GENELEC®

AutoCal™

dsp

GLM

GLM SE

- The Genelec 8200 and 7200 loudspeaker systems have utilized DSP to allow for all standard AES/EBU formats of digital audio.

- The 8200/7200 Series will accept sampling rates ranging from 32kHz to 192kHz.

- The 8200 Series will also accept traditional analog signals and perform with all the features and benefits of Genelec 8000 Series products.

AutoCal™

- AutoCal is an automated loudspeaker system alignment algorithm within GLM™ and GLM.SE™. A factory-calibrated Genelec measurement microphone is included.

- Correctly sets levels, distance compensating delays, phase (for subwoofers) and room response equalization.

- SinglePoint and MultiPoint microphone locations for one, two, or three-person mixing environments.

- Interactive Response Editor provides visual readout of measured and corrected response curves as well as full manual editing of acoustic settings.

- Genelec Loudspeaker Manager™ (GLM™) is a computer software that provides necessary control of all loudspeakers on the network.

- Up to 25 loudspeakers and 5 subwoofers are definable and controllable via standard CAT5 cabling.

- All functions and settings are stored in GLM System Setup Files or directly into each loudspeaker.

- Genelec Loudspeaker Manager for Small Environments (GLM.SE™) is a computer software that provides complete control of the GLM.SE™ Monitoring System.

- Standard CAT5 cabling connects the host computer to the SE7261A DSP subwoofer and up to eight 8130A digital input monitors, connected to the subwoofer with standard AES/EBU cabling.

- All functions and settings are stored in GLM System Setup Files or directly into the SE7261A subwoofer.
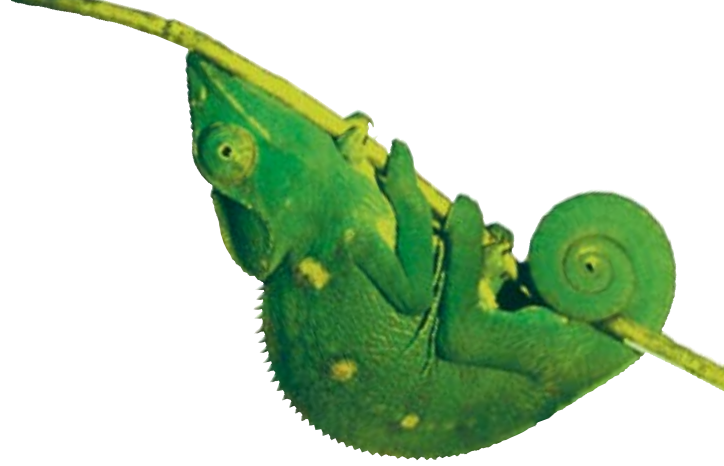
Genelec DSP Monitoring Systems

Since the very beginning in 1978, Genelec Oy has provided tools in our products to assist in improving the acoustic integration of the monitoring loudspeaker into real-world working environments. These tools are now an essential part of Genelec's pioneering active loudspeaker technology. Genelec has always measured, analyzed and calibrated its monitoring systems in its own testing chambers as well as customers' working environments.

It is well known that any listening room imparts its own signature on the response of any monitoring loudspeaker system. A monitor is only as good as its acoustic integration into the room. The acoustic performance advances made in developing the 8000 MDE™ Series and 7000 LSE™ Series products have provided significant performance gains, both in the test chamber and in customer control rooms. These solid acoustic foundations have been essential in taking the next step into the digital world with the 8200, 7200, and GLM.SE™ monitoring systems.

Harnessing DSP power in an attempt to improve the fundamental performance of a compromised loudspeaker design to an acceptable level is hardly a worthwhile effort. A solid acoustic design complemented with enhancing DSP allows further strengthening of the product performance. DSP also greatly expands the loudspeaker alignment toolset to reach greater accuracy in acoustic calibration of monitoring systems. Consistency and ease of use are ensured by the fully automated room calibration AutoCal™, a built-in property of the versatile GLM™ and GLM.SE™ loudspeaker system management software packages.

Genelec's DSP Systems are designed for wide ranging applications: post-production in film and video, broadcast environments large and small, and the varied and demanding world of music recording, mixing and mastering. Among the many criteria, the first and foremost in a Genelec DSP monitoring system, like any Genelec monitoring system, is that it must be robust and reliable. It must also be versatile, adaptable, consistent and easy to use. Through these criteria, the Genelec DSP and SE™ DSP loudspeaker systems take our customers further toward purity of sound reproduction while saving valuable time and earning satisfied customers.

AutoCal™ – Fast, easy and consistent acoustic self-calibration

AutoCal™ provides the industry's first integrated process for complete automated measurement, analysis, and adjustment of every monitoring loudspeaker in the control network to correctly align and integrate each monitoring loudspeaker into the mixing environment.

- Uses factory-calibrated Genelec acoustic measurement microphone (included)
- AutoCal automatically creates a compensation file for host soundcard
- AutoCal aligns Level and compensates Distance differences
- Acoustic Response Editor provides accurate graphical display of the measured response, filter compensation and the resulting system response for each loudspeaker, with full manual control of acoustic settings
- SinglePoint™ and MultiPoint™ microphone positions provide measurements for one, two or three-person mixing environments

AutoCal™

GLM

GLM SE

In GLM™ System

- 8200 Series loudspeaker can utilize four parametric DSP notch filters and four parametric DSP shelving filters
- 7200 subwoofers utilize four parametric DSP notch filters, plus bass roll off controls
- Adjusts correct crossover phase for all subwoofers in the network
- Vertical Axis Trim for situations where loudspeaker acoustic axis cannot be physically optimized
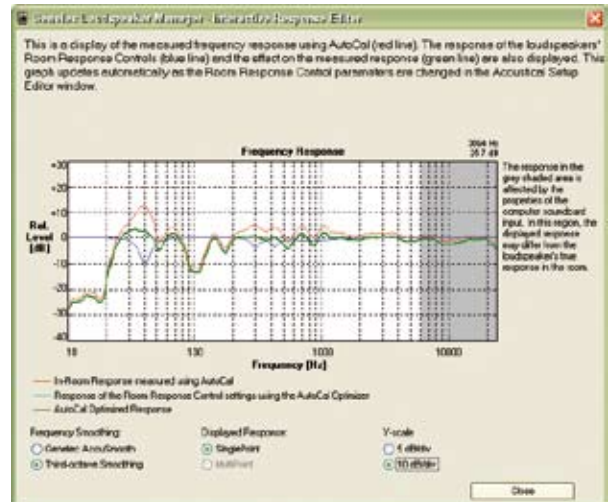
In GLM.SE™ System

- 8130A digital input loudspeaker can utilize two parametric DSP notch filters, plus the room response controls in the loudspeaker hardware
- SE7261A subwoofer utilizes four parametric DSP notch filters, plus bass roll off controls
- Adjusts correct crossover phase for SE7261A subwoofer on the network
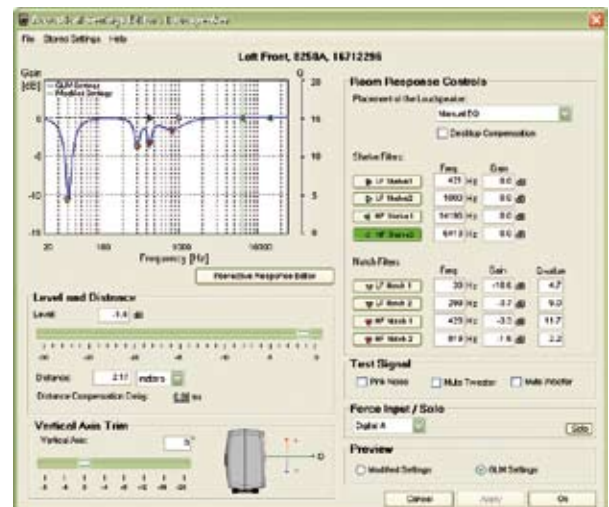

The Interactive Response Editor window shows the original frequency response, correction curve created by AutoCal™ and the final, corrected response.

The Loudspeaker Acoustical Setup Editor window can be used to view and edit the settings of a loudspeaker.

8240A

8250A

7260A

7270A

7271A

GENELEC

8200 and 7200 Series
DSP Monitoring Systems

The 8200 Series monitoring systems are designed for similar near-field monitoring applications and acoustic environments as the 8000 Series analog products, offering a wide range of performance benefits through unique technologies, used and acclaimed in real-world audio productions.

The most critical listening conditions require the most advanced monitoring tools. Customers with digital audio production environments can enjoy the full benefits of new technologies with the 8200 Series.

To complement the 8200 DSP two-way systems, Genelec has developed three robust DSP subwoofers. Built upon the proven LSE™ (Laminar Spiral Enclosure™) technology, the 7260A, 7270A and 7271A deliver articulate and precise low frequency reproduction.

With their four AES/EBU digital inputs and outputs the 7200 subwoofers provide the cornerstone for monitoring room environments equipped with fully digital monitor buss outputs. Multichannel AD conversion with Genelec AD9200A enables use also in conventional analog monitoring environments. All standard 7000 series functions are available in Stand Alone mode, and additional powerful resources become available through GLM™ software. AutoCal™, Genelec's automated self-calibration function, provides precise acoustic alignment and integration in virtually any control room environment.
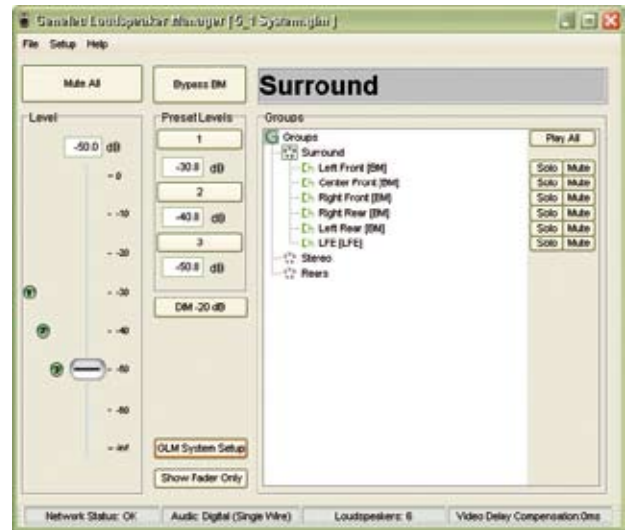

8200 DSP Series back panel

7200 DSP Series connector panel

GLM

GLM™ ─ Genelec Loudspeaker Manager™

GLM™ software brings the entire DSP system together under computer network control

- GLM™ provides connectivity for up to thirty loudspeaker and subwoofers, for example twenty-five 8200 Series loudspeakers and up to five 7200 series subwoofers
- Enables unlimited custom User Setups with all settings and functions stored in GLM™ setup files, or one setup stored directly into each loudspeaker for Stand Alone -use
- Step-by-step Wizard guides user through complete cabling connections and loudspeaker labeling
- Rapid Cabling setups for most common system configurations
- Manual Cabling setups for customized system configurations
- Groups for both Channels and Loudspeakers may be customized by User
- Solo/Mute function for all Loudspeakers and Groups
- Volume controlled via computer, 3rd party USB devices or customer mixing console or workstation
- Video Display Compensation for compensating inherent video delays in digital video devices
- GLM™ provides interface to AutoCal™ automated acoustic self-calibration algorithm

Genelec 8200/7200 DSP systems support three modes of operation:

- Stand Alone: This mode exemplifies the standard operation of Genelec 8000/7000 products with the standard set of room response controls and sensitivity adjustment found on connector panel DIP switches.
- GLM™ Computer Assisted: Once the network is connected and running, all DIP switches on connector panel are ignored. All acoustic parameters of the loudspeakers set through AutoCal™ or User Adjustment are controlled by GLM™. This mode allows user defined setups to facilitate a wide variety of mixing requirements.
- Stand Alone Stored Settings: all acoustic parameters made in GLM™ can be safely stored to all loudspeakers and the network can then be removed, providing users with the confidence of secure and consistent performance when a computer with GLM™ software is not used.

SE™ DSP Monitoring System

The Genelec SE™ (Small Environment) DSP System brings a new approach to solving acoustic issues with small recording and mixing environments. Smaller production rooms beg for sensible solutions in monitoring. The SE™ DSP System brings easy to use and affordable Genelec quality to this wide range of customers. The system utilizes the new 10" SE7261A DSP subwoofer in combination with the 8130A digital input active monitors. The SE™ System easily configures into all popular audio configurations from subwoofer-assisted stereo to multi-channel reference systems. GLM.SE™ software control of the SE7261A DSP subwoofer provides all necessary network connections to the host computer and supplies extensive DSP resources for the 8130A digital input loudspeakers through its AES/EBU digital high-pass outputs.

8130A

SE7261A

SE7261A connector panel

GLM.SE™ — Genelec Loudspeaker Manager™ for Small Environments

GLM.SE™ software brings the entire DSP system together under computer network control

- GLM.SE™ provides connectivity for one SE7261A DSP subwoofer combined with up to eight 8130A digital input loudspeakers
- Enables multiple custom User Setups with all settings and functions able to be stored in GLM.SE™ setup or directly to the SE7261A subwoofer
- Step-by-step Wizard guides user through complete cabling connections and loudspeaker labeling
- Rapid Cabling setups for most common system configurations
- Manual Cabling setups for customized system configurations
- Groups for both Channels and Loudspeakers may be customized by User
- Solo/Mute function for all Loudspeakers and Groups
- Volume controlled via computer, 3rd party USB device or customer console
- Video Display Compensation for inherent video delays in digital video devices
- GLM.SE™ provides interface to AutoCal™ automated acoustic self-calibration algorithm
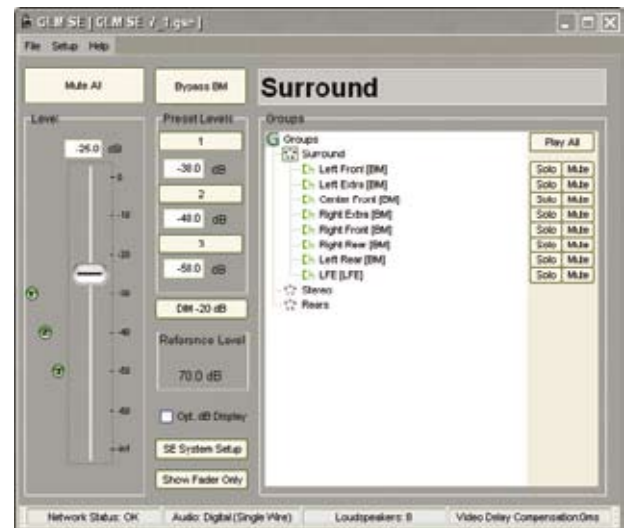
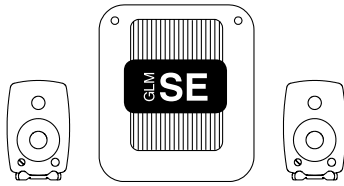
Genelec GLM.SE systems support three modes of operation:

- Stand Alone: This mode models Genelec 8000/7000 products with standard set of room response controls and sensitivity adjustments found on the connector panel DIP switches.
- GLM.SE™ Computer Assisted: Once the loudspeaker control network is connected and running, all DIP switches on the SE7261A connector panel are ignored. All acoustic parameters of the loudspeakers set through AutoCal™ or User Adjustment are controlled by GLM.SE™. This mode allows very flexible user defined setups to facilitate a wide variety of mixing requirements.
- Stand Alone Stored Settings: All acoustic parameters defined in GLM.SE™ software can be permanently stored in the SE7261A and the network then removed, providing users with the confidence of secure and consistent performance when a computer with GLM.SE software is not used.
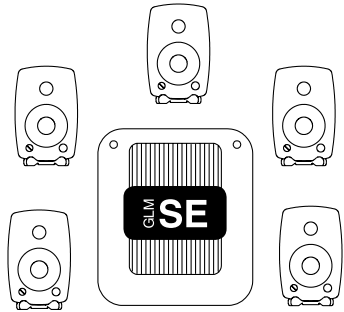
Stereo and Surround Sound Environments
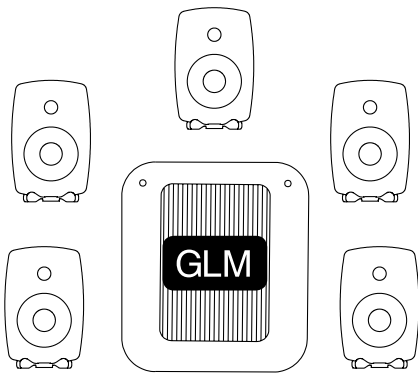
Creating a balanced surround sound monitoring environment calls for matched loudspeakers and subwoofers. The Genelec DSP Systems offer several different alternatives to suit your space and SPL requirements. Here are some examples of balanced loudspeaker/subwoofer combinations for small and medium mixing environments. Please visit our website www.genelec.com* for recommended system setups for different room sizes.

*www.genelec.com/learning-center/suggested-system-setups

2 x 8130A + SE7261 + GLM.SE™ = **Digital TriplePlay™**

5 x 8130A + SE7261 + GLM.SE™ = **Digital PowerPak™**

2 x 8250A + 7270 + GLM™ = **8250 DSP StereoPak**

5 x 8240A + 7270A = **8240A DSP Surround Set**
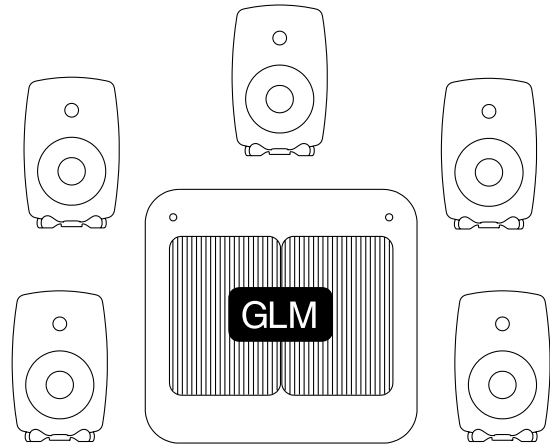
5 x 8250A + 7271A + GLM™ = **8250A DSP Surround Set**

AD9200A Analog to Digital Converter

Contemporary audio production facilities are in transition from analog to digital with Genelec DSP monitoring systems on the forefront. While console technology advances, monitor paths have remained largely analog, with only a few manufacturers offering digital audio monitoring output. Environments with such digital capabilities integrate seamlessly with our DSP Systems.

In response to those customers who wish to interface conventional analog monitoring sections to Genelec DSP and SE™ DSP systems, Genelec proudly announces the AD9200A eight-channel analog to digital converter.

Eight-channel balanced analog input is delivered via a 25-pin DB25 connector wired to the Tascam/ProTools industry standard pinout. Digital output consists of four XLR connections, each carrying two channels of AES/EBU audio. The AD9200A converter outputs AES3 format with 24 bit word length and 192 kHz sample rate, providing the same consistent high quality found on our 8200 DSP products.

8200 and 7200 Series DSP Monitoring Systems

Specifications in brief	8240A	8250A	7260A	7270A	7271A

Drivers
  Bass
  Treble
All drivers are magnetically shielded
	165 mm (6.5")
	19 mm (3/4") metal dome
		205 mm (8")
		25 mm (1") metal dome
			254 mm (10")
			n/a
				305 mm (12")
				n/a
					2 x 305 mm (12")
					n/a

Free field frequency response of system	48 Hz - 20 kHz (± 1 dB)	38 Hz - 20 kHz (± 1 dB)	19 Hz - 100 Hz (± 3 dB)	19 Hz - 100 Hz (± 3 dB)	19 Hz - 100 Hz (± 3 dB)
Maximum peak SPL output per pair on top of console @ 1 m with music material	≥ 115 dB SPL	≥ 120 dB SPL	n/a	n/a	n/a
Maximum short term sine wave SPL output @ 1 m on axis in half space, averaged as specified	(from 100 Hz to 3 kHz) ≥ 105 dB SPL	(from 100 Hz to 3 kHz) ≥ 110 dB SPL	(from 30 Hz to 85 Hz) ≥ 108 dB SPL	(from 30 Hz to 85 Hz) ≥ 112 dB SPL	(from 30 Hz to 85 Hz) ≥ 118 dB SPL
Crossover frequency	3 kHz	1.8 kHz	n/a	n/a	n/a
Self generated noise level in free field @ 1 m on axis (A-weighted)	≤ 10 dB	≤ 10 dB	≤ 15 dB	≤ 15 dB	≤ 15 dB

Harmonic distortion at 90 dB SPL @ 1 m on axis
  Freq: 50…100 Hz
  > 100 Hz
	< 2 %
	< 0.5 %
		< 2 %
		< 0.5 %
			n/a
			n/a
				n/a
				n/a
					n/a
					n/a

Harmonic distortion at given dB SPL @ 1 m in half space
  2nd
  3rd
	
	n/a
	n/a
		
		n/a
		n/a
			@ 90 dB SPL
			from 30 to 85 Hz
			≤ 3 %
			≤ 3 %
				@ 95 dB SPL
				from 30 to 85 Hz
				≤ 3 %
				≤ 3 %
					@ 100 dB SPL
					from 30 to 85 Hz
					≤ 3 %
					≤ 3 %

Input signal connectors
  Analog
  AES/EBU (single wire and dual wire)
	1 XLR female
	1 XLR female
		1 XLR female
		1 XLR female
			n/a
			4 XLR female
				n/a
				4 XLR female
					n/a
					4 XLR female

Output / Thru signal connectors AES/EBU (single wire and dual wire)	1 XLR male	1 XLR male	4 XLR male	4 XLR male	4 XLR male

Digital audio
  Word length
  Sample rate
	16 - 24 bits
	32 - 192 kHz
		16 - 24 bits
		32 - 192 kHz
			16 - 24 bits
			32 - 192 kHz
				16 - 24 bits
				32 - 192 kHz
					16 - 24 bits
					32 - 192 kHz

Control network
  Type
  Connection
	proprietary GLM™ network
	2 RJ45, CAT5 cables
		proprietary GLM™ network
		2 RJ45, CAT5 cables
			proprietary GLM™ network
			2 RJ45, CAT5 cables
				proprietary GLM™ network
				2 RJ45, CAT5 cables
					proprietary GLM™ network
					2 RJ45, CAT5 cables

GLM™ / GLM.SE™ software frequency response adjustment *
  Notch filters
  Shelving filters
	
	2 LF and 2 HF
	2 LF and 2 HF
		
		2 LF and 2 HF
		2 LF and 2 HF
			
			4 LF
			n/a
				
				4 LF
				n/a
					
					4 LF
					n/a

System calibration *	AutoCal™, Stand-alone	AutoCal™, Stand-alone	AutoCal™, Stand-alone	AutoCal™, Stand-alone	AutoCal™, Stand-alone
Bass amplifier output power Treble amplifier output power (Long term output power is limited by driver protection circuitry)	90 W 90 W	150 W 120 W	120 W n/a	250 W n/a	500 W n/a

Power consumption
  Idle
  Full output
	14 VA
	110 VA
		17 VA
		170 VA
			15 VA
			150 VA
				21 VA
				250 VA
					36 VA
					500 VA

Dimensions
  Height
  Width
  Depth
  Height with Iso-Pod™
	350 mm (13 13/16")
	237 mm (9 3/8")
	223 mm (8 13/16")
	365 mm (14 3/8")
		433 mm (17 1/16")
		286 mm (11 1/4")
		278 mm (10 15/16")
		452 mm (17 13/16")
			527 mm (20 3/4")
			462 mm (18 3/16")
			363 mm (14 5/16")
				625 mm (24 5/8")
				555 mm (21 7/8")
				490 mm (19 5/16")
					755 mm (29 3/4")
					803 mm (31 5/8")
					490 mm (19 5/16")

Weight	9.4 kg (20.8 lb)	14.6 kg (32 lb)	27 kg (59 lb)	51 kg (112 lb)	82 kg (180 lb)

* The notch and shelving filter adjustments and AutoCal™ system calibration features are part of the Genelec Loudspeaker Manager (GLM™) and Genelec Loudspeaker Manager Small Environment (GLM.SE™) softwares.

AD9200A Analog to Digital Converter

Number of channels	8
Analog input type	Balanced DB25 Tascam pin order
Digital audio format	AES/EBU (AES3)
Word length	24 bits
Sample rate	192 kHz
Dimensions	H x W x D 43 x 483 x 105 mm
	$(1^{11}/_{16}$ x 19 x $4^{1}/_{8}$")
Weight	2 kg (4.4 lb)
Order code	AD9200A

SE™ DSP Monitoring System

	8130A	SE7261A
	130 mm (5") 19 mm (3/4") metal dome	254 mm (10") n/a
	58 Hz - 20 kHz (± 2 dB)	19 Hz - 100 Hz (± 3 dB)
	≥ 108 dB SPL	n/a
	(from 100 Hz to 3 kHz) ≥ 100 dB SPL	(from 30 Hz to 85 Hz) ≥ 108 dB SPL
	3 kHz	n/a
	≤ 10 dB	≤ 15 dB
	< 2 % < 0.5 %	n/a n/a
	n/a n/a	@ 90 dB SPL from 30 to 85 Hz ≤ 3 % ≤ 3 %
	1 XLR female (same connector accepts also single wire AES/EBU signal)	n/a 4 XLR female (single wire only)
	1 XLR male (single wire only)	4 XLR male (single wire only)
	16 - 24 bits 32 - 192 kHz	16 - 24 bits 32 - 192 kHz
	n/a	proprietary GLM™ network RJ45, CAT5 cables
	2 (at the high pass outpts in the SE 7261A)	4 LF n/a
	AutoCal™, DIP switches	AutoCal™, Stand-alone
	40 W 40 W	120 W n/a
	15 VA 80 VA	15 VA 150 VA
	285 mm (11 1/4") 189 mm (7 7/16") 178 mm (7") 299 mm (11 13/16")	527 mm (20 3/4") 462 mm (18 3/16") 363 mm (14 5/16") n/a
	5.6 kg (12.3 lb)	27 kg (59 lb)

GLM™ Genelec Loudspeaker Manager Software

Genelec Loudspeaker Manager™ software manages connectivity to all loudspeakers on the network – up to 30 – from cabling and labeling to complete loudspeaker definitions. Standard system configurations are provided as well as provision for customized User Setups. All functions and settings are stored in these Setups or you can store this data in each loudspeaker should you wish to disconnect the network and operate without GLM™ to ensure security of your monitoring system.

GLM

Operating system supported	Windows XP, Mac OS X
Number of loudspeakers supported	30
Number of audio channels supported	24 (AES/EBU single-wire),
	12 (analog, AES/EBU dual-wire)
System calibration	AutoCal™
Major components included	GLM™ Network interface device
	8200A Calibration microphone and holder
	USB cable
	Measurement signal cable
	Software CD
	System Operating Manual
Order code	8200-401

GLM™ Multiroom Expansion Kit

Major components included	GLM™ Network interface device
	GLM™ Control Network cable
	USB cable
Order code	8200-402

GLM.SE™ Small Environment DSP System Software

GLM.SE™ software provides versatile configuration, control and alignment functions for the Genelec SE™ DSP System. Settings can be tailored to changing needs and stored as Setup files in the computer or in the memory of the SE7261A subwoofer. GLM.SE™ software supports all the main functions of the standard GLM™, including the AutoCal™ algorithm.

GLM SE

Operating system supported	Windows XP, Mac OS X
Number of loudspeakers supported	8
Number of audio channels supported	8 (AES/EBU single-wire)
System calibration	AutoCal™
Major components included	GLM™ Network interface device
	8200A Calibration microphone and holder
	USB cable
	Measurement signal cable
	Software CD
	System Operating Manual
Order code	8200-501

Accessories

This page shows some samples of the wide Genelec Accessories range. Versatile mounting options and carrying bags for the 8200 Series are comprehensively listed on the web pages of the corresponding products and the Accessories Catalogue for Two-Way Monitors, which can be downloaded at www.genelec.com

Flush mount kits for 8240A and 8250A
8040-450B and 8050-450B

Stand plate for Iso-Pod
8030-408, 8040-408 and 8050-408

Wall bracket - black and white
8000-402-B and 8000-402-W
For all 8000 series models.

Ceiling mount
8000-415B
For all 8000 series models.
Length 905-1505 mm.

Floor stand
8000-409B
Floor stand for all 8000 Series models.
H 895-1370mm. Corresponding 80X0-408 required.

Adjustable height table stand
8000-425B
Fixed table stand for 8130A.

Soft carrying bag
8030-421, 8040-420, 8050-420
8250A bag for a single loudspeaker, all others for a pair.

Detailed Datasheets of all Genelec models, Quick Setup
Guides and other useful information can be downloaded at

www.genelec.com