



# TANDBERG Codec C90

The TANDBERG Codec C90 is the most powerful, flexible telepresence and collaboration engine available, delivering crisp, clear 1080p end-to-end HD video, HD collaboration and HD embedded MultiSite. With more inputs and outputs than ever before, the integration possibilities are endless.



Also available as an integrator package with a PrecisionHD™ 1080p camera and two microphones.

#### DESIGN FEATURES

- The best, most powerful codec available with the ultimate in video and audio quality
- 2U high, rack-mountable, with rack mounting solution included
- Professional grade connectors
- Unmatched quality and flexibility
- Standards-compliant 1080p solution-compatible with standards-based video without losing features

#### APPLICATION FEATURES

- 1080p30 HD embedded MultiSite with Individual Transcoding
- Collaborate on virtually anything with 5 simultaneous video inputs
- HD Collaboration with 1080p30 and UXGA\*
- Limitless integration possibilities
- Ideal for telepresence and collaboration studios, boardrooms, auditoriums, education and telemedicine applications

#### PERFORMANCE FEATURES

- Optimal Definition up to 1080p
- H.323/SIP up to 6 Mbps point-to-point; up to 10 Mbps total MultiSite bandwidth
- Connect up to 12 HD sources and 8 microphones directly into the interface
- Full Duplex Audio with high-quality stereo sound
- Full APIs
- Takes advantage of the TANDBERG Total Solution Management, Transcoded HD MultiSite™, Recording and Streaming, Firewall Traversal

GET THE MOST FROM YOUR INVESTMENT. WITH **PROFESSIONAL SERVICES**, TANDBERG EXPERTS SUPPORT TANDBERG CODEC C90 DEPLOYMENT AND TRAINING. VISIT [WWW.TANDBERG.COM](http://WWW.TANDBERG.COM)

## UNIT DELIVERED COMPLETE WITH:

Videoconferencing codec, wireless remote control, rackmounting rails, LAN cable, power cable

## BANDWIDTH

H.323/SIP up to 6 Mbps point-to-point  
Up to 10 Mbps total MultiSite bandwidth

## FIREWALL TRAVERSAL

TANDBERG Expressway™ Technology  
H.460.18, H.460.19 Firewall Traversal

## VIDEO STANDARDS

H.261, H.263, H.263+, H.264

## VIDEO FEATURES

Native 16:9 Widescreen  
Advanced Screen Layouts  
Intelligent Video Management  
Local Auto Layout

## VIDEO INPUTS (13 INPUTS)

### 4 X HDMI INPUTS, SUPPORTED FORMATS:

1920 x 1080@60 fps (1080p60)  
1920 x 1080@50 fps (1080p50)  
1920 x 1080@30 fps (1080p30)  
1920 x 1080@25 fps (1080p25)  
1280 x 720@60 fps (720p60)  
1280 x 720@50 fps (720p50)  
640 x 480@60 fps (480p60)  
800 x 600@60 fps (SVGA)  
1024 x 768@60, 70, 75, 85 fps (XGA)  
1280 x 1024@60, 75 fps (SXGA)

### 4 X HD-SDI INPUTS, SUPPORTED FORMATS:

1920 x 1080@30 fps (1080p30)  
1920 x 1080@25 fps (1080p25)  
1280 x 720@60 fps (720p60)  
1280 x 720@50 fps (720p50)  
1280 x 720@30 fps (720p30)  
1280 x 720@25 fps (720p25)

### 2 X DVI-I INPUTS, SUPPORTED FORMATS:

Analog (VGA):  
1024 x 768@60, 70, 75, 85 fps (XGA)  
1280 x 1024@60, 75 fps (SXGA)

Digital (DVI-D):

1920 x 1080@60 fps (1080p60)  
1920 x 1080@50 fps (1080p50)  
1920 x 1080@30 fps (1080p30)  
1920 x 1080@25 fps (1080p25)  
1280 x 720@60 fps (720p60)  
1280 x 720@50 fps (720p50)  
640 x 480@60 fps (480p60)  
800 x 600@60 fps (SVGA)  
1024 x 768@60, 70, 75, 85 fps (XGA)  
1280 x 1024@60, 75 fps (SXGA)

### 2 X YPBPR INPUTS, SUPPORTED FORMATS:

1920 x 1080@60fps (1080p60)  
1920 x 1080@50fps (1080p50)  
1920 x 1080@30fps (1080p30)  
1920 x 1080@25fps (1080p25)  
1280 x 720@60fps (720p60)  
1280 x 720@50fps (720p50)  
1280 x 720@30fps (720p30)  
720 x 576@50fps (576p50)  
720 x 480@60fps (w480p60)

### 1 X S-VIDEO/COMPOSITE INPUT (BNC CONNECTORS)\*

PAL/NTSC  
Extended Display Identification Data (EDID)

## VIDEO OUTPUTS (5 OUTPUTS)

### 2 X HDMI OUTPUTS, 2 X DVI-I OUTPUTS, SUPPORTED FORMATS:

1920 x 1080@60fps (1080p60)  
1280 x 720@60fps (720p60)  
1366 x 768@60fps (WXGA)  
1280 x 768@60fps (WXGA)  
1024 x 768@60fps (XGA)  
1280 x 1024@60fps (SXGA)  
640 x 480@60fps (VGA)  
800 x 600@60fps (SVGA)

### 1 X COMPOSITE OUTPUT (BNC CONNECTOR), SUPPORTED FORMATS:

PAL/NTSC  
VESAs Monitor Power Management

## LIVE VIDEO RESOLUTIONS (ENCODE/DECODE)

176 x 144@30fps (QCIF)  
352 x 288@30fps (CIF)  
512 x 288@30fps (w288p)  
576 x 448@30fps (448p)  
768 x 448@30fps (w448p)  
704 x 576@30fps (4CIF)  
1024 x 576@30fps (w576p)  
640 x 480@30fps (VGA)  
800 x 600@30fps (SVGA)  
1024 x 768@30fps (XGA)  
1280 x 1024@30fps (SXGA)  
1280 x 720@30fps (HD720p30)  
1920 x 1080@30fps (HD1080p30)\*\*

## AUDIO STANDARDS

G.711, G.722, G.722.1, 64 bit & 128 bit MPEG4 AAC-LD, AAC-LD Stereo

## AUDIO FEATURES

CD-Quality 20KHz Mono and Stereo  
Eight separate acoustic echo cancellers  
8-port Audio mixer  
Automatic Gain Control (AGC)  
Automatic Noise Reduction  
Active lip synchronization

## AUDIO INPUTS (14 INPUTS)

8 x microphone, 48V phantom powered, XLR connector  
each with separate echo cancellers and noise reduction,  
all microphones can be set for balanced line level  
2 x RCA/Phono, Line Level: Stereo PC input  
2 x RCA/Phono, Line Level: Stereo auxiliary/DVD input  
2 x HDMI, digital: Stereo PC/DVD inputs

## AUDIO OUTPUTS (8 OUTPUTS)

2 x XLR, balanced line level, stereo main audio  
2 x RCA/Phono, line level, stereo main audio, configurable  
to S/PDIF  
2 x RCA/Phono, line level, stereo to recording device  
1 x HDMI, digital, stereo main audio  
1 x HDMI, digital, stereo to recording device

## DUAL STREAM

H.239 (H.323) dual stream  
BFCP (SIP) dual stream  
Available in MultiSite from any site  
Support for resolutions up to 1080p30 in both main stream  
and dual stream simultaneously

## MULTISITE FEATURES

4-way High Definition SIP/H.323 MultiSite  
Full individual audio and video transcoding up to 1080p30  
Individual layouts in MultiSite CP (Takes out SelfView)  
H.323/SIP/VoIP in the same conference  
Best Impression (Automatic CP Layouts)  
H.264, Encryption, Dual Stream from any site  
IP Downspeeding  
Dial in/Dial out  
Conference rates up to 10 Mbps

## PROTOCOLS

H.323  
SIP

## EMBEDDED ENCRYPTION

H.323/SIP point-to-point and multipoint calls  
Standards-based: H.235 v2 & v3 and AES  
Automatic key generation and exchange  
Supported in Dual Stream & MultiSite

## IP NETWORK FEATURES

DNS look-up for service configuration  
Differentiated Services (QoS)  
IP adaptive bandwidth management (including flow control)  
Auto gatekeeper discovery  
Dynamic playout and lip-sync buffering  
H.245 DTMF tones in H.323  
Date and Time support via NTP  
Packet Loss based Downspeeding  
URI Dialing  
TCP/IP  
DHCP

## SECURITY FEATURES

Management via HTTPS and SSH  
IP Administration Password  
Menu Administration Password  
Disable IP services  
Network Settings protection

## NETWORK INTERFACES

2\*\*\* x separate LAN/Ethernet (RJ-45) 10/100/1000 Mbit

## OTHER INTERFACES

USB host for future usage  
USB device for future usage  
GPIO\*

## PRECISIONHD 1080P CAMERA

1/3" CMOS  
12 x zoom  
+15°/-25° tilt, +/- 90° pan  
43.5° vertical field of view  
72° horizontal field of view  
Focus distance 0.3m-infinity  
1920 x 1080 pixels progressive @ 60fps  
Other formats supported (configurable through Dip-switch):  
1920x1080@60fps (HDMI only)  
1920x1080@50fps (HDMI only)  
1920x1080@30fps  
1920x1080@25fps  
1280x720@60fps  
1280x720@50fps  
1280x720@30fps  
1280x720@25fps  
Automatic or manual focus/brightness/whitebalance  
Far-end camera control  
Daisy-chain support (Visca protocol camera)  
Dual HDMI and HD-SDI output  
Upside-down mounting with automatic flipping of picture

## SYSTEM MANAGEMENT

Support for the TANDBERG Management Suite  
Total management via embedded SNMP, Telnet,  
SSH, XML, SOAP  
Remote software upload: via web server, SCP, HTTP, HTTPS  
1 x RS-232 for local control and diagnostics  
Remote control and on-screen menu system

## DIRECTORY SERVICES

Support for Local directories (My Contacts)  
Corporate Directory  
Unlimited entries using Server directory supporting  
LDAP and H.350  
Unlimited number for Corporate directory (through TMS)  
200 number local directory  
Received Calls  
Placed Calls  
Missed Calls with Date and Time

## POWER

Auto-sensing power supply  
100–240 VAC, 50/60 Hz  
175 watts max. for codec and main camera

## OPERATING TEMPERATURE AND HUMIDITY

0° C to 35° C (32° F to 95° F) ambient temperature  
10% to 90% Relative Humidity (RH)

## STORAGE AND TRANSPORT TEMPERATURE

-20° C to 60° C (-4° F to 140° F) at RH 10–90% (non-condensing)

## APPROVALS

Directive 2006/95/EC (Low Voltage Directive)  
– Standard EN 60950-1  
Directive 2004/108/EC (EMC Directive)  
– Standard EN 55022, Class B  
– Standard EN 55024  
– Standard EN 61000-3-2/-3-3  
Approved according to UL 60950-1 and CSA 60950-1-07  
Complies with FCC15B Class B

## DIMENSIONS

Length: 17.36" / 44.1 cm  
Height: 3.67" / 9.3 cm  
Depth: 11.8" / 30 cm  
Weight: 11.22 lbs/5.1 kg

\* not supported in version 1

\*\* requires option

\*\*\* only one LAN/Ethernet interface supported in version 1

All specifications subject to change without notice, system specifics may vary.

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## MTBF PRODUCT RELIABILITY/MTBF

The predicted reliability is expressed in the expected random Mean Time Between Failures (MTBF) for the electronic components based on the Power On Hours:

Power On Hours (POH) > 69 000 hours

Useful Life Cycle > 6 years

ISO 9001 certificate is available upon request

## TANDBERG

# Codec C90

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