



TESSERACT

THE NEXT DIMENSION IN SOUND

Product Description:

Tesseract is a high-power, 3-way, tri-amplified loudspeaker system designed, and TMH Qualified, by Tomlinson Holman, to be used in professional screening rooms, dubbing stages, film and digital cinema theaters and high-end home theaters.

Tesseract has already made inroads into some impressive and influential applications, most recently the executive screening rooms for Revolution Studios and Liberty Livewire. Working into rooms up to 30,000 cu.ft., the Tesseract is perfectly suited for the smaller, more intimate listening environment.

Tomlinson Holman's designs are installed in thousands of theaters, dubbing stages and screening rooms worldwide. Answering the call for a high-powered small-to-medium-room system that would provide all the detail and clarity of the larger systems, Holman developed this 3-way approach to minimize the discontinuity of the crossover frequencies in the older 2-way systems when used in rooms with a speaker to listener distance of less than 30 feet.

Holman explains, "You can think of the high frequency box as a scale model of the large theatrical two-way system that has served so well in the past. Two direct radiators handle the midrange, and a high frequency compression driver and horn handles the treble. The match between the two at crossover is extremely good, including in amplitude, phase, time and directivity. However, in this case, due to the low frequency range capability of the mids that match the horn, we've moved to a 3-way design with the LF crossover at 160Hz. This permits mounting of the woofer cabinet either under, over or to the sides of the mid/hi box with no compromise."

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Product Features:

Film/Video(Music) Switch

Normally such rooms are tuned to ISO 2969 Curve X (SMPTE 202), or simply the "X-curve", for film originating program. However, video-originating material is normally designed to be played on a "flat" monitor response. A "Film/Video" switch applies the correct equalization for either condition. For program material originating in video, or for newer DVD Audio/5.1 music releases mixed in a standard environment, a single contact closure switch is all that is required to engage the desired EQ. This equalization is applied to all 5 channels. For 6 channel surround systems, the surround signal is passed through the crossover box before applying the additional surround decoding process.

Screen Adaptation Jumpers

The system is designed for both conventional and high-transparency (Micro Perforated) motion picture screens. Jumpers are set inside to determine whether the speakers are behind a screen or not, and which type of screen is in use.

Professional Bass Redirection

"Bass Management" is the common term used widely to describe low frequency extension, yet rarely achieved correctly. Tesseract "manages" the bass properly, routinely providing lower frequencies than virtually all other systems, but not "overhyped", rather with flat, smooth response.

Proprietary bass management circuitry extends the low frequency bandwidth of all channels downwards to the subwoofer cutoff frequency. This is particularly important for dubbing stages, to be certain of the content of the lowest bass on the soundtrack. Many times dubbing stage systems with their typical 40Hz cutoff have been shown to be inadequate as very low frequency rumbles or "pops" were missed when recorded on the track. Future proofing program content means listening to the full frequency range of the program material, as most home systems now provide bass handling of a well set up living room to well below that of many dubbing stages.

Engineered Cabinet Design

The Tesseract three-way design used two cabinets per channel. The LF-2 low-frequency box uses two, high-excursion/low-distortion custom engineered woofers. The MH-2 mid/hi frequency cabinet is narrower than the woofer box allowing it to be rotated and tilted to match the seating coverage area with the left and right channels "toed in" as required. The box is then blended into the baffle wall with leaded vinyl sound barrier material to minimize diffraction off the edges of the cabinet, and to provide a continuous plane for the 2-pi environment of the woofer.

The twin midrange drivers provide smooth response and the correct directivity to match the woofer cabinet at their low frequency range limit and the high frequency horn at their upper limit. The high frequency horn and driver utilize a neodymium magnet structure for very high magnetic flux while maintaining trim weight. The two cabinets are isolated from one another and the baffle wall by appropriate resilient mounting, minimizing rattles and "early" sound that arrives at the listener by mechanical transmission before air transmission.

Specifications:

The Tesseract LMH-1 loudspeaker system is comprised of a custom designed crossover that accepts 6 inputs (L,R,C,Sw,Ls,Rs) and divides the main screen channels into low, mid and high frequency outputs for feeding the tri-amped L, C, R speaker cabinets. The screen and surround outputs are passed through the "Inverse EQ" filter allowing for flat response in non-theatrical playback mode. Hi quality components are used throughout including THAT Corp. differential input amplifiers. Crossover dimensions are 19"w x 1.75"h x 10"d and uses an external power supply unit providing a regulated ± 18 vdc output.

The Tesseract LMH-2 is the same crossover as above, but incorporates TMH patented "Bass Manager" within the same (2RU) chassis providing a completely integrated 5.1 loudspeaker control unit. Independent (or ALL) channel muting is optional.

The MH-2 cabinet uses an Electrovoice 90 x 40 constant directivity horn and 2" compression driver for the high frequencies above 2kHz. The midrange components are Dynaudio 6" cone drivers with a 3" voice coil. Two speakers are mounted in a vertical array, closely matching the directivity pattern of the horn. MH-2 cabinet dimensions are 28.75"h (730mm) x 12.75"w (324mm) x 18"d (457mm).

The LF-2 cabinet uses a pair of custom 12" high power handling woofers in a tuned and ported cabinet. The LF-1 uses a single 12" driver for smaller volume rooms. LF-1 & 2 cabinet dimensions are 29.5"h (749mm) x 18"w (457mm) x 16"d (406mm).

Tesseract is normally installed flush mounted in a baffle wall. The center channel is installed behind an acoustically perforated film/video screen, and the left and right channels may be placed either behind the screen or just outside the edges.

The recommended rough opening for the screen channel loudspeakers is 64"h (1.625m) x 21"w (.53m). The acoustical center should be located at 5/8 the screen height and will be 47" (1.19m) to the speaker platform. Allow a minimum of 6" (152mm) from the face of the baffle wall to the screen to allow for pan and tilt of the MH-2 cabinet.