

# NTL720 Specifications



## FEATURES

- Self-Powered, ultra-compact, three-way line array module
- Advanced, easy to operate rigging system
- Exceptional pattern control due to symmetrical design, large horn and Phase-Aligned™ woofers
- Incorporates EAW technologies including CSA™ and Focusing™ for outstanding mid and high frequency transient response

## APPLICATIONS

Theaters, houses of worship, corporate A/V, small music venues

## DESCRIPTION

The NTL720 delivers the three-way design, power and fidelity of the KF Series line array systems in an ultra-compact self-powered enclosure weighing less than 54 lbs. (24.7 kg). The exceptional output capability in a small, lightweight package allows NTL720 to fill a range of application requirements from small theaters and houses of worship to live concerts and corporate events.

NTL720 features dual 6-in LF cone transducers in a sealed enclosure which deliver exceptional horizontal pattern control via tuned spacing. Dual 6-in MF cone transducers are mounted in a large horn that fills virtually the entire face of the enclosure, maximizing horizontal pattern control as well as driver efficiency. Six 1-in dome tweeter HF transducers share the same horn with the MF transducers; tightly stacked in the center of the enclosure, the six HF transducers leverage beneficial interaction to generate extraordinary output. The three subsystems feature a symmetrical configuration, allowing coherent summation and even response across the nominal 110 degree (h) by 12 degree (v) coverage area.

The NTL720 Flybar works on its own or, via an adapter can attach to an NTS250 dual 15-in subwoofer. The NTL720 Flybar also features adjustable footpads on the “top” so that users can invert it and use it to safely ground-stack up to six NTL720 modules. The ingenious rigging system allows users to select a range of module-to-module angles, which simply snaps into place, creating a safe, strong connection between modules. In the unlikely event of a module failure, users can quickly and easily remove the module from within the rigging structure and replace it without ever disassembling the array.

EAWPilot control software provides comprehensive DSP control as well as monitoring of amplifier status. Input selection is a choice of analog, AES left/right, and EAW’s proprietary U-Net. Communication connection options include U-Net and a USB port on the back panel for interfacing with the DSP.

Six year loudspeaker warranty. Two year electronics warranty.

## 3-WAY FULL-RANGE LOUDSPEAKER

See *NOTES TABULAR DATA* for details

### CONFIGURATION

#### Subsystem:

Transducer	Loading
LF 2x 6-in, 1.75-in voice coil cone driver	Sealed
MF 2x 6-in, 1.75-in voice coil cone driver	Sealed
HF 6x 1-in dome tweeter	

#### Operating Mode:

Amplifier Channels	External Signal Processing
Tri-amp LF,MF,HF	DSP w/EAW Focusing

### ACOUSTICAL PERFORMANCE

**Operating Range:** 75 Hz to 19 kHz

#### Calculated Axial Output (Whole Space SPL):

	Cont	Peak
LF	112 dB	118 dB
MF	122 dB	128 dB
HF	121 dB	127 dB

#### Nominal Beamwidth:

Horz	110°
Vert	12°

### ELECTRICAL PERFORMANCE

#### Input:

Type	Electronically balanced
Sensitivity	2.5V Sensitivity
Impedance	20 kohm balanced input impedance
Wiring	Pin 1 chassis, Pin 2 +, Pin 3 - Also, separate loop thru XLRM

#### DSP:

Encoding	24 Bit, 48 kHz
Latency	2.97 ms latency

#### User Addressable DSP:

	Array	Box
EQ	10 Parametric	10 Parametric
Delay	600 ms	1200 ms
Level	15 dB +/-	15 dB +/-

#### Amplifier:

Type	3x Modified Class D
Maximum Output	45 V, 500 W @ 4 ohms
THD + Noise	<0.1%
Dynamic Range	>102 dB

#### AC Mains:

	115 V	230 V
Input	100 V to 120 V	220 V to 240 V
Frequency	50 Hz to 60 Hz	50 Hz to 50 Hz
Current Idle	0.25 A	0.15 A
Fuse Rating	6.3 A Fuse	3.15 A Fuse

**Input Selection:** Analog, AES L, AES R, U-Net

**Communication:** USB, U-Net 1, U-Net 2

**CONTROLS:** HF Boost, Nearfield Contour

#### INDICATORS (LED):

Signal Present	HF Boost Selection
Limiters Active	Nearfield Contour Selection
Clip	Amplifier Status
U-Net Status	Input Selection

**KF LINE SOURCE VOICING UPDATE** Leveraging data and experience from development of Adaptive Systems™, updated Greybox™ processing enhances performance of NTL720 incorporating improved equalization, crossover, Focusing™ and limiting parameters for even better system performance without any physical changes. The update brings improved warmth and clarity to the NTL720, while making it sonically more consistent with KF730, KF740 and Adaptive Systems. Updated firmware is available on the EAW website, [www.eaw.com](http://www.eaw.com)



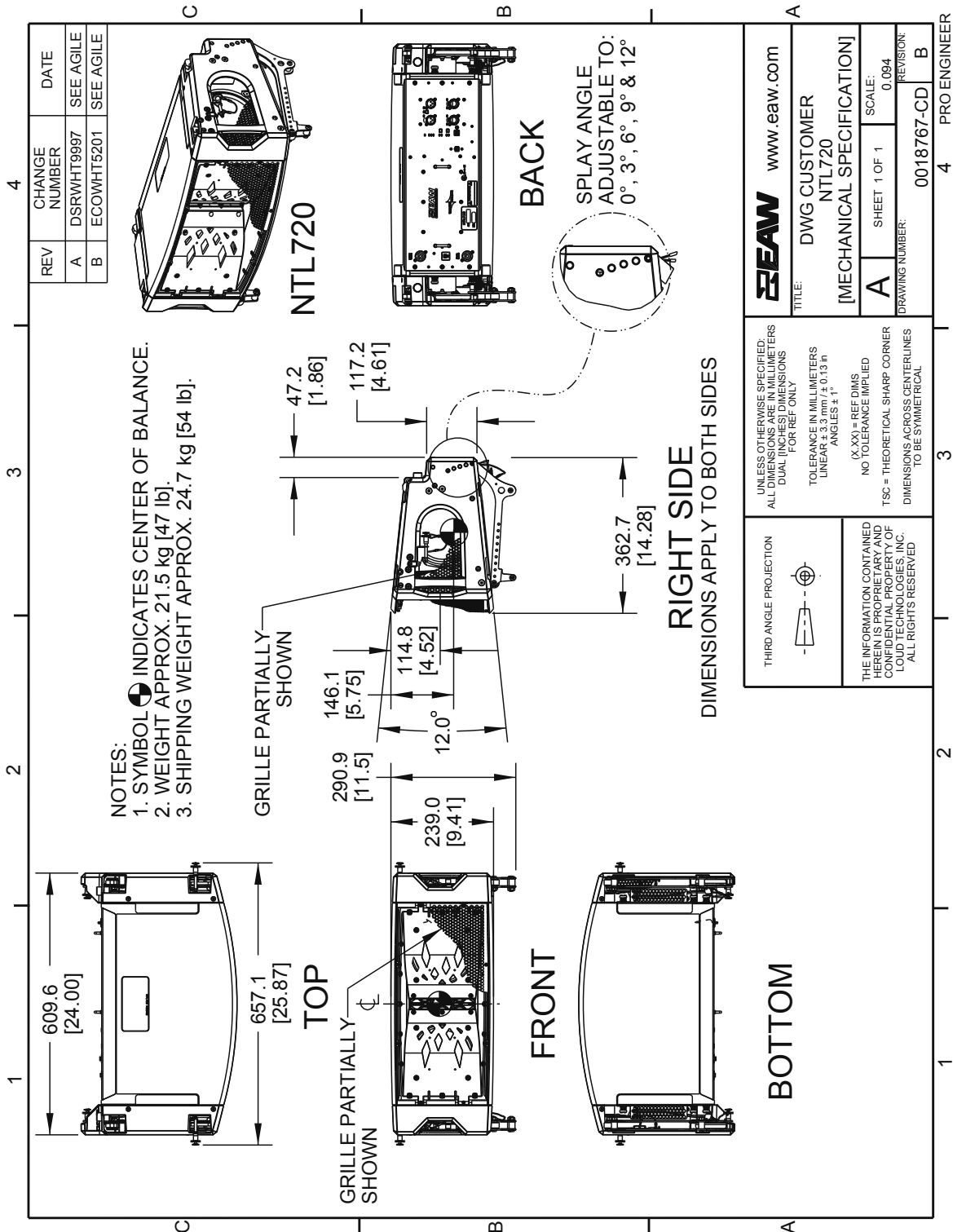
# NTL720 Specifications

## ENCLOSURE

Material Exterior-grade Baltic birch plywood

Finish Roadcoat™ wear resistant textured black paint

Grille Powder-coated perforated steel



NOTE: This drawing has been reduced. Do not scale.

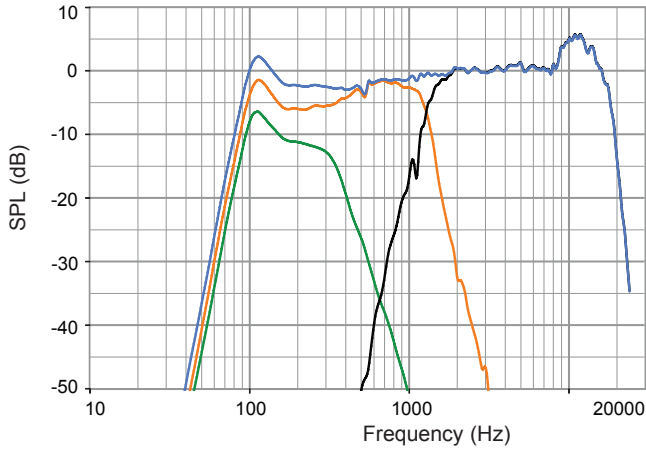
# NTL720 Specifications

## PERFORMANCE DATA

See *NOTES GRAPHIC DATA* for details

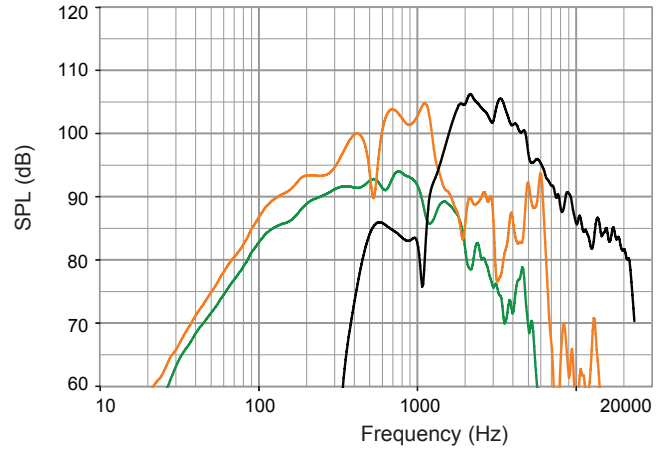
### Frequency Response: Processed

LF = green, MF = orange, HF = black, Complete = blue



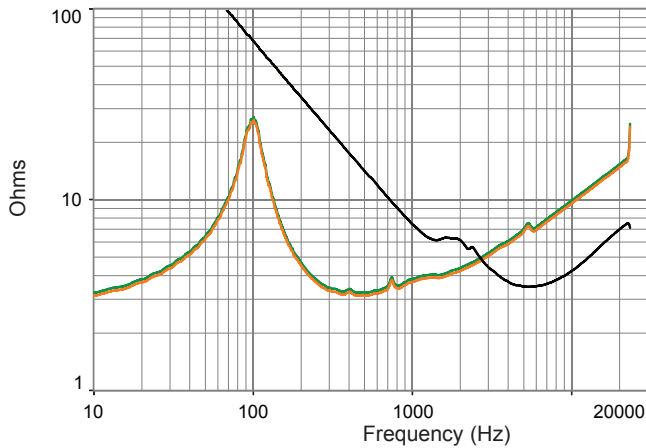
### Frequency Response: Unprocessed

LF = green, MF = orange, HF = black



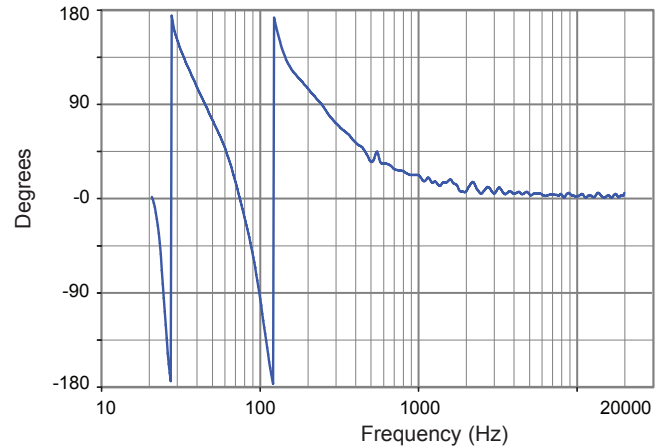
### Impedance

LF = green, MF = orange, HF = black



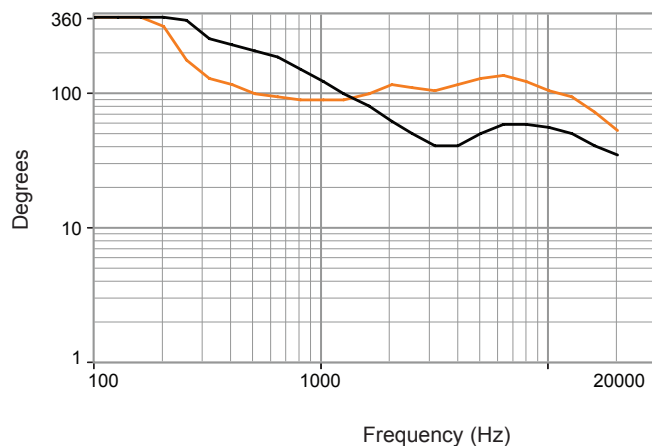
### Phase Linearity

Complete = blue



### Beamwidth

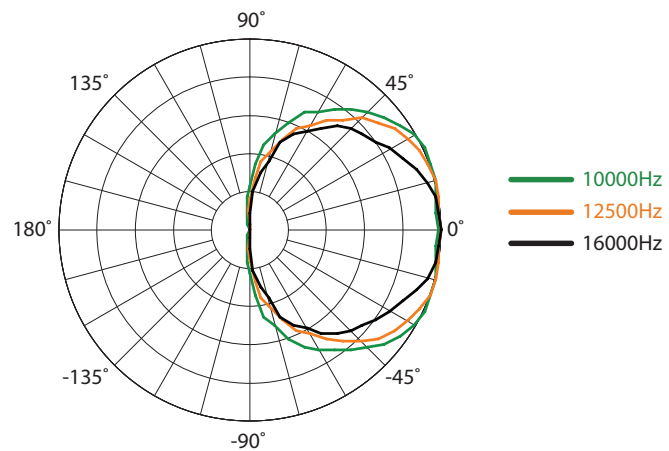
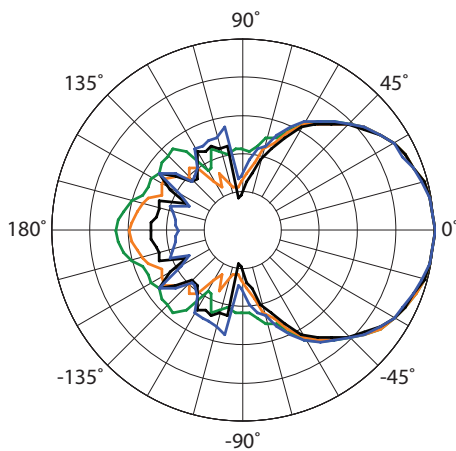
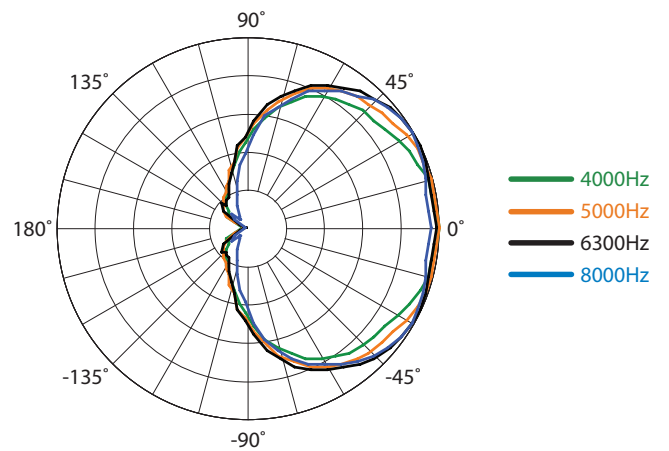
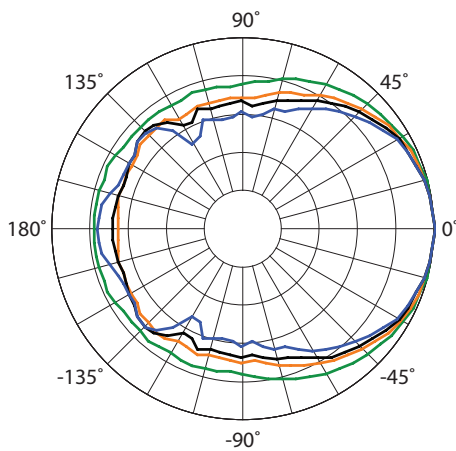
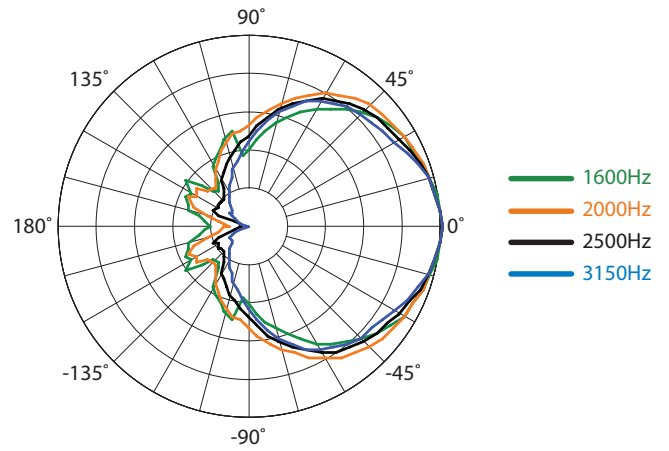
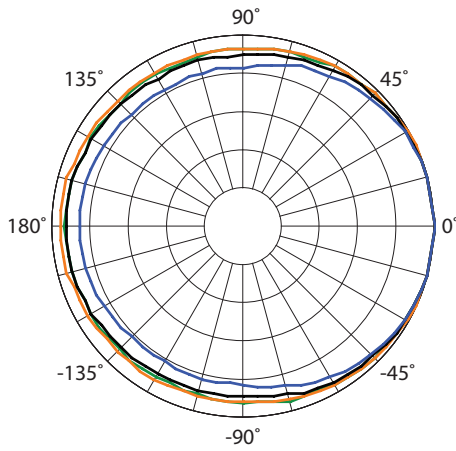
Horizontal = orange Vertical = black



# NTL720 Specifications

## Horizontal Polar Data

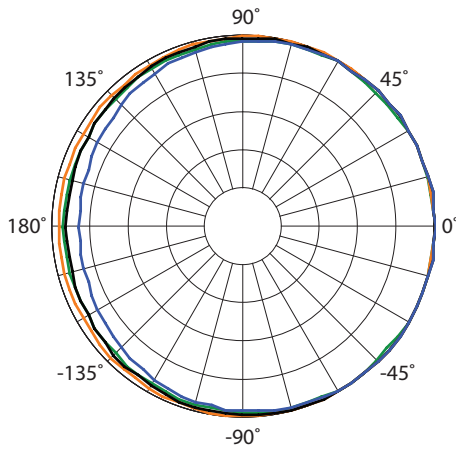
See NOTES GRAPHIC DATA for details



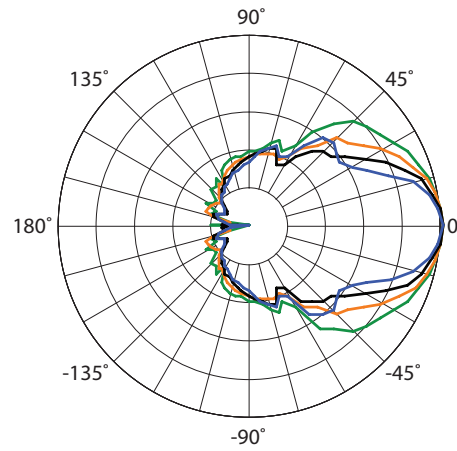
# NTL720 Specifications

## Vertical Polar Data

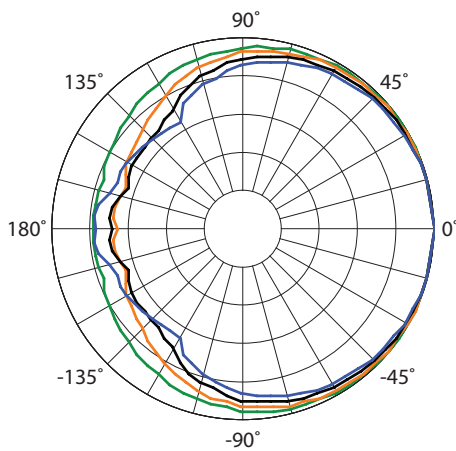
See NOTES GRAPHIC DATA for details



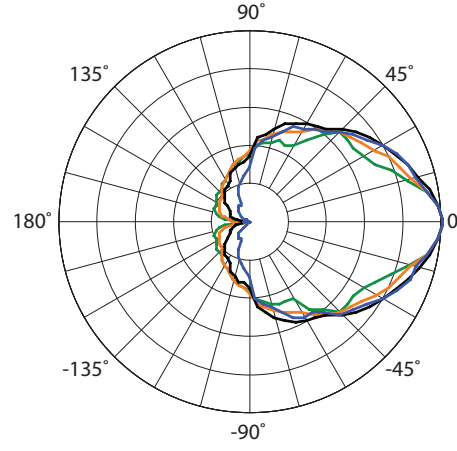
- 100Hz
- 125Hz
- 160Hz
- 200Hz



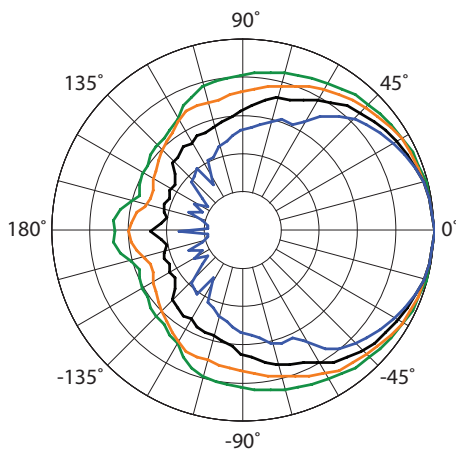
- 1600Hz
- 2000Hz
- 2500Hz
- 3150Hz



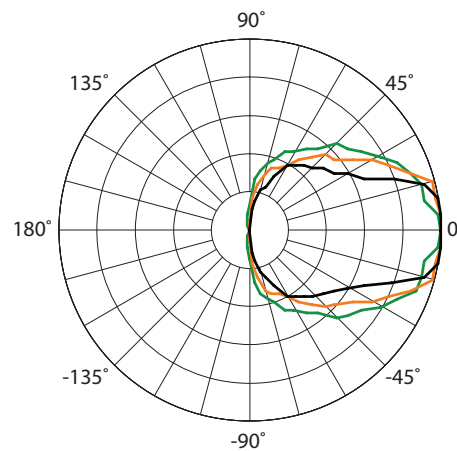
- 250Hz
- 315Hz
- 400Hz
- 500Hz



- 4000Hz
- 5000Hz
- 6300Hz
- 8000Hz



- 630Hz
- 800Hz
- 1000Hz
- 1250Hz

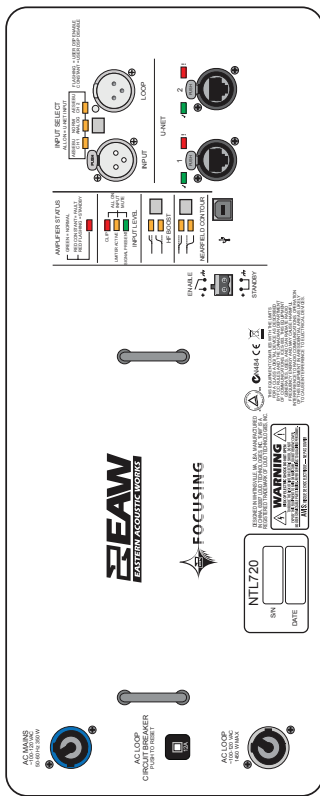


- 10000Hz
- 12500Hz
- 16000Hz

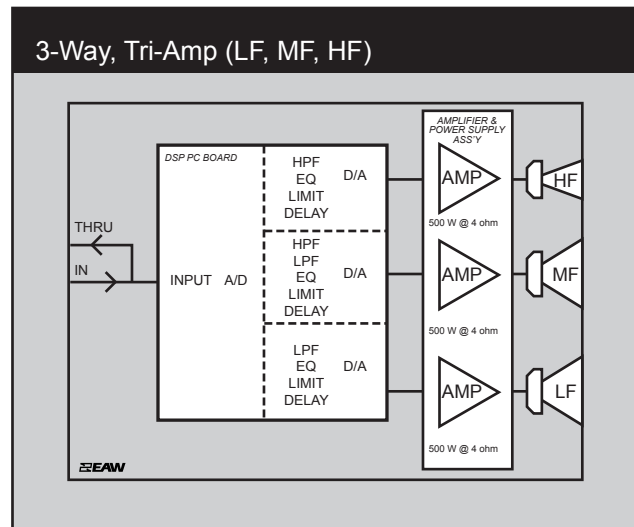


# NTL720 Specifications

## Input Panel



## Signal Diagram



## Legend

- HPF** High Pass Filter for crossover –or– Recommended High Pass Filter
- LPF** Low Pass Filter for crossover
- LF/MF/HF** Low Frequency / Mid Frequency / High Frequency
- AMP** User Supplied Power Amplifier –or– Integral Amplifier for NT products
- XVR** Passive LPFs, HPFs, and EQ integral to the loudspeaker
- EAW Focusing** Digital Signal Processor capable of implementing EAW Focusing

## Notes

### TABULAR DATA

- Measurement/Data Processing Systems:** Primary – FChart; proprietary EAW software; Secondary – Brüel & Kjær 2012.
- Microphone Systems:** Earthworks M30; Brüel & Kjær 4133
- Measurements:** Dual channel FFT; length: 32 768 samples; sample rate: 48 kHz; logarithmic sine wave sweep.
- Measurement System Qualification** (includes all uncertainties): SPL: accuracy  $\pm 0.2$  dB @ 1 kHz, precision  $\pm 0.5$  dB 20 Hz to 20 kHz, resolution 0.05 dB; Frequency: accuracy  $\pm 1\%$ , precision  $\pm 0.1$  Hz, resolution the larger of 1.5 Hz or 1/48 octave; Time: accuracy  $\pm 10.4$   $\mu$ s, precision  $\pm 0.5$   $\mu$ s, resolution 10.4  $\mu$ s; Angular: accuracy  $\pm 1^\circ$ , precision  $\pm 0.5^\circ$ , resolution 0.5 $^\circ$ .
- Environment:** Measurements time-windowed and processed to eliminate room effects, approximating an anechoic environment. Data processed as anechoic or fractional space, as noted.
- Measurement Distance:** 7.46 m. Acoustic responses represent complex summation of the subsystems at 20 m. SPL is referenced to other distances using the Inverse Square Law.
- Enclosure Orientation:** For beamwidth and polar specifications, as shown in Mechanical Specification drawing.
- Volts:** Measured rms value of the test signal.
- Watts:** Per audio industry practice, "loudspeaker watts" are calculated as voltage squared divided by rated nominal impedance. Thus, these are not True Watt units of energy as defined by International Standard.
- SPL:** (Sound Pressure Level) Equivalent to the average level of a signal referenced to 0 dB SPL = 20 microPascals.
- Subsystem:** This lists the transducer(s) and their acoustic loading for each passband. Sub = Subwoofer, LF = Low Frequency, MF = Mid Frequency, HF = High Frequency.
- Operating Mode:** User selectable configurations. Between system elements, a comma (,) = separate amplifier channels; a slash (/) = single amplifier channel. DSP = Digital Signal Processor.  
IMPORTANT: To achieve the specified performance, the listed external signal processing must be used with EAW-provided settings.
- Operating Range:** Range where the processed Frequency Response stays within -10 dB SPL of the power averaged SPL within this range; measured on the geometric axis. Narrow band dips are excepted.
- Nominal Beamwidth:** Design angle for the -6 dB SPL points, referenced to 0 dB SPL at the highest level.
- Axial Sensitivity:** Power averaged SPL over the Operating Range with an input voltage that would produce 1 W at the nominal impedance; measured with no external processing on the geometric axis, referenced to 1 m.
- Nominal Impedance:** Selected 4, 8, or 16 ohm resistance such that the minimum impedance point is no more than 20% below this resistance over the Operating Range.
- Accelerated Life Test:** Maximum test input voltage applied with an EIA-426B defined spectrum; measured with recommended signal processing and Recommended Protection Filter.
- Calculated Axial Output Limit:** Highest average and peak SPLs possible during the Accelerated Life Test. The Peak SPL represents the 2:1 (6 dB) crest factor of the Life Test signal.
- High Pass Filter:** This helps protect the loudspeaker from excessive input signal levels at frequencies below the Operating Range.

### GRAPHIC DATA

- Resolution:** To remove insignificant fine details, 1/12 octave cepstral smoothing was applied to acoustic frequency responses and 1/3 octave cepstral smoothing was applied to the beamwidth and impedance data. Other graphs are plotted using raw data.
- Frequency Responses:** Variation in acoustic output level with frequency for a constant input signal. Processed: normalized to 0 dB SPL. Unprocessed inputs: 2 V (4 ohm nominal impedance), 2.83 V (8 ohm nominal impedance), or 4 V (16 ohm nominal impedance) referenced to a distance of 1 m.
- Processor Response:** The variation in output level with frequency for a constant input signal of 0.775 V = 0 dB reference.
- Beamwidth:** Average angle for each 1/3 octave frequency band where, starting from the rear of the loudspeaker, the output first reaches -6 dB SPL referenced to 0 dB SPL as the highest level. This method means the output may drop below -6 dB SPL within the beamwidth angle.
- Impedance:** Variation in impedance magnitude, in ohms, with frequency without regard to voltage/current phase. This means the impedance values may not be used to calculate True Watts (see 9 above).
- Polar Data:** Horizontal and vertical polar responses for each 1/3 octave frequency band 100 Hz to 16 kHz or Operating Range.