QLight™ series

Turbosound®

Performance and Flexibility

The QLight™ series is Turbosound's most comprehensive range of portable loudspeaker products to date. Designed according to proven acoustic principles, the QLight™ series delivers professional quality sound across a broad spectrum of portable and fixed install applications.

The requirement for loudspeaker products to be adaptable to both mobile use and for permanent installation made for a tough and somewhat conflicting design brief. A discreet, professional appearance was essential to allow the loudspeakers to blend effectively into differing environments; so a cosmetic package of semi-matt black textured paint with a black reticulated foam grille was specified. The more traditional TurboBlue™ textured paint is optionally available.

▲ QLight™ series loudspeakers provide the main PA and delay rings for several thousand festival-goers in Old Lyme, Connecticut

For corporate and audio-visual rental applications QLight™ series loudspeakers need to be physically small, manageable and easy to transport. They must also deliver great sound straight out of the box and be quick and easy to set up and operate with the minimum of technical expertise.

The LMS-D4 and LMS-D6 digital loudspeaker management systems—specifically for use with the TQ-308, TQ-310, TQ-315, TQ-445, TQ-425 and TQ-115—were developed to optimise the loudspeaker's performance, with tailored equalisation and crossover functions specific to each model. This ensures the best possible performance, consistency and reliability, time after time. The LMS-D4 and LMS-D6 controllers make parameters such as limiter settings, gain, polarity, plus application-dependent voicing, available to the user in order to match specific operating and room conditions. Multiple units of a single crossover model can be kept in rental stock, then configured for a particular job by simply calling up the factory pre-set programs from the menu.

For stand-alone and portable systems the simplicity of the LMS-D4 is recommended, while more complex audio systems s will benefit from the greater flexibility of the LMS-D6. Settings are also available for larger installed systems that include third party controllers.

The asymmetrical multi-functional cabinet shape of the TQ-308, TQ-310 and TQ-315 lend a high degree of flexibility to these multi-purpose loudspeakers. They will effortlessly double as front-of-house or floor monitor speakers, with equalisation being optimised by the associated controller. The asymmetrical design provides an optimum wedge angle and additionally helps to maintain a low profile on stage.

Mobile use requires that handles and pole mounts should be included, but at a minimum cost penalty to installers. Turbosound's comfortable recessed carrying handles are constructed as an integral part of the cabinet, ergonomically placed over the centre of gravity for safe lifting and carrying.

QLight™ loudspeakers are fitted with a comprehensive range of rigging and mounting options. Present on all models is either the facility to install quick-release RT-767 ring type flypoints, or internal rigging points which are compatible with M10 shoulder eyebolts. This simple yet effective method allows cabinets to be rapidly suspended in a venue and accurately angled for optimum room coverage. All QLight™ models can also be wall or ceiling mounted using Turbosound wall and ceiling brackets. These fit unobtrusively behind the box, and are load tested for security. A generic pole bracket—suitable for use with any cabinet fitted with a pole mount socket—is available, as well as a special shock-mount wall bracket for use when attenuation of structure-borne transmission is needed.

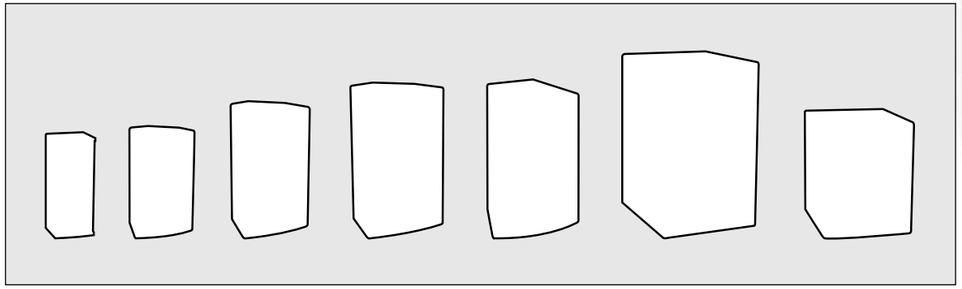
▲ LMS-D4

▲ LMS-D6

Swivel brackets provide a simple and cost effective method of wall or ceiling mounting QLight™ cabinets, either horizontally or vertically, and allow for a wide range of angle adjustment. These are available for the TQ-230, TQ-308, TQ-310 and TQ-315.

Pole mounts are fitted to all QLight™ models, to allow them to be mounted at the correct height above complementary bass cabinets, and for use with 35mm speaker stands. The TQ-445 can also be assembled into arrays or clusters, using the proprietary FB-58 flybars. These are modular flybars which are linked together for the required horizontal coverage, while the cabinets are flown in columns using adjustable flying chains attached to the keyhole plates fitted to the cabinet as standard. In this way the entire load is taken not through the boxes, but through load-certified steel hardware.

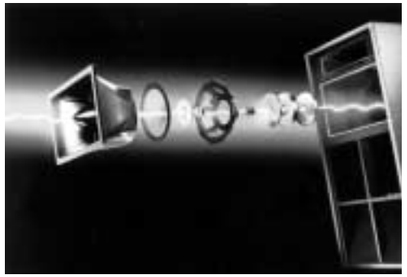
QLight™ loudspeakers are also available in self-powered formats, utilising innovative Class D amplifier technology with 96kHz DSP. Check out the QLight™ DP series at www.turbosound.com



TQ-230 TQ-308 TQ-310 TQ-315 TQ-445 TQ-425 TQ-115

Loaded with Innovation

Turbosound has consistently led the field of professional audio over the last two decades in terms of sonic accuracy, with many patented designs awarded.



▲ TurboMid™ device in the TMS-4

In the early 80's the invention of the TurboMid™ device first made it possible to exploit the inherently low harmonic distortion of a paper cone driver in the mid-range section of a highly efficient three-way horn-loaded design, giving significantly better clarity and projection in the critical vocal ranges over the conventional two-way formats available at the time. These Turbosound designs effectively set the standard for modular PA systems for the next 10 years, with more than 10,000 TMS and TSE series loudspeakers sold and in use around the world.

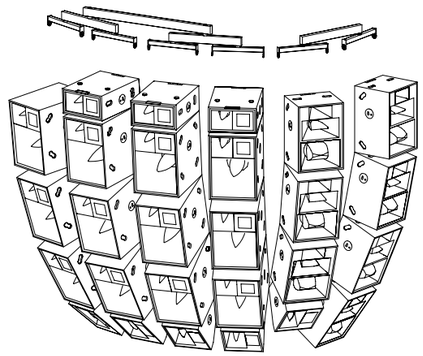
Flashlight's Virtual Point Source Array took the cone midrange concept to an even higher level in 1990, logically sub-dividing the frequency range across four drive units—with cone-type transducers exclusively dedicated to the entire vocal range—maximising the performance of each component within a restricted bandwidth. The 'turnkey' system approach—combining modular loudspeakers, flying hardware, loaded amplifier racks, processing and all necessary cabling—enabled the creation of a global network of fully compatible sound systems, guaranteeing excellent and consistent sound quality.

Floodlight, with its wider horizontal dispersion, integrated seamlessly with Flashlight—giving the ultimate flexible audio toolbox for concert touring and festivals, arenas and theatres, for rock and roll and corporate events—and also provided a powerful and efficient stand-alone solution for regional touring and smaller venues.

Brand new for 2004, Turbosound's Aspect once again sets the standard for professional portable sound reinforcements, using patented Polyhorn™ designs which dramatically improve the arrayability of flown and ground stacked clusters.

The Turbosound QLight™ series of portable loudspeaker products not only draws from this rich heritage, but also continues to make use of new innovations in acoustics technology as a result of our on-going investment in research and development.

Converging Elliptical Waveguides™ are used exclusively in QLight™ TQ-300 series enclosures. These distinctive high frequency horns are designed to give very even dispersion with a clearly defined cut-off, smoother frequency response and lower

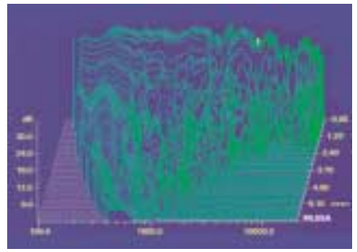


▲ Flashlight and Floodlight components combine effectively in a typical cluster

distortion. The comparatively short horn flare results in near physical HF and LF driver alignment to ensure simultaneous time arrival at the listener. This produces a clear and coherent acoustic image that helps to define and locate the direction of the source.

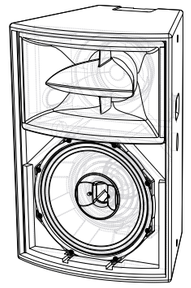
▲ Converging Elliptical Waveguide™

Secondly, the horn flare is both short and wide, and therefore ensures that the acoustic wavefront is shaped quickly and smoothly, eliminating unwanted reflections in the throat area. Finally, the CEW™ horn lacks the sharp break angles found in many conventional constant directivity horns, and so does not suffer from undesirable diffraction edge distortion. The result is simple: better high frequency sound and improved pattern control.



▲ TQ-445 waterfall analysis shows clean decay

The selection of drive units for the QLight™ series was equally critical. Rather than attempting to fix 'off-the-shelf' driver deficiencies with drastic corrective processing, we designed our drive units from scratch, expressly for their intended purpose. Substantially large magnet structures are the key to providing sufficient 'horsepower' to produce high SPL and adequate headroom. QLight™ loudspeakers require DSP only for application voicing, for example to trim the bass response of the TQ-310 and TQ-315 and firm up the midrange when they are used specifically as floor monitors.



▲ TQ-445

The TQ-445 is unique in applying the benefits of midrange cone-type transducers to a compact format. The three-way design maximises the potential performance from each individual drive unit, and offers tangible advantages when compared to conventional 12"/2" two-way designs of a similar size. Firstly, because of the compression driver's relatively high crossover at 8kHz, it is subjected to less mechanical stress and sounds more transparent and natural, reproducing high frequencies and particularly vocal sibilants clearly and without distortion. Secondly, the midrange speaker is specially developed to enhance vocals naturally and without excessive DSP, and project them at a distance. This greatly improves the intelligibility of a PA system. Thirdly, the co-axial arrangement of the 12" LF and 1" HF drivers—as well as resulting in a far smaller cabinet—allows bass and treble frequencies to be emitted on a common axis.

The subjective impression is like listening to loud hi-fi quality, allowing the listener to focus on the music rather than on the loudspeaker.

TQ-230

The TQ-230 is the ideal in-fill or background music two-way loudspeaker enclosure for a wide variety of mobile theatre, corporate and audio-visual applications, as well as being recommended for use in many types of fixed installations ranging from cafés, bars, pubs and restaurants to retail stores and houses of worship.

It consists of two 5” reflex-loaded low frequency drivers and a 1” high frequency compression driver on a rotatable 100°H x 60°V horn matched with an internal passive crossover network in a vented birch plywood enclosure.

Its wide dispersion pattern is designed to maximise sound coverage evenly over a wide area, and this makes the TQ-230 the ideal choice for use in corporate rooms, lecture theatres or restaurants and cafes. The HF horn is rotatable through 90° to allow enclosures to be mounted in a landscape format if required. In this orientation the TQ-230 is well suited for use as an unobtrusive theatre under-balcony loudspeaker.

The TQ-230 is magnetically shielded as standard to enable use in audio-visual applications, and in close proximity to TV screens and computer monitors. Input and parallel link-out connections to the speaker are provided on the rear panel by two Neutrik Speakon NL4MP connectors. For extended bass response simply add QLight™ bass enclosures such as the TQ-115 for a wider frequency response.

Installing the TQ-230 is easy using the rigging points provided. M6 inserts on the rear panel mate with OmniMount™ brackets and a range of Turbosound wall and ceiling brackets, and the loudspeaker can also be suspended and angled from lighting truss using Turbosound scaffold clamps. A pole mount socket is included for use with tripod stands and 35mm speaker poles.

technical specifications

- **frequency range** 70Hz - 20kHz ±4dB
- **power handling** 125 watts r.m.s., 250 watts program
- **sensitivity (1w@1m)** 90dB
- **maximum SPL** 114dB cont., 120dB peak
- **dispersion (av.)** 100°H x 60°V @-6dB points
- **impedance (nom.)** 8 ohms
- **dimensions (hxwxd)** 528mm x 210mm x 200mm
- **net weight** 9.5kg (20.9lbs)

TQ-308

The TQ-308 is a compact full range loudspeaker that excels in corporate rental applications where the speakers must remain virtually invisible and yet provide wide and even sound coverage.

Loaded with an 8” low-mid frequency driver and a 1” high frequency compression driver, the TQ-308 benefits from Turbosound’s Converging Elliptical Waveguide™ (CEW™), which generates a smooth wavefront and reduces harmonic distortion. The high frequency waveguide has a 100°H x 60°V nominal dispersion, and maintains excellent pattern control down to low frequencies over a wide area. The HF pattern may be changed by rotating the horn through 90° within the enclosure.

The TQ-308 must be used with LMS-D4 or LMS-D6 digital crossovers for correct operation, and will provide full range excellent performance for many audio-visual, corporate and dry-hire applications, both with speech and music program.

The unusual asymmetrical cabinet shape has several functions: as well as minimising internal reflections—and therefore reducing sound colouration—the wedge angle allows the TQ-308 to be used as a compact floor monitor, and aids installation in rooms where there is limited space or horizontally in venues with low ceilings.

For installation purposes the TQ-308 provides rigging points for use with a range of mounting hardware including Turbosound wall and ceiling brackets, swivel brackets and flying frames, as well as 35mm pole mount socket.

The cabinet construction is based around 12mm birch plywood in order to keep weight to a minimum and maximise strength, and is finished in black textured paint as standard (TurboBlue™ is optionally available). Speakon NL4MP connectors are located on a panel at the rear of the cabinet, while a single recessed handle is provided on the top of the cabinet for easy lifting and carrying.

technical specifications

- **frequency range** 68Hz - 20kHz ±4dB*
- **power handling** 250 watts r.m.s., 500 watts program
- **sensitivity (1w@1m)** 96dB
- **maximum SPL** 123dB cont., 129dB peak
- **dispersion (av.)** 100°H x 60°V @-6dB points
- **impedance (nom.)** 8 ohms
- **dimensions (hxwxd)** 464mm x 270mm x 241mm
- **net weight** 11.5kg (25.3lbs)

*with LMS-D6 / LMS-D4

Turbosound

TQ-310

The TQ-310 provides more bass response and overall sound pressure level than the TQ-308 due to its larger cabinet and 10’ bass driver.

It is used with the LMS-D4 or LMS-D6 digital crossover controller, which provides model-specific EQ and limiter parameters. Equally suited to mobile as well as permanent speech and music sound reinforcement applications, the TQ-310 can also be used as a compact wedge monitor due to its low profile and asymmetrical cabinet shape.

The loudspeaker complement consists of a front loaded 10" low-mid frequency driver and a 1” high frequency compression driver on a rotatable 100°H x 60°V HF horn, matched with an internal passive crossover network.

The TQ-310 features Turbosound’s Converging Elliptical Waveguide™ (CEW™) technology. The comparatively short flare ensures that the wavefront is shaped smoothly, eliminating reflections in the throat area while giving excellent pattern control.

The waveguide can be removed and rotated through 90°, to allow a swap of the horizontal and vertical dispersion patterns when either flying the cabinet horizontally or when used as a floor monitor.

Optional removable RT-767 flypoints allow the TQ-310 to be easily and rapidly flown in a portable application such as a theatre tour, but equally well in permanent installs like nightclubs or bars. Internal M10 rigging points are built into the cabinet for use with Turbosound wall and ceiling brackets, and flying frames for permanent installs.

The standard finish is black textured paint, although the TQ-310 can also be supplied in TurboBlue™ textured paint. Connection to the loudspeaker is via two Neutrik Speakons, and the cabinet is fitted with a removable reticulated foam grille.

technical specifications

- **frequency range** 65Hz - 20kHz ±4dB*
- **power handling** 350 watts r.m.s., 700 watts program
- **sensitivity (1w@1m)** 96dB
- **maximum SPL** 124dB cont., 130dB peak
- **dispersion (av.)** 100°H x 60°V @-6dB points
- **impedance (nom.)** 8 ohms
- **dimensions (hxwxd)** 525mm x 319mm x 277mm
- **net weight** 21kg (46.2lbs)

*with LMS-D6 / LMS-D4

TQ-315

The TQ-315 gives true full range response from a portable trapezoidal enclosure, designed for use in corporate rental, theatre, and small to medium sized auditoria, and fixed installations.

It consists of a front loaded 15” low frequency driver and a 3” diaphragm high frequency compression driver on a 80°H x 50°V Converging Elliptical Waveguide™. The TQ-315 is adaptable to either fully bi-amplified operation in conjunction with Turbosound bass cabinets or subwoofers, or in passive mode, by means of an easily accessible rear panel toggle switch. Depending on the particular rental application, boxes can be quickly and simply pre-configured prior to loading out to the venue.

The TQ-315 features Turbosound’s Converging Elliptical Waveguide™ (CEW™). The comparatively short flare ensures that the wavefront is shaped smoothly, eliminating reflections in the throat area. Additionally this design does not suffer from the distortion typical of horns employing diffraction edges.

The TQ-315 is used with Turbosound LMS-D4 or LMS-D6 digital Loudspeaker Management Systems, which contain programs that optimise the crossover and limiting parameters for that model.

The asymmetrical cabinet shape allows real flexibility of use: either as a front-of-house speaker or as a wedge monitor, simplified by the rotatable HF waveguide. In this way rental company inventory can be kept to a minimum by using multiple units of the same model.

The TQ-315 can also be permanently installed using Turbosound wall and ceiling brackets, flying frames and optional RT-767 flypoints, or with M10 eyebolts attached to the internal M10 rigging points.

technical specifications

- **frequency range** 55Hz - 20kHz ±4dB*
- **power handling** 680 watts r.m.s., 1360 watts program
- **sensitivity (1w@1m)** 99dB
- **maximum SPL** 130dB cont., 136dB peak
- **dispersion (av.)** 80°H x 50°V @-6dB points
- **impedance (nom.)** 8 ohms
- **dimensions (hxwxd)** 691mm x 443mm x 381mm
- **net weight** 35.5kg (78.1lbs)

*with LMS-D6 / LMS-D4

TQ-445

The TQ-445 offers the highest level of audio performance and definition, with its associated LMS-D6 digital controller, due to its unique horn-loaded three-way design and co-axial driver configuration.

Low frequencies up to 1300 Hz are handled by a custom 12" LF unit, leaving the remaining vocal ranges up to 8kHz to be handled by a proprietary 6.5” cone transducer on a 60° by 40° horn, which is loaded with a TurboMid™ device. High frequencies, such as vocal sibilants and cymbals, are reproduced by a 1” compression driver working well within its operating capabilities, mounted co-axially at the rear of the LF unit in order to save baffle space.

The exclusive use of similar type cone transducers in both the low and mid frequency bands guarantees not only a seamless transition at the crossover frequency, but also exceptional efficiency and vocal projection.

The TQ-445 is intended for all types of nightclub and theatre tour applications. As such, it is equipped with a huge variety of hardware options. The cabinet is fitted with keyhole flyplates and tilt strap brackets to enable modular arrays to be designed, for example for left-centre-right clusters. In addition, a range of hardware is optionally available for single point mounting and scaffold bar fixing, including a fully tiltable flying frame. It can also be used with 35mm speaker stands, and in conjunction with Turbosound bass and sub-bass enclosures on straight poles.

For permanent installations the cabinet can be flown using cost effective eyebolts attached to the built-in M10 rigging points.

technical specifications

- **frequency range** 75Hz - 20kHz ±4dB*
- **power handling** 400 watts r.m.s., 800 watts program
- **sensitivity (1w@1m)** LF: 103dB, MF/HF: 104dB
- **maximum SPL** 131dB cont., 137dB peak
- **dispersion (av.)** 60°H x 40°V @-6dB points
- **impedance (nom.)** LF: 8 ohms, MF/HF: 12 ohms
- **dimensions (hxwxd)** 588mm x 409mm x 363mm
- **net weight** 30kg (66lbs)

*with LMS-D6 / LMS-D4

TQ-425

The TQ-425 provides sub-bass reinforcement for many QLight™ enclosures: in particular the TQ-310, TQ-315 and TQ-445. It is equally suited to mobile use in corporate, industrial and audio-visual applications as well as permanent sound reinforcement installations.

It consists of two high efficiency 4” voice coil 15” low frequency drivers in a compact vented enclosure, which are carefully designed and optimally tuned with the enclosure to reproduce high sound pressure levels at bass and sub-bass frequencies. The 15” drivers together add up to a substantial cone area (equivalent to a 21” speaker), which, when coupled to the large motor structures, are able to react quickly to transient impulses and move meaningful amounts of air. It is this ability which creates the ‘feel’ of solid low end in music.

The TQ-425 is designed for use with the LMS-D6 or LMS-D4 digital loudspeaker management systems, which provide 24dB/octave crossovers and a wide range of factory preset programs for QLight™ series and other Turbosound products.

Although purposefully designed for mobile applications—and for that four heavy duty wheels are fitted to the rear of the cabinet, together with strategically located flush handles—the TQ-425 is also provided with internal rigging points which are used to fly the enclosure, either with M10 eyebolts or proprietary Turbosound flying strips.

The enclosure is constructed from 3/4” (18mm) birch plywood, heavily braced internally, glued and screwed together for maximum strength. It is finished in a durable black semi-matt textured paint (also available in TurboBlue™ textured paint).

technical specifications

- **frequency range** 45Hz - 200Hz ±4dB
- **power handling** 800 watts r.m.s., 1600 watts program
- **sensitivity (1w@1m)** 100dB
- **maximum SPL** 132dB cont., 138dB peak
- **dispersion (av.)** n/a
- **impedance (nom.)** 4 ohms
- **dimensions (hxwxd)** 836mm x 511mm x 632mm
- **net weight** 68kg (149.6lbs)

TQ-115

The TQ-115 provides a convenient way of augmenting the bass response of QLight™ enclosures with a very compact bass cabinet that can be easily installed or used in a portable sound reinforcement application. In particular the TQ-230, TQ-308, TQ-310 and TQ-315 will benefit from the extended low frequency response of the TQ-115. It is small enough to fit into confined spaces, and yet delivers great performance.

This front-loaded subwoofer consists of a custom 4” voice coil 15” low frequency driver in a reflex enclosure, designed for use in a variety of theatre, corporate and audio-visual applications, as well as in numerous fixed installations ranging from nightclubs and bars to themed environments and houses of worship.

Use the LMS-D4 or LMS-D6 digital controllers when combining the TQ-115 with other QLight™ models to form a high quality bi-amplified sound system. The controllers have pre-configured programs to set the correct crossover frequencies and limiter settings for the speakers in use.

The TQ-115 is constructed from 3/4“ (18mm) birch plywood, and is finished in black textured paint (TurboBlue™ paint is optionally available). Recessed flush handles are provided for easy lifting and carrying, and an integral pole mount is fitted to the top of the enclosure to allow QLight™ series enclosures such as the TQ-230 or TQ-310 to be mounted at the correct height above the subwoofer.

Additionally the TQ-115 can be flown in permanent installations using simple flying strips attached to the M10 rigging points provided on the top and sides of the cabinet.

technical specifications

- **frequency range** 45Hz - 200Hz ±4dB
- **power handling** 400 watts r.m.s., 800 watts program
- **sensitivity (1w@1m)** 96dB
- **maximum SPL** 124dB cont., 130dB peak
- **dispersion (av.)** n/a
- **impedance (nom.)** 8 ohms
- **dimensions (hxwxd)** 559mm x 450mm x 578mm
- **net weight** 34.6kg (76.1lbs)

LMS-D6

LMS-D4

technical specifications

	LMS-D6	LMS-D4
inputs	2 x XLR, pin 2 hot	2 x XLR, pin 2 hot
outputs	6 x XLR, pin 2 hot	4 x XLR, pin 2 hot
frequency response	20Hz – 20kHz ±0.5dB	
dynamic range	108dB, 20Hz – 20kHz, unweighted	
maximum delay	up to 650ms	up to 42ms
net weight	3.5kg (7.7lbs)	2.3kg (5.1lbs)
power req.	90 to 240 volts AC, 50/60 Hz	

LMS-D6

The LMS-D6 loudspeaker management system is a 2-in, 6-out digital controller in a compact 1U x 19” rack mount package that boasts superb audio quality. It is designed for use with QLight™ loudspeaker products and provides steep slope crossover, equalisation and output limiting functions specific to various QLight™ models.

It provides factory-loaded programs for specific loudspeakers, easily selectable from a convenient menu interface, and in addition to these a further nine user-programmable memories are available to allow for considerable system flexibility.

The LMS-D6 is equipped with a switching power supply that automatically adjusts to mains input voltages between 90 volts and 250 volts, allowing it to be used anywhere in the world without adjustment.

LMS-D4

The LMS-D4 loudspeaker management system is a compact and powerful DSP based 2-in, 4-out audio processing unit, ideally suited to live sound and fixed installation applications, and is designed for use with Turbosound QLight™ series enclosures.

It provides tailored equalisation and crossover functions specific to various QLight™ models. In addition, high performance limiters, delays (up to the equivalent of 14 metres), gain, polarity and bass trim controls are accessible to the user in order to match specific operating conditions. The LMS-D4 power supply is auto-switching between 90 volts and 240 volts.

Rigging Hardware

A comprehensive range of rigging and flying options is available for QLight™ series loudspeakers, designed for both portable and fixed installation applications, some examples of which are shown here.

Smaller QLight™ models such as the TQ-230 are also compatible with Omnimount™ series wall and ceiling brackets. Please check the manufacturer's specifications for suitability.

Options for **wall and ceiling mounting** include proprietary Turbosound brackets which fix to the rear of the cabinets using the internal threaded rigging points provided, or to the pole mount sockets fitted to all cabinets. These unobtrusive brackets allow for generous adjustment of both vertical and horizontal angles to ensure that room coverage is optimised, and are simple to install—cables can be run and wall plates can be installed in advance and secured independently without loudspeakers being on site, and then the loudspeakers can be lifted into position, connected and commissioned later.

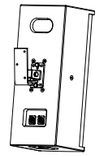
In certain situations where sound transmission through a building structure is a problem, causing sound leakage into adjoining areas, a special **shock mount bracket** with neoprene isolation pads is also available which has a useful level of isolation at low frequencies. Turbosound wall and ceiling brackets brackets are load rated for safe and secure installation, and are available in black (standard) or white (optional) powder coat finish.

Fixed installations that require ceiling brackets of a non-standard or specific length, especially where suspended ceilings are involved, can be catered for by special order.

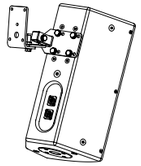
A range of **swivel brackets** has been designed for the TQ-230, TQ-308, TQ-310 and TQ-315 to allow these cabinets to be installed either vertically on a wall with variable horizontal angle, or horizontally from a ceiling or wall with variable downward angle. The brackets attach to a swivel point on one end of the cabinet, and via the pole mount socket on the other. Turbosound swivel brackets are supplied with all necessary speaker fixing hardware and scaffold clamps for attaching to standard 2" lighting truss or bars. They are finished in black or white powder coat.

All QLight™ models are equipped with **pole mount sockets**, to allow them to be mounted at the correct height above complementary bass cabinets such as the TQ-115 or TQ-425, and for use with standard 35mm speaker stands and tripods.

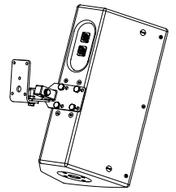
WALL BRACKETS



TQ-230 WITH WB-10
WALL BRACKET



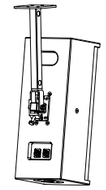
TQ-308 WITH WB-20A
WALL BRACKET



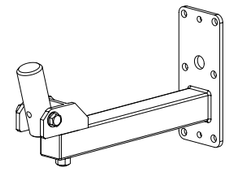
TQ-310 WITH WB-20A
WALL BRACKET

TQ-315 WITH WB-55A
WALL BRACKET

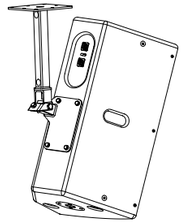
CEILING and POLE BRACKETS



TQ-230 WITH CB-10
CEILING BRACKET

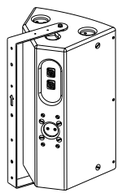


PB-55 POLE BRACKET

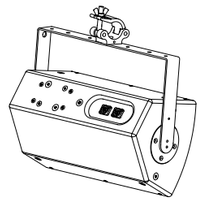


TQ-315 WITH CB-55A
CEILING BRACKET

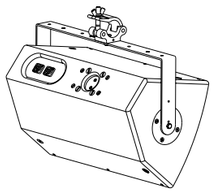
SWIVEL BRACKETS



TQ-308 WITH SB-308
SWIVEL BRACKET



TQ-310 WITH SB-310
SWIVEL BRACKET



TQ-315 WITH SB-315
SWIVEL BRACKET

Rigging Hardware

A universal PB-55 pole-mount wall bracket allows all QLight™ models—and any Turbosound loudspeaker fitted with a pole mount socket—to be conveniently wall mounted. It has a locking facility for extra security.

In venues where rigging points are freely accessible, it is often convenient to hang QLight™ speakers using a **three point rigging** system, attaching to two corresponding rigging points on the top of the box with a third rigging point acting as a pull-back provided on the rear for adjusting the downward angle. This can be achieved using either M10 shoulder eyebolts (use these with the TQ-308 and TQ-445), or the more flexible detachable RT-767 ring type flying fittings (use with TQ-310 and TQ-315).

In some situations only a **single rigging point** is available, in which case the use of a flying frame is recommended with a scaffold clamp assembly (for TQ-308, TQ-310, TQ-315 and TQ-445). Attached to the rigging points on the sides of the box, these frames allow finely variable tilt angle. Turbosound flying frames are supplied with a scaffold clamp for use on 2” scaffold bar or lighting truss.

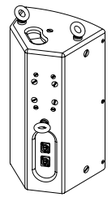
A specially designed FB-12 T-bar is available for the TQ-445 when a single rigging point is available. It attaches to the top of the cabinet, and provides multiple pick-up points along its spine. The position of the chosen pick-up point relative to the centre of gravity determines the initial vertical inclination, and so provides a total of twelve incremental angle positions from which finer adjustment can be made using a pull-back on the rear of the cabinet. A number of accessories are available for use with the FB-12, including a scaffold clamp assembly for use with lighting truss and bars.

Modular FB-58 flybars and fixed length steels form the basis of a flexible and easily adjustable flown cluster system for the TQ-445. The load is taken externally through the steels, which attach to quick-release flypoints on the enclosure sides, and due to the fixed length of the steels the vertical inter-cabinet angle is pre-set to optimise vertical coverage.

Notes on flying loudspeaker systems:
Turbosound rigging hardware has been designed and constructed to a high standard of safety and tested to the most demanding of specifications. However, anyone involved in flying ANY sound system, especially in a touring capacity, should take note of the following advice:

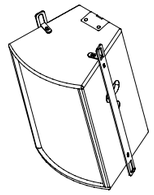
The rigging of a flown sound system may be dangerous unless undertaken by qualified personnel with the required experience to perform the necessary tasks. Fixing of hanging points in a roof should always be carried out by a professional rigger and in accordance with the local rules of the venue. The house rigger and/or building manager must always be consulted.

THREE POINT RIGGING

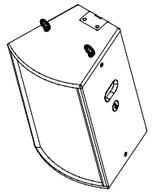


TQ-308 WITH
M10 EYEBOLTS

TQ-315 WITH RT-767
RING TYPE FLYING POINTS

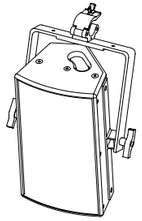


TQ-445 WITH FF-445
FLYING STRIPS



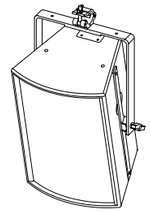
TQ-445 WITH
M10 EYEBOLTS

SINGLE POINT RIGGING

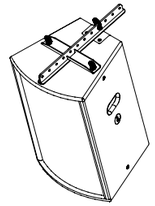


TQ-308 WITH FH-308
FLYING HARNESS

TQ-310 WITH FH-310
FLYING HARNESS

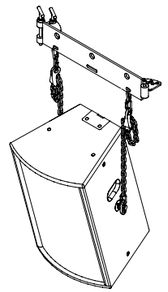


TQ-445 WITH FH-445
FLYING HARNESS

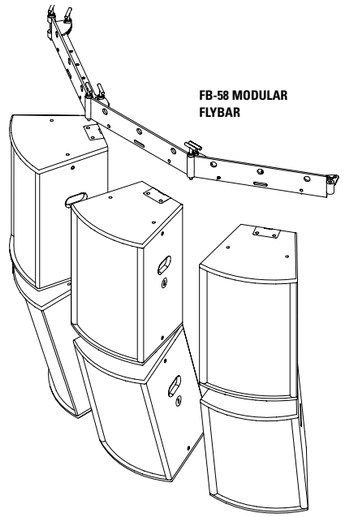


TQ-445 WITH
FB-12 T-BAR

FLOWN CLUSTERS



TQ-445 WITH FB-58
FLYING BAR



FB-58 MODULAR
FLYBAR

Technical Specifications

	TQ-230	TQ-308	TQ-310	TQ-315	TQ-445	TQ-425	TQ-115	
Frequency range (±4dB)	70Hz - 20kHz	68Hz - 20kHz*	65Hz - 20kHz*	55Hz - 20kHz*	75Hz - 20kHz*	45Hz - 200Hz	45Hz - 200Hz	**Frequency range (±4dB)**
Power handling (rms)	125 watts	250 watts	350 watts	680 watts	400 watts	800 watts	400 watts	**Power handling (rms)**
Power handling (program)	250 watts	500 watts	700 watts	1360 watts	800 watts	1600 watts	800 watts	**Power handling (program)**
Rec. amplifier power/ch	250 watts @ 8Ω	500 watts @ 8Ω	LF: 1200 watts @ 8Ω 700 watts @ 8Ω	LF: 600 watts @ 8Ω MF/HF: 160 watts @ 8Ω	LF: 600 watts @ 8Ω MF/HF: 300 watts @ 12Ω	1600 watts @ 4Ω	800 watts @ 8Ω	**Rec. amplifier power/ch**
Sensitivity (1w @ 1m)	90dB	96dB	96dB	99dB	LF: 103dB, MF/HF: 104dB	100dB	96dB	**Sensitivity (1w @ 1m)**
Maximum SPL (cont.)	114dB	123dB	124dB	130dB	131dB	132dB	124dB	**Maximum SPL (cont.)**
Maximum SPL (peak)	120dB	129dB	130dB	136dB	137dB	138dB	130dB	**Maximum SPL (peak)**
Dispersion (av) @-6dB	100°H x 60°V	100°H x 60°V	100°H x 60°V	80°H x 50°V	60°H x 40°V	n/a	n/a	**Dispersion (av) @-6dB**
Nominal impedance	8 ohms	8 ohms	8 ohms	8 ohms	LF: 8 ohms, MF/HF: 12 ohms	4 ohms	8 ohms	**Nominal impedance**
Crossover frequency	2k8Hz passive	3k5Hz passive	3k5Hz passive	1k58Hz passive/active	1.3kHz active (8kHz passive)	125Hz	180Hz	**Crossover frequency**
Dimensions (mm) (HxWxD)	528 x 210 x 200	464 x 270 x 241	525 x 319 x 277	691 x 443 x 381	588 x 409 x 363	836 x 511 x 632	559 x 450 x 578	**Dimensions (mm) (HxWxD)**
Dimensions (ins) (HxWxD)	20.8 x 8.3 x 7.9	18.3 x 10.6 x 9.5	20.7 x 12.5 x 10.9	27.2 x 17.4 x 15	23.1 x 16.1 x 14.3	32.9 x 20.1 x 24.9	22 x 17.7 x 22.8	**Dimensions (ins) (HxWxD)**
Net weight (kg)	9.5	11.5	21	35.5	30	68	34.6	**Net weight (kg)**
Net weight (lbs)	20.9	25.3	46.2	78.1	66	149.6	76.1	**Net weight (lbs)**
Pole mounts	One	One	One	One	One	One	One	**Pole mounts**
Rigging points	2 x M6, 3 x M10	9 x M10, 5 x M8, 4 x M6	4 x M10, 4 x M8, 5 x RT-767	4 x M10, 4 x M8, 5 x RT-767	8 x M10	8 x M10	8 x M10	**Rigging points**
Connectors	2 x NL4MP	2 x NL4MP	2 x NL4MP	2 x NL4MP	2 x NL4MP	2 x NL4MP	2 x NL4MP	**Connectors**
Options	The standard finish is black semi-matt textured paint; also available in TurboBlue™ textured paint				The standard finish is black semi-matt textured paint; also available in TurboBlue™ textured paint			**Options**

* with LMS-D6 / LMS-D4

QLight™ series

QLight™ series Ver 1.1 09/04

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