, DDNS, ICMP, QOS |
| Interoperability | ONVIF (Profile S, G & T), SDK, CGI |
| Streaming Method | Unicast |
| Max. User Access | 10 Users |
| Edge Storage | Built-in Micro SD slot, up to 1TB |
| Web Viewer | Microsoft Windows: ≤IE11, Chrome, Firefox, Microsoft Edge<br>MacOS: Chrome, Firefox |
| **Analogue Connectivity** | |
| Coaxial Video | CVBS |
| Resolution | 650 TVL, D1 (720x576 pixels) |
| Telemetry | Pelco P and D |
| **Intelligence & Alarm** | |
| Auto Tracking | Supported |
| Alarm | Motion alarm, Disk alarm, Day/Night switch alarm, Network alarm, Audio abnormal alarm, Alarm push |
| Intelligent Analysis | Intrusion, Single line crossing, Double line crossing, Loitering, Wrong-way detection, Illegal parking, and Smart motion detection |
| **Electrical and Physical** | |
| Power Supply | 24VDC (-15% to +20%) via PSU module; input 100~240VAC 50/60Hz. |
| Power Consumption | 24VDC: 50W. |
| Dimensions | Non-LED models: H 340mm W 191mm<br>LED models: H 340mm W 293mm |
| Weight | 5.2kg without lamps, 5.8kg with lamps |
| Operating Temperature | -40°C ~ +70°C<br>(Light colours only, Black: 50°C) |
| Impact Rating | Meets IK10 standards (with Polycarbonate window fitted) |
| Corrosion Testing | BS EN ISO 9227:2022 1000 Hours Salt Spray |
| Ingress Protection | Meets IP68 standards |
| Relative Humidity | ≤95%, non-condensing |
| Vibration Testing | See technical standards |
| EMC | See technical standards |
| Camera Body | Marine finish as standard, Aluminium, die-cast alloy, with anodised, powdercoated finish |
| Wiper Blade | Tooled silicone |
| Colour | RAL 7035 Light-Grey or RAL 9005 Black. Custom RAL made to order. |
| **Lighting & DORI** | |
| Illumination Range | IR (850nm) to 300m<br>White Light to 250m |
| DORI Category | Distances calculated as per IEC 62676-4: |
| Detection (25PPM) | Wide: 99.5m, Tele: 2,583.7m |
| Observation (62.5PPM) | Wide: 39.8m, Tele: 1,033.5m |
| Recognition (125PPM) | Wide: 19.9m, Tele: 517.0m |
| Identify (250PPM) | Wide: 9.95m, Tele: 258.5m |



| Environmental | |
|---|---|
| Cold Test | EN 60068-2-1:2007 Test Ae -40°C |
| Dry Heat Test | EN 60068-2-2:2007 Test Be +70°C |
| Damp Heat Test, Cyclic Test | EN 60068-2-30:2005 Test Db |
| Vibration Test | EN 50556:2018 Section 6.3.2 & Table 4 Class AL & Section 6.3.1.5 & EN 60068-2-64:2008 Test Fh |
| IPX8 | IEC 60529:1989+A1:1999+A2:2013+COR1:2019 |
| IP6X | IEC 60529:1989+A1:1999+A2:2013+COR1:2019 |
| Salt Spray | BS EN ISO 9227:2022 1000 Hours Salt Spray |

| EMC Emission | |
|---|---|
| Conducted Emissions at Mains Power Port (150kHz-30MHz) | EN 55032:2015+A11:2020+A1:2020 |
| Asymmetric Mode Conudcted Emissions (150kHz-30MHz) | EN 55032:2015+A11:2020+A1:2020 |
| Radiated Emissions (30MHz – 1GHz) | EN 55032:2015+A11:2020+A1:2020 |
| Radiated Emissions (Above 1Ghz) | EN 55032:2015+A11:2020+A1:2020 |
| Harmonic Current Emission | EN IEC 61000-3-2:2019+A1:2021 |
| Voltage Fluctuations and Flicker | EN 61000-3-3:2013+A1:2019+A2:2021 |

| EMC Immunity | |
|---|---|
| Electrostatic Discharge | EN 55035:2017+A11:2020 & EN 50130-4:2011+A1:2014 |
| Radiated Immunity (80MHz-1GHz, 1800MHz, 2600MHz, 3500MHz, 5000Mhz) | EN 55035:2017+A11:2020 |
| Radiated Immunity (80MHz-2.7GHz) | EN 50130-4:2011+A1:2014 |
| Electrical Fast Transients & Burst at AC Power Port | EN 55035:2017+A11:2020 & EN 50130-4:2011+A1:2014 |
| Electrical Fast Transients & Bursts at Signal Port | EN 55035:2017+A11:2020 & EN 50130-4:2011+A1:2014 |
| Surge at AC Power Port | EN 55035:2017+A11:2020 & EN 50130-4:2011+A1:2014 |
| Surge at Signal Port | EN 55035:2017+A11:2020 & EN 50130-4:2011+A1:2014 |
| Conducted Immunity at AC Power Port (150kHz-80MHz) | EN 55035:2017+A11:2020 & EN 50130-4:2011+A1:2014 |
| Conudcted Immunity at Signal Port (150kHz-80MHz) | EN 55035:2017+A11:2020 & EN 50130-4:2011+A1:2014 |
| Voltage Dips and Interruptions | EN 55035:2017+A11:2020 & EN 50130-4:2011+A1:2014 |
| Mains Supply Voltage Variations | EN 50130-4:2011+A1:2014 |