

# LX7

7-BUS PROFESSIONAL MIXING CONSOLE

# LX7

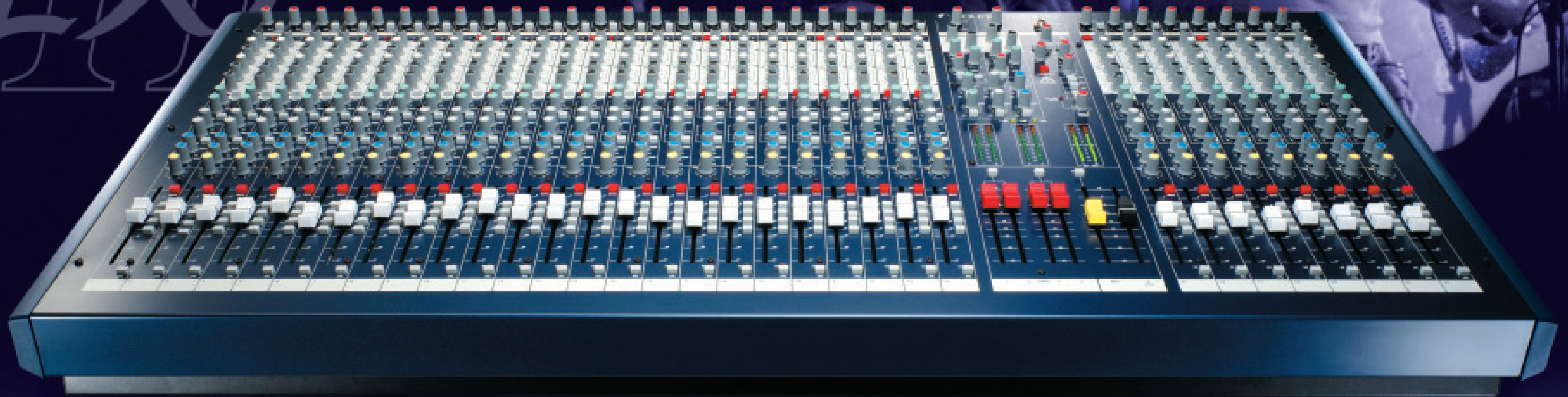


# ADVANCED SOUNDCRAFT TECHNOLOGY NOW COMES IN MEDIUM SIZE

LX7

Introducing the new Soundcraft LX7ii – our hugely popular 7-bus mid-sized mixing console, totally re-engineered with genuine Soundcraft technology for unrivalled sonic performance. The LX7ii can handle both FOH and monitors, making it ideal for live sound applications in small to medium-sized venues. And direct channel outputs allow for simple connection of multitrack recording equipment, making the LX7ii equally at home in the studio.

LX7



Pictured band - Beech, at The Bedford, Baham, South London.

In the year of our 30th anniversary, Soundcraft co-founder and Technical Director Graham Blyth has developed new microphone preamps and 4-band EQ circuits of extraordinary clarity and musicality, which we call GB30.

GB30

Totally re-engineered and derived from designs used in Soundcraft's acclaimed MH Series professional live sound consoles, they gift the LX7ii with an exceptionally open sound and an almost unnervingly low noise floor.

#### KEY FEATURES:

- 16, 24 and 32 channel frame sizes
- GB30 mic preamp and precision equalisation circuitry
- True 7-bus architecture
- 2 stereo inputs
- 2 stereo returns
- Channel direct outputs
- Talkback facility
- 100mm faders
- +48 phantom power
- 6 aux sends, 4 of which are pre/post switchable
- 18dB/octave high pass filter
- Group and mix inserts
- 12-segment LED metering
- Integral universal voltage, switched-mode PSU for light weight





## MONO INPUT CHANNEL

### Mic Input

A balanced XLR connector accepts balanced or unbalanced mic signals.

### Line Input

The balanced 1/4" jack allows connection of balanced or unbalanced electronic instruments, such as keyboards.

### +48V Phantom Power

+48V Phantom Power is available switched in blocks of 4 for condenser mics and active DI boxes.

### Input Stage

LX7ii's exclusive GB30 padless mic preamp provides up to +15dBu input capability with the input gain control operating between 5dB and 60dB on all mic inputs.

### High Pass Filter

A steep 18dB per Octave High Pass Filter is included straight after the preamp to reduce low frequency rumble on stage and clean up vocal performances.

### Insert

A pre-fade, pre-EQ (but post-HPF) insert point is provided for patching in Limiters, Graphic Equalisers or other signal processors. It may also be used for recording.

### Direct Outputs

A direct output is also available on all but the last 8 channels with individual pre/post fader switching situated in the EQ section. This allows LX7ii's direct outputs to be equally useful for effects send applications or multitrack tape feeds.

### EQ Section

LX7ii's new GB30, 4 band equaliser section is based on that used in the high-end MH Series. Both the HF and LF shelving sections have steeper slopes than usual which substantially reduces mid frequency harshness in the HF band and muddiness in the LF. This increase in "cleanliness" of response is further enhanced by an element of undershoot and overshoot in the boost/cut response. It has two swept mid frequencies carefully selected for optimum control during live performances. All bands provide 15dB of cut or boost. The Low frequency equaliser response shelves at 80Hz. The swept Lo Mid control operates between 80Hz and 1.9kHz. The swept Hi Mid control operates at frequencies between 550Hz and 13kHz. The fixed High frequency equaliser response shelves at 13kHz.

### EQ Switch

The EQ section can be bypassed using the EQ switch, allowing comparison of treated and untreated sounds without having to reset controls.

### Auxiliary Sends

6 flexible auxiliary sends allow the choice of either monitor or effects orientated mixes. Auxes 1-4 are normally post-fader, post-EQ but can be switched in pairs from each channel to be pre-fader, post-EQ. Auxes 5 and 6 are always post-fader, post-EQ. In this way a maximum of 4 pre-fader foldback mixes or 6 post-fader effects sends are possible.

### Level Control and Routing

Each input channel can be routed to Mix, the separate Centre (Mono) bus, and/or any of the 4 Groups in pairs.

### Pan Control

Turning the pan control full left or right enables odd or even groups or the left or right Mix bus to be accessed individually.

### Solo/PFL

Each channel can be soloed pre-fader, post-EQ to check gain levels.

### PFL LED

The PFL indicator LED also doubles as a PEAK indicator, illuminating 4dB before clipping occurs to make the maximum headroom available.

### 100mm Fader

Professional-grade 100mm faders provide accurate, consistent control of audio levels and have superb cut-off performance.

## STEREO INPUT SECTION



Two stereo inputs allow stereo sources such as CD players, keyboards or samplers to be connected. Alternatively, they may be used as sophisticated effects returns.

### Connections

2 balanced pairs of line inputs allow the stereo inputs to be accessed. Plugging in the left jack only will feed a mono source to both paths.

### Input Gain control

A rotary control provides 22dBu of gain range to boost even the weakest line-level signals.

### EQ Section

The two band High and Low frequency EQ sections provide 15dB of boost or cut at 12kHz and 80Hz respectively.

### Auxiliary Control

The stereo inputs have access to either Auxes 1 & 2 or 3 & 4, by toggling the "3-4" switch.

### Solo/PFL

Inputs can be soloed pre-fader, post-EQ and routed direct to Mix, or to the Group immediately below each input strip. A rotary control governs signal level.

## NEW GB30 MIC PREAMP AND EQ



Soundcraft founder Graham Blyth explains the development of his GB30 designs:

### GB30 MIC PREAMP

"It is particularly important in live applications to have a mic preamp that has a well controlled overload response.

Many preamp designs achieve excellent THD figures by wrapping tons of negative feedback around the front end. Unfortunately, these topologies tend to behave badly under overload conditions, creating an untidy and muddy sound."

"The new preamp in the LX7ii achieves excellent performance figures by using local linearisation techniques rather than global feedback, together with a wide frequency response and excellent phase linearity. All these factors result in an exemplary preamp for all applications."



## GROUP SECTION

### Group Outputs

Each Group has an impedance-balanced 1/4" jack output connector, allowing long cable runs on stage.

### Insert Points

Pre-fade insert points are provided on each Group for the connection of Limiters, Graphic Equalisers or other signal processors.

### Auxiliary Outputs

There are 6 impedance-balanced jack outputs for the Auxiliary outputs.

### Auxiliary Masters

Six rotary controls govern Auxiliary send level. Each Auxiliary may be soloed after the fader.

### Group Metering

Four 12-segment Peak reading bargraph meters display Group output levels.

### 100mm Group Faders

The Group faders provide 10dB of extra gain above the "zero" mark, whilst still ensuring smooth operation. Each pair of Groups may be routed to Mix.

## MASTER SECTION

### Connections

3 impedance-balanced XLR connectors cater for the Mix and C (Mono) Outputs, with a balanced XLR input allowing talkback microphones to be connected. Two control room outputs for engineer monitoring are available on impedance balanced 1/4" jacks.

### 2TRK Inputs

A pair of unbalanced -10dBv phono connectors labelled "2TRK" allow pre-show music to be replayed.

### Talkback Section

Once connected, the engineer's talkback mic can be routed to Aux 1-2, Aux 3-4 or the Mix by momentary action switches. A rotary control governs talkback level.

### Stereo Returns

Two stereo returns are provided for use with effects units, or as simple stereo instrument inputs. The rotary controls govern level and are automatically routed to Mix.

## CONTROL ROOM SECTION

The control room section allows the engineer to monitor either the 2-track return, the C (Mono) Bus, the Mix, or either pair of Groups via the control room outputs or headphones. A headphone jack is provided for use with headphones with impedances of 100 Ohms or greater. Both the control room and 2-track return levels can be altered using the associated controls. It is also possible to replace the Mix output signal with the 2-track return by pressing "2 TRK TO MIX OUT". This allows easy playing of pre-show music at a single button press, without having to make any alterations to the band's settings.

### Metering

A 12-segment bargraph meter normally displays Mix output levels, but switches to display Group, C (Mono) output or 2-track levels when the appropriate control room selection is made. If any input or Auxiliary master is soloed then the PFL/AFL LED illuminates, and the master meters show PFL/AFL levels instead.

### 100mm Master Faders

Mix and C (Mono) Output levels are controlled by custom-built 100mm long throw faders. The Mix outputs may be routed to the C (Mono) bus should only a mono PA be required, or an induction loop need to be fed.

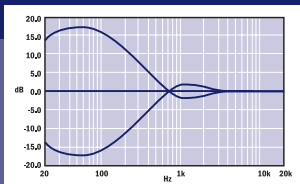
### PSU indicators

The LEDs illuminate if LX7ii is powered up, showing the status of the +/-17v voltage rails used within the console.

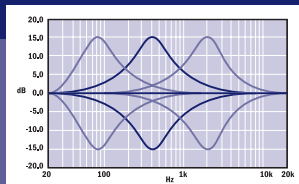
### Integral Power Supply

The LX7ii is fitted with a high-efficiency SMPS design (Switched Mode Power Supply) unit that makes for cooler operation and lighter weight. The PSU is capable of accepting a wide range of AC input voltages without any internal or external switch changes.

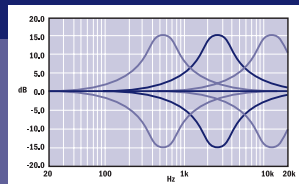
## LF EQ



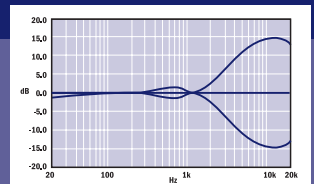
## LO MID SWEEP EQ



## HI MID SWEEP EQ



## HF EQ



## GB30 EQ

"The classic problem with 'low cost' equaliser circuits is that the LF and HF shelving sections have insufficiently steep slopes, so that, when applying any reasonable amount of boost, lots of unwanted mid frequency 'mush' also gets added resulting in a muddy sound. What is needed is a genuine 'second order' side chain within the shelving EQ circuitry, but this is usually prohibitively

expensive. However, the innovative topology developed for Soundcraft's MH4 multi-format console provided us with a neat solution. By taking these concepts into a fixed frequency HF and LF format, we've achieved a unique, cost-effective design that brings high-end EQ into an affordable mixing console for the first time."

# TOP PANEL, CONNECTORS & DIMENSIONS

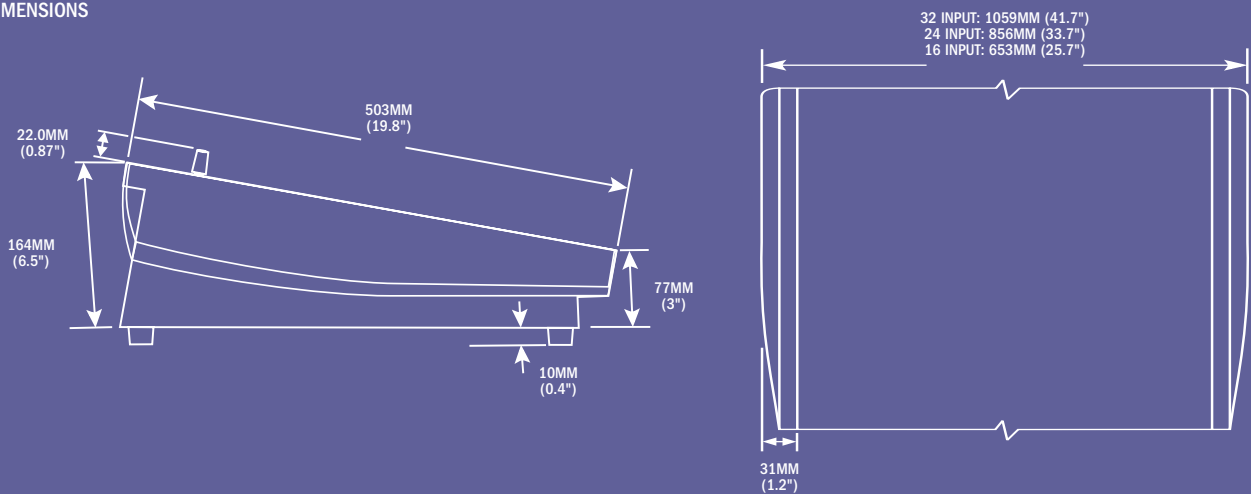
LX7ii OVERHEAD VIEW



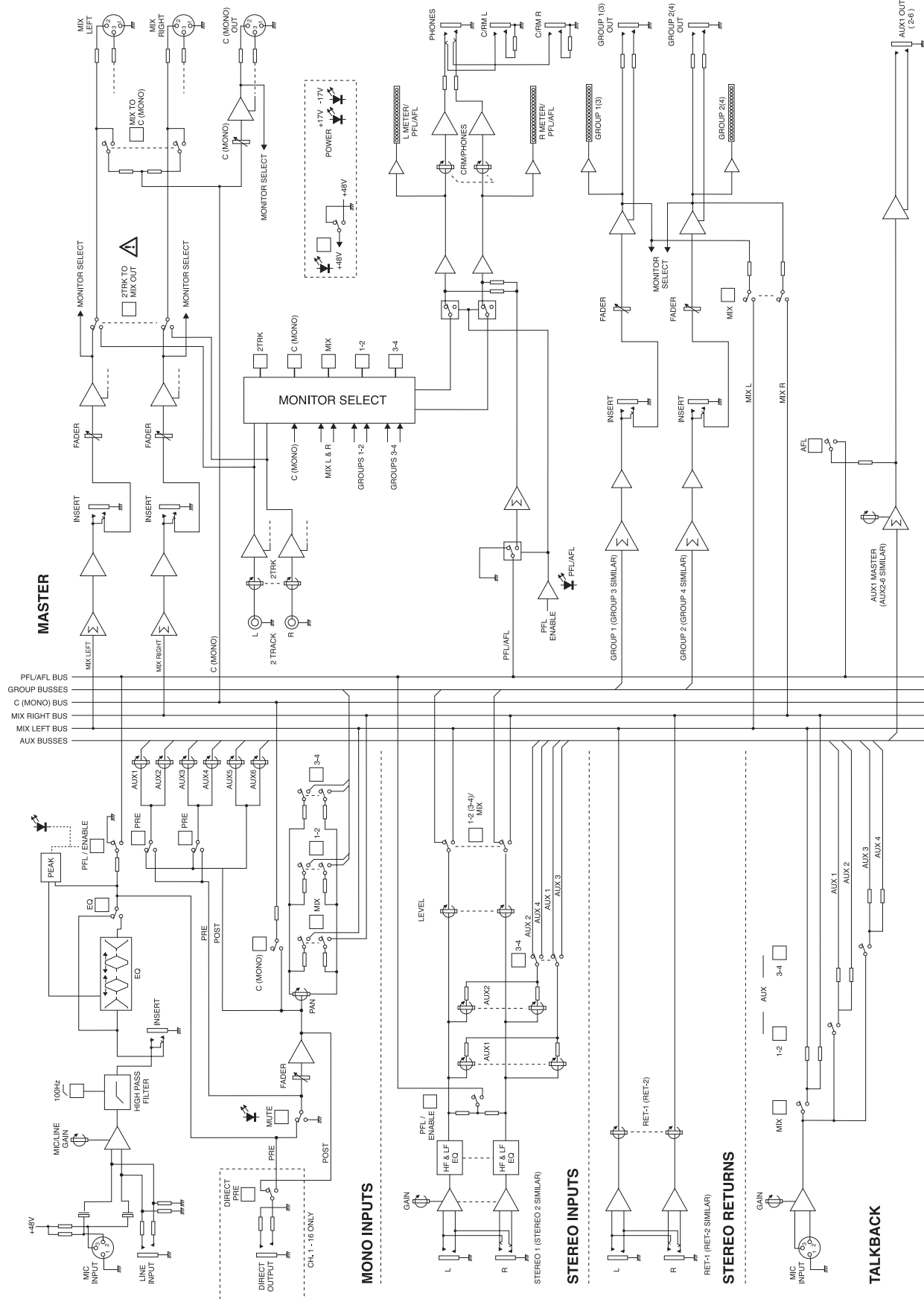
LX7ii REAR PANEL CONNECTIONS



## DIMENSIONS



# BLOCK DIAGRAM





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 This equipment complies with the EMC Directive 89/336/EEC

Part No: ZL0613



HA Harman International Company

**TYPICAL SPECIFICATIONS**

Frequency response	XLR input to any output . . . . . +0/-1dB, 20Hz-20kHz
T.H.D. & noise	All measurements at +10dBu output, 30dB gain. XLR input to Direct output . . . . . <0.007% @ 1kHz XLR input to Mix output . . . . . <0.008% @ 1kHz
Mic input E.I.N.	22Hz-22kHz bandwidth, unweighted . . . <-128dBu (150Ω source)
Mic gain	Min . . . . . 5dB Max . . . . . 60dB
Bus noise	Mix output, input faders @ -∞, Mix fader 0dB 32 channels routed . . . . . <-85dBu 16 channels routed . . . . . <-88dBu  Group output, input faders @ -∞, Group fader 0dB 32 channels routed . . . . . <-85dBu 16 channels routed . . . . . <-88dBu  Aux output, input sends @ -∞, Aux master 0dB 32 channels routed . . . . . <-88dBu 16 channels routed . . . . . <-91dBu
Crosstalk @ 1kHz	Input channel muting . . . . . >98dB Input fader cutoff . . . . . >98dB Input pan pot isolation . . . . . >82dB Mix routing isolation . . . . . >98dB Group routing isolation . . . . . >98dB Adjacent channel isolation . . . . . >100dB Group-Mix crosstalk . . . . . <-84dB Aux send off . . . . . <-94dB
CMRR	Mono input, measured at max gain . . . . . typically 80dB @ 1kHz
Input & output levels	Input channel mic input . . . . . +15dBu max Input channel line input . . . . . +30dBu max Stereo inputs & insert returns . . . . . +20dBu max All outputs . . . . . +20dBu max Nominal operating level . . . . . 0dBu Headphone power . . . . . 2 x 250mW into 200Ω phones
Input & output impedances	Mic input . . . . . 2kΩ Line inputs . . . . . >10kΩ Input channel insert return . . . . . 5kΩ (with EQ in, otherwise worst case 1.8kΩ) Mix, Group, Aux outputs . . . . . 150Ω Insert sends . . . . . 75Ω Recommended headphone impedance . . . . . 50-600Ω
High pass filter (Mono input)	100Hz, 18dB per octave
EQ (Mono input)	HF . . . . . 13kHz, +/-15dB, 2nd order shelving Hi-Mid . . . . . 550Hz-13kHz, +/-15dB, Q=1 Lo-Mid . . . . . 80Hz-1.9kHz, +/-15dB, Q=1 LF . . . . . 80Hz, +/-15dB, 2nd order shelving
Metering	6 tri-colour 12-segment LED bargraphs
Power consumption	AC mains supply (internal PSU) 85V-270V AC, 50/60Hz universal input Power consumption . . . . . 60W
Weight	16 channel . . . . . 18.2kg (40lbs) 24 channel . . . . . 21.8kg (48lbs) 32 channel . . . . . 25.4kg (56lbs)
Operating conditions	Temperature range . . . . . -10°C to +30°C Relative humidity . . . . . 0% to 80%

Note: These figures are typical of performance in a normal electromagnetic environment. Performance may be degraded in severe conditions. All measurements refer to electronically balanced inputs and outputs with VCAs enabled. Input and output transformers may affect these specifications.