



DATASHEET

Quantum 7

Own the room with the fastest, smartest console ever created

OVERVIEW

The DiGiCo Quantum 7 is a dual engine, 256 channel mixing console with 52 physical faders and 3 x 15" LCD high-resolution touchscreens. Combining the extraordinary might of three large-scale FPGAs, the Quantum 7 redefines digital mixing consoles.

KEY FEATURES

256 Input Channels with full processing

128 Aux/Sub-Group busses with full processing

48 x 48 Matrix with full processing

64 Insertable Mustard processing strips

256 Nodal processing instances

True Solo function

Assignable channel layout

User programmable macros

Dual redundant engines

Capable of mirroring up to 2 x EX-007 Quantum fader expanders, each adding 2 extra worksurface sections.

Redundant hot-swappable PSUs as standard

Snapshots for seamlessly changing many parameters at once

2 DMI Slots per engine to expand the I/O as desired

Integrated UB MADI per engine

Offline software

iPad control

Theatre software option

Broadcast software option



DiGiCo Quantum

Quantum is developed with seventh-generation FPGA devices that further expand audio processing power and ultimately allows DiGiCo to provide its users with an unrivaled amount of additional flexibility.

Quantum . Power . Connectivity . Flexibility

TECHNICAL SPECIFICATIONS

WORKSURFACE

- 38 x 100mm touch-sensitive, motorised faders
- 14 x 60mm touch-sensitive, motorised faders
- 3 x 15" LCD high-resolution touchscreens
- 3 x Custom mounted LCD high-resolution TFT-LCD Meterbridge screens
- 2 x ¼" Headphone sockets
- 1 x USB 2.0 slot
- Integrated Light Bar
- 1 x 6.5" Meterbridge screen
- 1 x Meterbridge camera
- 1 x XLR Talkback input

OPTIONS

- Upgrade to Dual Loop Optocore (HMA, OpticalCon or ST)
- Upgrade to SingleMode Optocore
- GPIO/MIDI Expansion
- Script Tray
- Theatre Software
- Broadcast Software
- Flightcase
- EX-007 Quantum Fader Expander
- Compatible DMI Cards: ADC / AES / AMM / Aviom / DAC / Dante / Dante64@96 / Hydra 2 / KLANG / MADI B / MADI C / ME / Mic / Waves

REAR

- 2 x Redundant, hot-swappable PSUs
- 12 x XLR Mic/Line Inputs
- 12 x XLR Line Outputs
- 6 x XLR AES/EBU Inputs (12 x channels)
- 6 x XLR AES/EBU Outputs (12 x channels)
- 1 x GPI DSub37 (16 inputs) expandable to 32
- 1 x GPO DSub37 (16 outputs) expandable to 32
- 1 x MIDI In/Thru/Out (5 pin DIN) expandable to 2 sets
- 2 x Video BNC I/O
- 1 x RS422 port (9 pin)
- 1 x SMPTE I/O (XLR) plus level control
- 1 x XLR Talkback input

Per Engine:

- 1 x MultiMode Optocore Interface (expandable to 2)
- 1 x Waves port as standard
- 2 x DMI Slots (up to 64 I/O per slot)
- 4 x Ethernet ports (switched together)
- 8 x MADI BNC I/O @ 48k, 4 interfaces at 96k
- 1 x UB MADI (USB Type B Audio I/O interface for recording and playback of up to 48 channels)
- 2 x USB 2.0 slots
- 1 x Word Clock I/O BNC
- 2 x DVI ports (DVI-D output)
- 1 x AES/EBU Sync I/O
- 1 x Video Sync BNC



TECHNICAL SPECIFICATIONS

SIGNAL PROCESSING

256 Input Channels (Mono)

- Main & Alternative input
- Analogue Gain
- Phase Inversion Control
- Gain Tracking
- Digital Trim (-40dB to +40dB)
- Variable Delay (0ms to 1.3s)
- DiGiTube
- HPF/LPF (-24dB/Oct)
- 4 Band Parametric EQ / Dynamic EQ
- DYN 1: Compressor, Multiband Compressor, Dessler
- DYN 2: Gate, Duck, External Input Compressor
- EQ/Dyn Order Control
- 2 Insert Points per Channel
- Channel Mute & Hard Mute
- Channel Direct Outputs

128 Aux/Sub-Group Busses

- Phase Inversion Control
- Digital Trim (-40dB to +40dB)
- Variable Delay (0ms to 1.3s)
- DiGiTube
- Merge Input
- Tone Generator
- HPF/LPF (-24dB/Oct)
- 8 Band EQ: 4 Band Parametric EQ and 4 Band Parametric or Dynamic EQ
- DYN 1: Compressor, Multiband Compressor, Dessler
- DYN 2: Gate, Duck, External Input Compressor
- EQ/Dyn Order Control
- 2 Insert Points per Channel
- Channel Mute & Hard Mute

1 LR/LCR/LCRS/5.1 Master Buss (with full processing)

48 input x 48 output Full Processing Matrix

36 Control Groups (CGs)

2 Solo Busses

48 x 32-band GEQs

48 x Internal Stereo FX Processors

- Delays
- Audio Enhancer
- Choruses
- Pitch Shifters
- Reverbs

16 x Internal Spice Rack Slots

- 6 band Dynamic Multiband Compressor/Expander

64 x Mustard Processing Strips

- Tube
- Tube Emulation
- HPF/LPF (-24dB/Oct)
- 4 Band EQ: 2 Band Parametric EQ and 2 Band Parametric EQ or All Pass Filters
- DYN 1: Classic RMS/Peak Compressor, Vintage VCA Compressor, Optical Compressor, FET Limiter
- DYN 2: Gate, Ducker

256 x Nodal Processing

- 4 Band Parametric EQ / Dynamic EQ
- DYN 1: Compressor, Multiband Compressor, Dessler
- DYN 2: Gate, Duck, External Input Compressor

DiGiTubes available on every channel and Buss

Dynamic EQs available on every channel, Buss and Nodal Processor

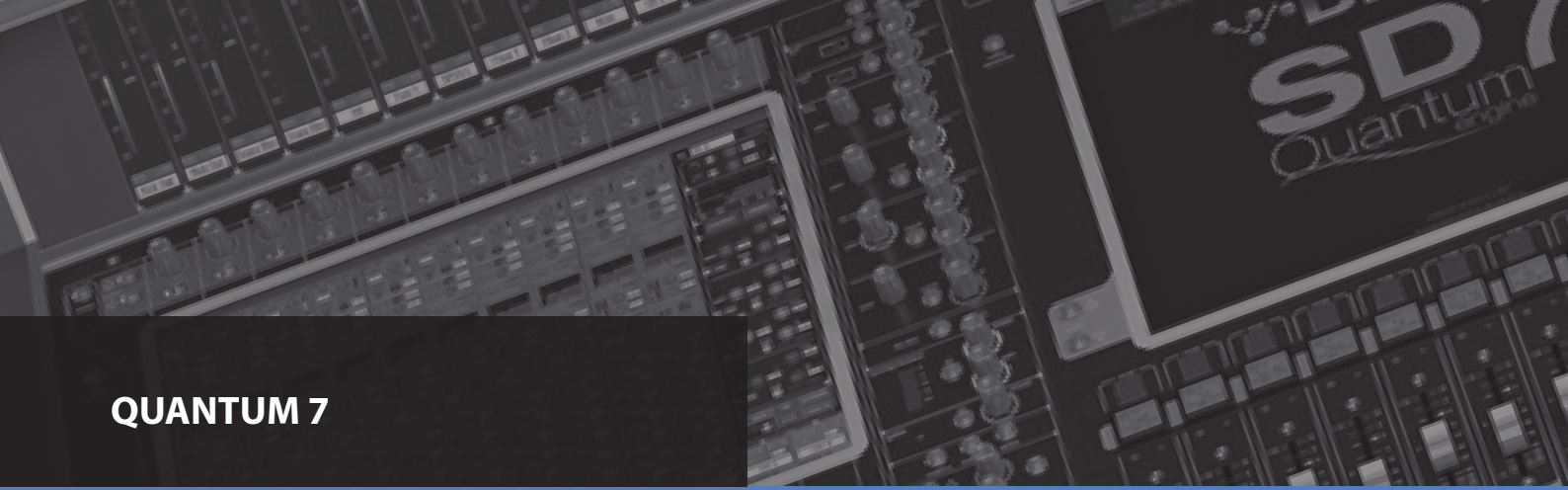
Multiband Compressors available on every channel, Buss and Nodal Processor

True Solo function

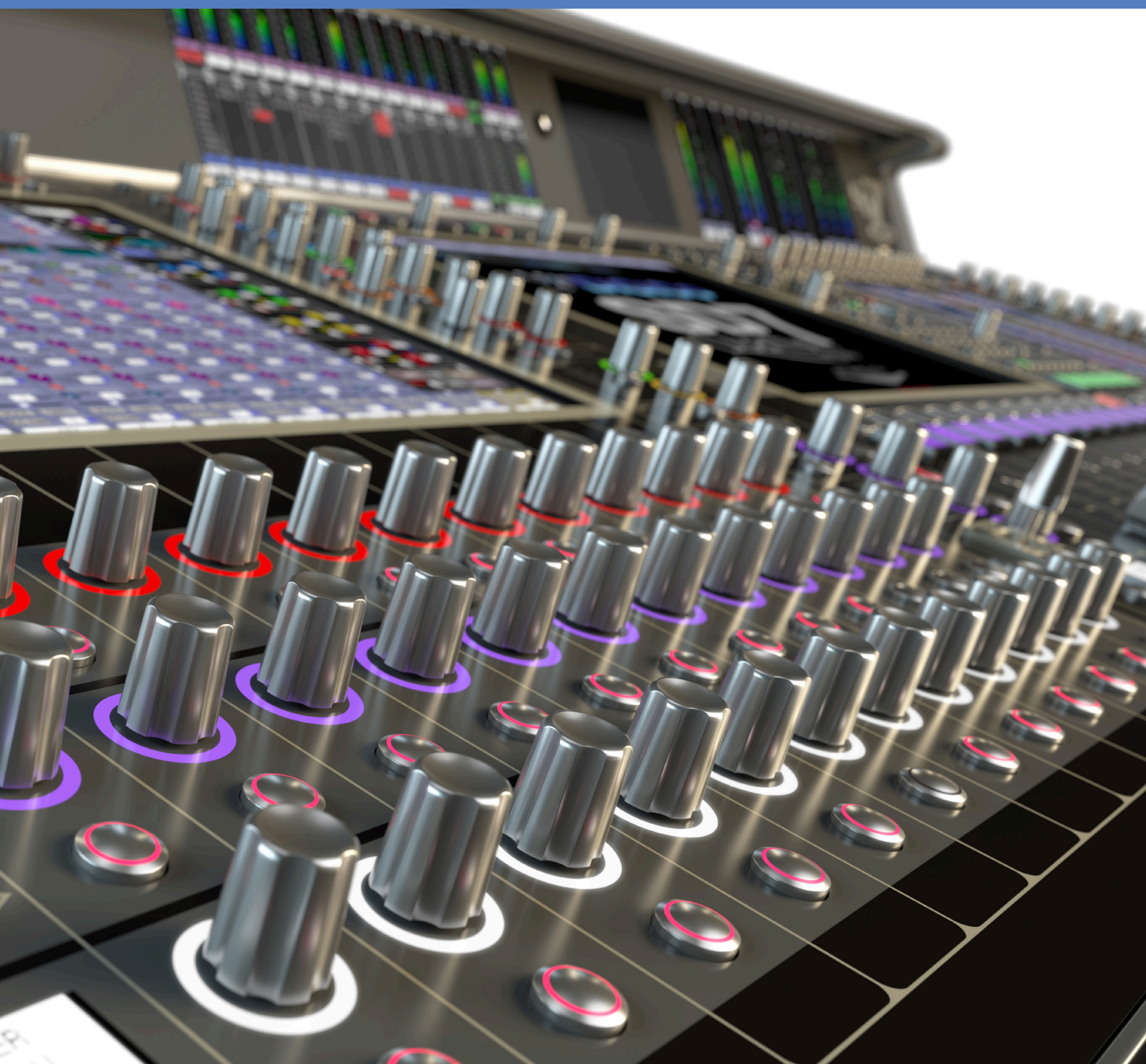
Virtual Soundcheck

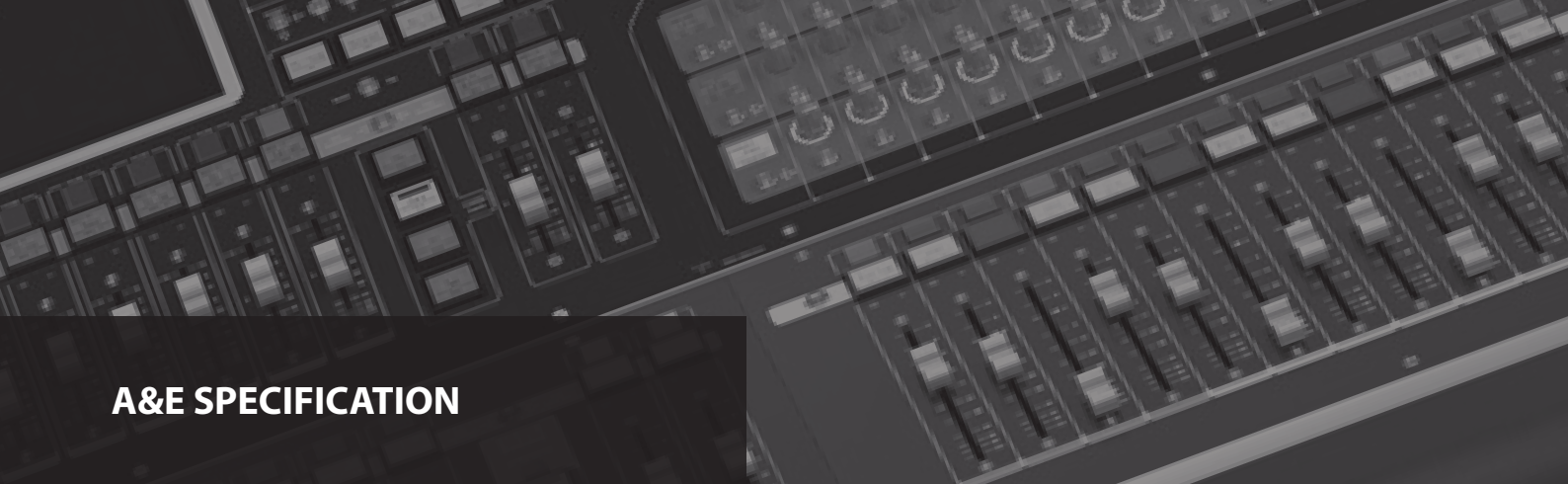


In a world as competitive for engineers as it is for console owners, you want the best tools you can lay your hands on. You also want a console and audio tools as well thought out for every major application as they are designed for the art and science of sound engineering.



QUANTUM 7





A&E SPECIFICATION

The DiGiCo Quantum 7 shall have 38 faders split into 3 worksurface sections, and two master faders. The left and the right worksurface sections shall have 6 layers of 6 banks. The centre worksurface section shall have an additional 14 faders (2 of which shall be master faders) on the upper section. The centre and the upper centre faders shall have 4 banks. All faders can be assigned to control any of the channel types. The console shall be capable of 256 input channels, 128 Aux/Sub-group Busses, a LR/LCR/LCRS/5.1 Master Buss, 36 VCA style or mute group style Control Group channels, 2 Solo Busses, and a 48 input x 48 output full processing Matrix. All processing paths shall have full processing including Tube emulation, Dynamic EQ and Multiband Compression. Tube emulation, Dynamic EQ and Multiband Compression shall be available on every channel and Buss on the console. All processing shall be internal and FPGA-Based.

An internal FX rack shall allow users to pick from 34 different FX. Up to 48 stereo FX can be added, comprising of 16 floating point reverbs and 32 delay/chorus/pitch/enhancer effects. An internal set of 48 32-band GEQs shall also be accessible. There shall be an additional processing Rack called the Spice Rack, allowing up to 16 mono effects. There shall also be 64 insertable Mustard Processing Strips. The position of these, and of inserts, shall be chosen from pre-processing, pre-EQ/dynamics, mid-EQ/dynamics, pre-fader or post-fader. 256 instances of nodal processing shall also be available. These shall allow EQ and dynamics (including Dynamic EQ and Multiband Compression) to be applied to the aux node of a channel.

Three 15" (38cm) LCD high-resolution touch screens shall be provided to show the channel strips and the master screen on the centre screen. The two side screens shall each have a dedicated hardware channel strip, allowing control over filters, EQ, dynamics, insert points, aux sends and 5.1 panning. Each of the side screens shall also have 4 rows of rotary encoders to control various channel parameters. The master section to the right of the centre screen shall have physical controls to allow control over some snapshot functions, control over basic Solo functions, source and speaker selection (Broadcast software), control over the video feed and a button to control which engine is being viewed. There shall also be 8 layers of 5 user-assignable LCD macro buttons on the worksurface. The user shall also be able to program macros that can be triggered with fader movements, GPI, MIDI and keyboard functions. This master section shall also have a USB port. The console shall have three meterbridge screens to show channel metering. The meterbridge shall also have a meterbridge screen to show video feeds and a camera to send video of the user to other consoles.

The rear panel shall have 12 Mic/Line inputs, 12 line outputs, 6 AES/EBU inputs (12 channels) and 6 AES/EBU outputs (12 channels). It shall also have 1 DSub37 GPI and 1 DSub37 GPO (16 inputs and 16 outputs), MIDI In, Thru and Out, 2 sets of BNC Video I/O, an RS422 port, a set of XLR SMPTE I/O and an XLR talkback input. It shall also have 2 redundant and hot-swappable power supplies. Each engine shall have a MultiMode Optocore interface, providing 504 additional audio paths at 48kHz and 96kHz. The Optocore connection type shall be chosen from HMA, OpticalCon or ST. They shall also have a Waves port, 2 DMI slots, 4 switched ethernet ports, 8 sets of MAD I/O, giving up to 8 MAD I interfaces or up to 4 redundant MAD I interfaces at 48kHz or 4 interfaces at 96kHz, inbuilt UB MAD I (USB Type B audio I/O interface for recording and playback of up to 48 channels), 2 USB ports, 2 DVI ports, external Wordclock I/O, AES sync and video sync.

There shall be option to add a second Optocore loop to each engine. This shall give an additional 504 audio paths at 48kHz and 96kHz. The Optocore interface can also be upgraded to SingleMode. There shall also be an option to expand the GPIO and MIDI of the console, adding another 16 inputs and 16 outputs, and a second set of MIDI In, Thru and Out ports. There shall be a Theatre Software option that shall provide Auto Update, Aliases, Players, Advanced CG programming tools and Matrix nodal delays. There shall also be a Broadcast Software option available that shall provide a Monitor Matrix, Backstop PFL and Mix Minus Busses.

AUDIO SPECIFICATIONS

Sample Rate: 48kHz or 96kHz
Processing Delay: 2ms Typical @ 48k (253 channels, Stage Input Through L-R Buss to Stage Output) 1.1ms @ 96k
Internal Processing: Up to 40-bit, Floating Point
A>D & D>A: 24-bit Converter Bit Depth
Frequency Response: +/- 0.6dB (20Hz – 20kHz)
THD: <0.05% @ Unity Gain.; 10dB Input @ 1kHz
Channel Separation: Better Than 90dB: (40Hz-15kHz)
Residual Output Noise: <90dBu Typical (20Hz - 20kHz)
Microphone Input: Better Than -126dB: Equivalent Noise
Maximum Output Level: +22dBu
Maximum Input Level: +22dBu

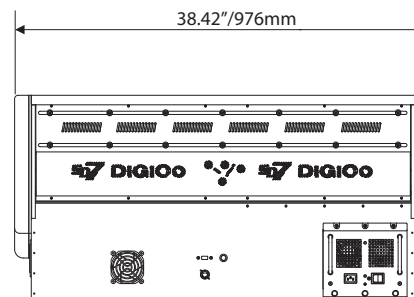
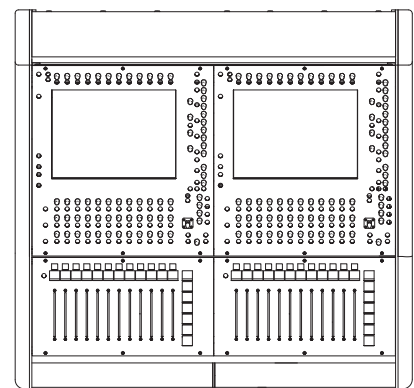
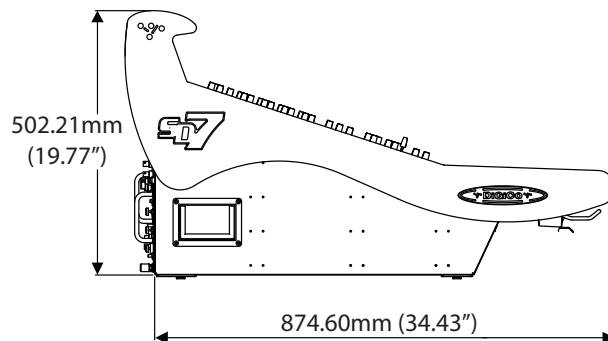
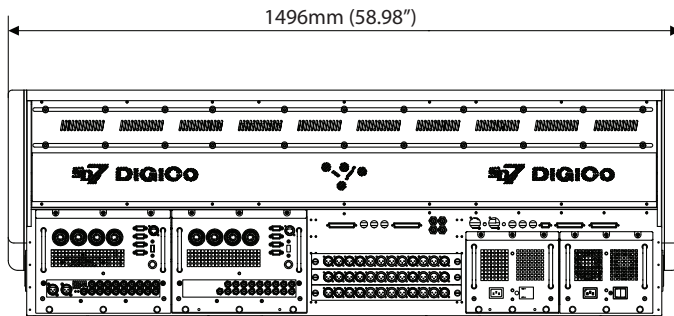
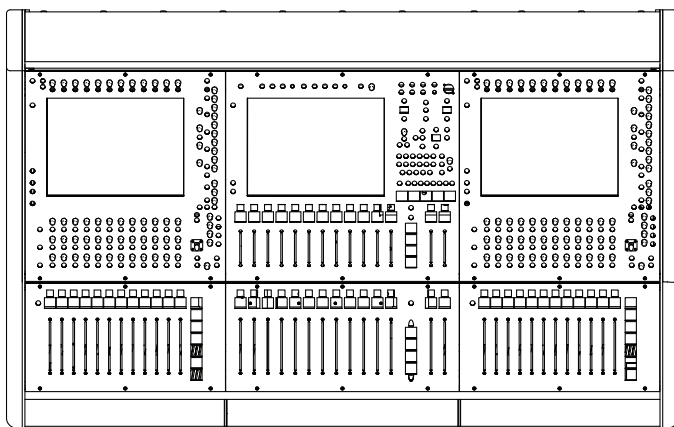
The dimensions of the Quantum 7 shall be: 1496 (w) x 875 (d) x 503 (h) mm
The weight of the Quantum 7 shall be: 112kg
The DiGiCo Quantum 7 shall be supplied with a dust cover.

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LINE DRAWING

All dimensions in mm



PHYSICAL

Dimensions: 1496mm (w) x 875mm (d) x 503mm (h)

Weight: 112kg (250kg with optional flightcase)

Flightcase: 1600mm (w) x 600mm (d) x 1240mm (h) (Optional)

Power Requirements: 90-260V, 50-60Hz, 600VA

Redundancy: Internal removable engines x 2 and internal hot-swappable PSUs x 2

Product Code: X-SD7-WSQ7-OP (HMA optics)

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