

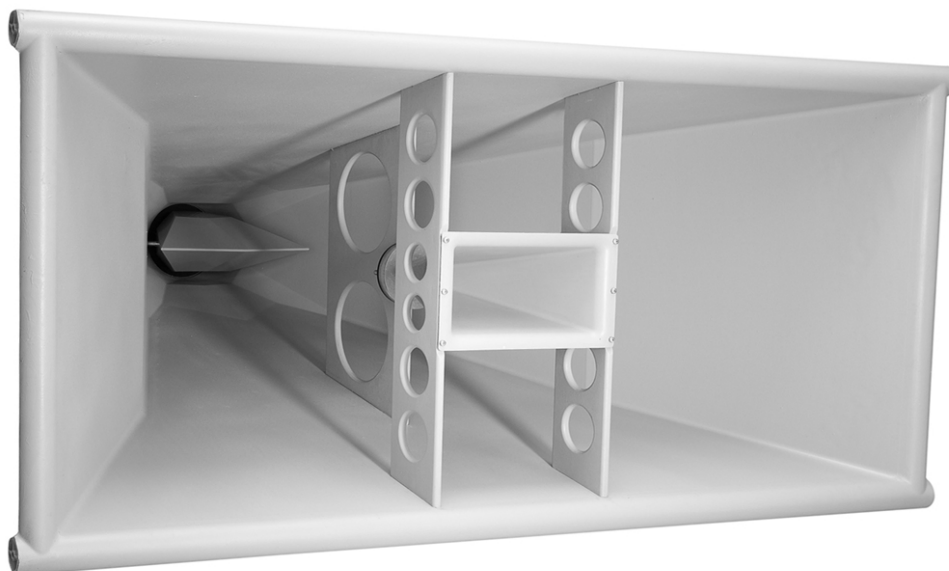
# MODULAR STADIUM TECHNOLOGY

Funktion-One's Modular Stadium Technology (MST) addresses large, acoustically challenging environments such as Arenas and Stadia. The series of large format MST Horns allow sound to be focused where it's needed, without unnecessarily exciting the reverberant space leading to clear message transmission and intimate, intelligible and involving sound.

Achieving good vocal intelligibility has always been a primary goal of any public address system. This is of particular importance in stadiums where the focus is on announcements and commentary. More recently, systems have been required to have sufficient bandwidth to be entertainment systems too. The major obstacles to achieving vocal intelligibility in large indoor and outdoor spaces are the very long reverb times and intelligibility destroying secondary arrivals (reflections) from roof or walls. This is a natural result from diffraction of frequencies whose wavelength is larger than the mouth dimensions of typically used loud-speaker waveguides. Standard waveguides are only large enough to control female vocal frequencies. Deeper male vocal and low mid frequencies from music are not controlled and so are diffracted in all directions giving rise to reflections. Therefore, the answer to highly reverberant spaces, is to employ sufficiently large waveguides to completely control all relevant frequencies including low mid, enabling audio to be directed solely to the audience areas. The sound that is normally exciting the reverberant field is actually focused on the people so not only is intelligibility improved but sound level is also increased. It therefore behoves one to implement large waveguides of sufficient strength and stiffness to be fit for this purpose. This would usually imply large devices of impractical weight.

Funktion One have been investigating and developing composite structures since our ground breaking installation at The Millennium Dome in London. In our MST Horns we have achieved a combination of structure and materials which integrate strength, light weight and weather resistance with outstanding acoustic properties. This composite technology has opened the door to manufacturing large waveguide developments of Funktion One's unique cone driver loading technique weighing only 65kg. This technology offers unparalleled audio quality and sensitivity from a finely tuned cone driver and waveguide combination and the level of directivity control to be expected from a near 2 metre waveguide. The controlled directivity behaviour of the waveguides allows them to be vertically combined at angles varying between 1 and 22.5 degrees to achieve desired SPL and coverage footprint.

MST Horns are installed in the Ice Hockey Arena and the extensive Bob Sleigh site in Sochi for the Russian Winter Olympics in 2014.



MST10-40



## MST10-40

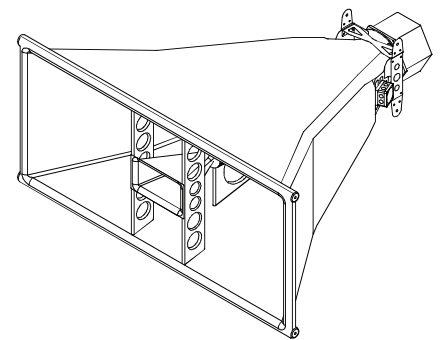
### Features:

- Large composite waveguide for unprecedented dispersion control and focus.
- Funktion One designed, wide bandwidth, 10" driver
- Unique loading provides very high intelligibility for the most acoustic challenging environments.
- Lightweight
- Optional coaxial high frequency horn
- Different dispersions available
- Straightforward rigging
- Weather resistant construction

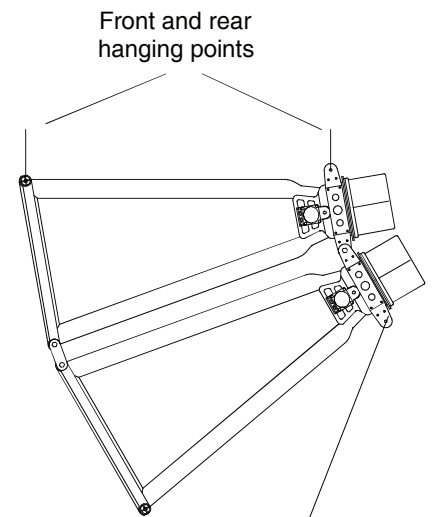
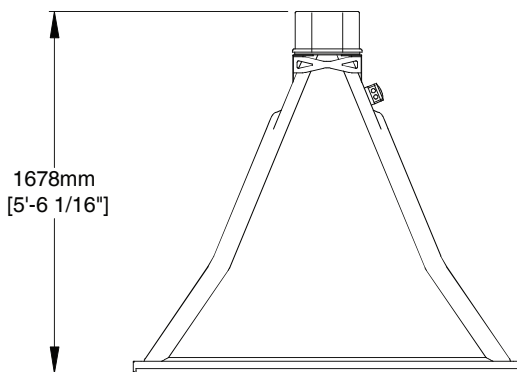
**Please contact Funktion One for system design advice**

Driver	Frequency Response $\pm 3\text{dB}$	Sensitivity (1W at 1m)	Power (rms <sup>**</sup> )	Nominal Impedance
10"	150 - 6k5Hz	110dB	250W	16 $\Omega$
1.4"	4.5k - 18kHz	111dB	75W	16 $\Omega$

\*Please check website for latest crossover settings



Weight: 65kg (143lbs)  
 Nominal Dispersion: 40° Horizontal x 20° Vertical  
 Construction: Special Lightweight Composite  
 Connectors: Wago terminal box (other options available)



Metalwork allows for variable splay angle

