

Installation Manual for Experience Line

EL-C260A

2-Way Component System

160 Watts

Part Nr. 280112

**Please read installation manual carefully before beginning
installation!**



rainbow

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Dear Music Lover,

We congratulate you on your purchase of our superior product and thank you for placing your trust in rainbow. With over 30 years of engineering expertise in car audio speakers and belief in Golden Spiral for product design, rainbow has created a wide range of products that reproduce life-like sound with all the details and emotions you can hope for. Rainbow guarantees outstanding quality and we wish you many pleasant hours enjoying your favorite music with our high-performance products. We have put together this installation manual with great consideration of different mechanical and acoustical features to help you better understand and operate rainbow products. And we'd love to hear your questions, feedback and improvement suggestions via email info@rainbow-audio.de.

Best wishes,
Your Rainbow Team

Safety Instruction

Attention

Please read all warnings found in this manual. This information is included and highlighted to inform you of the potential risks of personal injury or damage to property.

Our products are intended for those who want to upgrade their car audio systems and enjoy unbeatable sound performance in cars. The relevant safety regulations regarding related auto parts, the regulations of internal vehicle safety, as well as the regulations of the authorized vehicle manufacturers should be followed diligently.

Hearing Damage

Continuous exposure to sound pressure levels over 85 dB may cause permanent hearing loss. High-powered auto sound system could produce sound pressure levels over 130 dB, which may cause damage to hearing. Use common sense and avoid such risks.

Volume and Driver Awareness

Use of audio components can impair your ability to hear necessary traffic sounds and may constitute a safety hazard while driving your automobile.

Rainbow accepts no liability for hearing loss, bodily injury or property damage as a result of use or misuse of this product.

Installation Notice

Do not use your automobile until the subwoofer has been secured to the interior framework. Failure to do so may turn a component into a dangerous, flying projectile during a sudden stop or accident.

Do not drill or drive screw through any vehicle interior or carpeted floor before inspecting the underside for potential punctures to control lines or cables. Be sure to avoid all fuel lines, brake lines, electrical cables or oil lines when planning the installation.

We recommend disconnecting the battery before beginning installation of the loudspeaker system. Please ask your car dealer if disconnecting the battery is feasible without any problems.

Always be meticulous when removing interior trim panels. Car manufacturers use a variety of fastening devices that can be damaged in the disassembly process.

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If sheet metal must be cut or removed, contact your authorized car dealer for professional advice. By damage to supporting body structures the safety certificate may be withdrawn.

Shock Hazard!

Do not touch the connectors while the system is running.

Mechanical Installation

Choosing a location

The first step of a favorable installation is to select the best mounting locations for the component system. Under most circumstances, component speakers are mounted in front doors. For easy and quick installation, use the original factory speaker locations since these positions will save plenty of installation time and provide the best optical integration.

Tweeter Mounting

The tweeter positioning indeed has a direct and noticeable impact on the front staging of your component system. Loudness levels in the high frequency will vary because of different locations where the tweeters are installed. Installation extremely close to reflecting surfaces can have adverse effects on stereo imaging. Due to the different distances of the sound, there can be differences in the sum of the individual sound components of the tweeter and mid woofer around the crossover frequency. The distance between each mid woofer and tweeter pair should not exceed 60cm.

Instances of different tweeter installation locations and the corresponding results generally produced are explained as follows:

1. A-pillar

Optimum option regarding the depth of imaging and overall sound balance of the component system. It's not that easy to get it done, namely, excessive mounting effort.

2. Dashboard

Sometimes aggressive and overly bright treble playback caused by the horn loading effects of the front window. Setting tweeter as -3dB may benefit.

3. Window triangles

Bright sound combined with a high sound stage, sometimes sound a bit "tense" with side biasing.

4. On the upper end of the door panel

Balanced sound with good staging qualities, reduced imaging and focus with side biasing.

5. Right on top of the mid woofer

Muffled or dull sound, particularly with a person sitting in the passenger's seat.

Attention: The major radiation axis of both tweeters are supposed to cross at a virtual point approximately in the center between the front passenger and the driver's seat. A direct "on-axis" installation

of the tweeters, where they direct or point at the listener is not recommended. The phenomenon of tweeters aiming too much at the listener is called “side-biasing”. The sound appears to originate from the side door instead of playing in the center of the dashboard.

Crossover Mounting and Connection

Find an appropriate mounting location for the crossovers. For instance, the crossovers can be installed in an existing cavity behind the door panel or below the dashboard. It is to the benefit of adjustment work if the crossovers remain easily accessible. Connect the cables from the tweeters, the mid woofers and the amplifier to the respective crossovers.

Observe the polarities indicated and ensure that everything has been connected correctly. All speaker cables must be connected to the crossover with the right polarity. The correct polarity of the speakers is a critical factor for the sound performance of the entire audio system. An incorrect polarity could “destroy” the sound of the best loudspeaker system. Unintentional polarity reversal of the cables could give rise to missing bass, squawky midrange or extremely diffuse sound.

Pro Advice: Under some circumstances, reversing the polarity (positive pole reversed with negative pole) of the two tweeters to the mid woofers can provide a greater sound experience. This may be attributed to the mounting position or the distance between the speakers and the listener, or as a result of reflections in the vehicle. As taste is very individual, the decision can only be made after the loudspeakers have been installed in the vehicle.

Cable Cross Section

If longer distance from the amplifier to the crossover has to be overcome, use high quality speaker cables with a minimum cross section of 2.5 mm². Failure to do so will do harm to sound quality.

System Testing

Slowly turn up the volume of your head unit and listen for distortion. If everything appears to be good and it just sounds right, check the speaker balance of both the left and the right side by adjusting the balance control of your head unit. Shifting the balance to the left channel would make sounds coming solely from the left speaker system, while shifting the balance to the right should do the same for the right speakers. If anything appears to be abnormal, you must recheck the wiring of the crossover, the amplifier or the speaker.

Warranty

All rainbow products come with a year's warranty on all parts, starting from the date of purchase from the authorized retailer. Only the first buyer is entitled to this warranty policy, which would be invalid in case of products being transferred.

The warranty covers all material and manufacturing defects, however it does not cover mechanical defects, defects caused by electrical overload and foreign interference by unauthorized people.

Mechanical Defects

Defects resulting from damage to components during installation, dirt or metal shavings in the open magnetic system, and inappropriate installation by using devices not conforming to the intended range of application.

Electrical Defects

Damage resulting from electrical and thermal overload and/or inadmissibly high power supply, and clipping distortion.

Electromechanical Defects

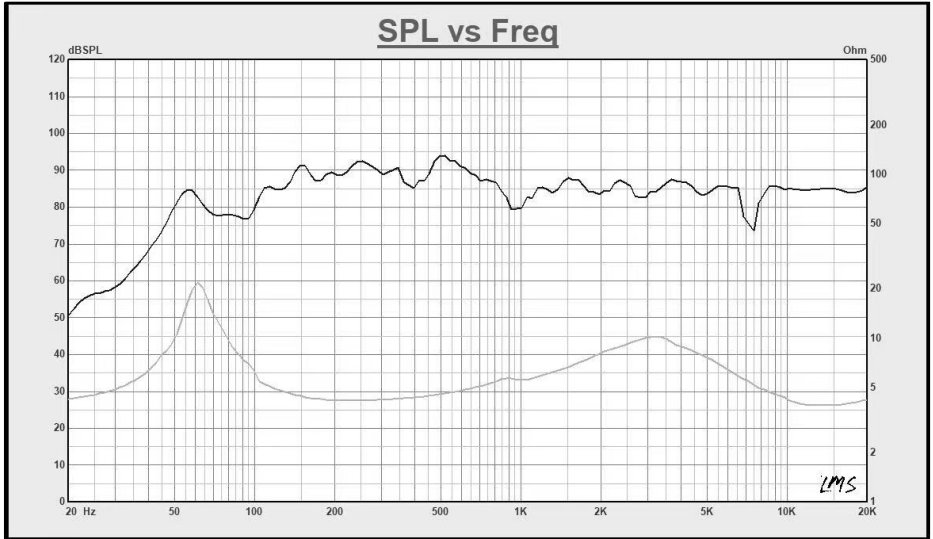
Damage resulting from running the loudspeaker system at an excessively high volume or in an improper enclosure like trunk and the results caused thereof, such as burned voice coils, broken lead wires and accidents, acts of God or other situations for which rainbow can not be held accountable. In particular, normal wear and tear is not covered by warranty.

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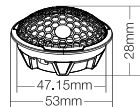
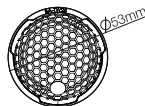
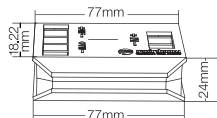
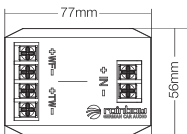
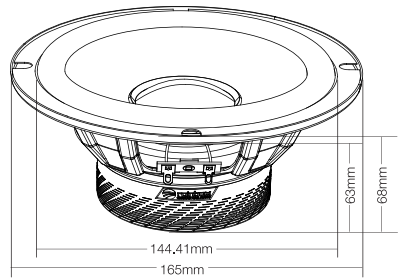
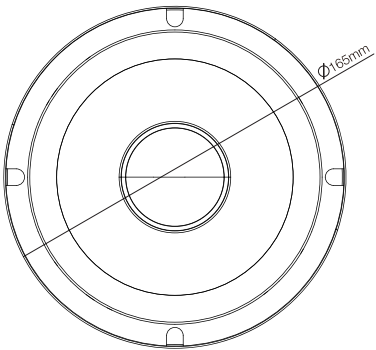
TECHNICAL DATA

EL-C260A

SPL vs Frequency Response



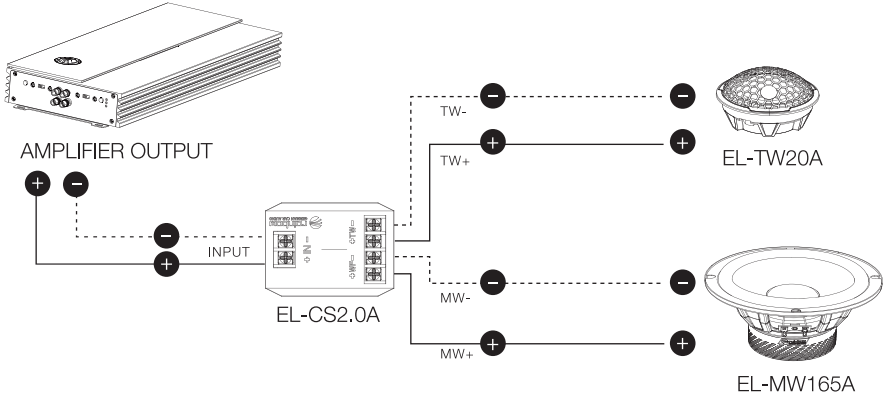
Dimension Illustration



T/S parameters		
Component	Tweeter	Mid woofer
Cone	Silk	PP
Sensitivity	87 dB/W/m	88 dB/W/m
Nominal power	10 W	80 W
Peak power	20 W	160 W
Nominal impedance	4 Ohm	4 Ohm
Re	3.4 Ohm	3.4 Ohm
Fs	1200 Hz	55 Hz
Qms	N/A	4.05
Qes	N/A	0.89
Qts	N/A	0.73
Mms	N/A	10.7
Cms	N/A	603 μ M/N
Sd	N/A	13.27 cm ²
Vas	N/A	15 L
BL	N/A	4.0 Tm
Magnet dimension	24.5*3.5mm	85*40*15mm
Voice coil diameter	25.5mm	25.5mm
Voice coil height	1.6mm	9mm

TECHNICAL DATA

EL-C260A WIRING DIAGRAM



亲爱的音乐爱好者：

祝贺您购买了我们的优质产品，感谢您对彩虹的信任。彩虹拥有超过30年的汽车音响产品开发技术和生产经验，并遵循拥有两千多年历史的黄金分割率，制造出富有音乐感、声音自然动听的音响器材。彩虹汽车音响音质卓越，性能优良，让您尽情享受音乐之美。我们结合了不同的机械和汽车声学特点编写了这本安装手册，帮助您更好地了解和使用彩虹产品。如您有任何疑问、反馈和改善建议，请发邮件至info@rainbow-audio.de，我们将不胜感激。

最美好的祝愿

彩虹团队

安全指南

注意

请仔细阅读用户手册中的警示，我们在此注明并强调这些信息是为提醒您免受潜在的人身伤害或设备损坏。

如您想要升级汽车音响系统、乐享旅程，彩虹产品一定是您的不二之选。汽车零部件相关安全守则，车内安全守则和授权汽车生产商相关守则都须严格遵守。

听力损害

长时间聆听高于85分贝音量的声音可能会造成永久性听觉损失。而大功率音响系统产生的声音高于130分贝，可能会损伤听力。请合理调节系统音量及聆听时间，避免以上风险。

音量和安全驾驶

驾驶时，使用音响系统可能会让你听不清周围的交通声，进而引发交通事故。彩虹对因产品使用不当引起的听力损伤、身体伤害或产品性能损坏概不负责。

安装须知

扬声器系统的全部元件未在车内固定好之前，不要驾驶汽车。否则，在急刹车或汽车事故时，扬声器元件可能成为危险的抛射物。

在车内或者铺有地毯的底板上钻孔、打钉之前一定要检查底部，以免损坏控制线。布置安装时，确保一定要避开刹车线、电线、油管。

建议在开始安装扬声器系统之前取下汽车蓄电池。请咨询您的汽车经销商这样操作是否可行，不会引发任何问题。

拆卸内饰板时须格外小心。汽车生产商使用的多种紧固装置都可能在拆卸过程中被损坏。

如需切割或拆卸金属板，请联系授权汽车经销商，获取专业建议。支撑结构损坏，可能会导致安全证书被撤回。

触电危险！

音响系统运行时，不要触摸接线端口。

机械安装

选择安装位置

成功安装的第一步要为套装喇叭选择一个最佳安装位置，一般情况下套装都会安装在前门。为安装便捷，可使用原厂喇叭位安装，这样不仅可以节省大量安装时间，还能保留原车的完整性。

高音安装

高音喇叭的安装位置对音响系统的声场有极大的影响。高音喇叭安装位置的变化会导致高频部分声音响度的变化。若安装位置过于接近于反射面，对声音结像有不利影响。由于高音的安装位置不同，高音和中低音的分频点斜率耦合不同。高音喇叭和中低音喇叭之间的距离不应超过60厘米。

高音喇叭安装在不同的位置，声音效果也不同，具体如下：

1. A柱

就音响系统的声场深度和整体平衡性而言，A柱是最佳安装位置。在A柱上将高音喇叭装好并不容易，安装时须格外注意。

2. 仪表台

挡风玻璃的号角效应会使高音喇叭的声音变得压迫、刺耳和尖锐。将高音衰减设置成-3dB可能会改善这种情况。

3. 车窗三角区

声音明亮、声场较高，但是由于侧边偏置，声音有时候听起来有点紧绷。

4. 门板上方

声音均衡，但是由于侧边偏置，导致声场定位较差。

5. 中低音正上方

声音模糊、沉闷，有人坐在乘客座位时，声音表现尤为不佳。

注意：两个高音喇叭的声波传输都应穿过驾驶座和副驾驶座之间的虚拟点。不推荐“正对着听众”安装高音喇叭，让喇叭的声波直指听众。高音喇叭过于正对着听众的现象叫做“侧边偏置”。这种情况下，声音听起来像是从旁侧门的位置发出而不是从仪表台中间的位置发出。

分频器安装与连接

为分频器寻找一个合适的安装位置。例如，可以将分频器安装在门板后面原有的安装位上或安装在仪表台下面。将分频器安装在容易接触到的位置，便于后期调节。将高音喇叭、中低音喇叭和功率放大器分别连接到分频器上。

连接时注意正负极，确保连接正确。所有喇叭线都要依照正负极标识，正确地连接到分频器上。极性连接正确是确保音响系统音质的关键。如果极性连接错误，即使是最好的音响系统，也可能会出现音质表现不佳。粗心接错了喇叭线的正负极会造成低音缺失、中音尖锐刺耳或整体声音听起来浑浊松散。

专业意见：在某些情况下，调换高音喇叭连接线的极性（正负极互调），再连接中低音喇叭，可能会带来更好的聆听体验。这可能是由喇叭安装位置引起的，或是与喇叭与听众之间的距离引起的，也有可能是汽车内部反射的结果。因此，你可以尝试接线时调换两个高音喇叭线的正负极，看看是否能加深声场，带来更和谐的声音表现。喇叭在车内安装好了之后，您可以自己决定是否要尝试这样的操作。

喇叭线横截面

如果功放和分频器距离较远，一定要使用优质喇叭线连接，线材横截面不小于 2.5 mm^2 ，否则会对音质产生不良影响。

系统安装测试

逐步调高主机音量，寻找声音失真点。如果听起来无失真现象，再调节主机左右声道均衡来测试左右两侧喇叭的声音均衡。将均衡调至左声道，声音会完全从左侧的喇叭传出，将均衡调至右声道，声音会完全从右侧的喇叭传出。如果出现了什么问题，请再次检查分频器、功率放大器或喇叭的接线。

质保

彩虹承诺为所有产品提供1年的法定质保期，确保所有部件在保修期内良好运行。保修期从授权经销商处购买产品之日开始计算。只有一手客户享受质保政策，保修权不可转让。

保修对象涵盖材料及生产缺陷。而机械损坏、电压过载引起的损坏、非授权人员对产品维修或拆卸造成的故障损坏皆不属于保修范围。

机械损坏

安装过程中损坏零部件、灰尘或金属碎屑落入开放式磁缝中、以及安装时使用了与产品特性不匹配的设备造成的损坏。

电器损坏

因电压过载、热过载、过大的功率输出和放大器削波失真造成的损坏。

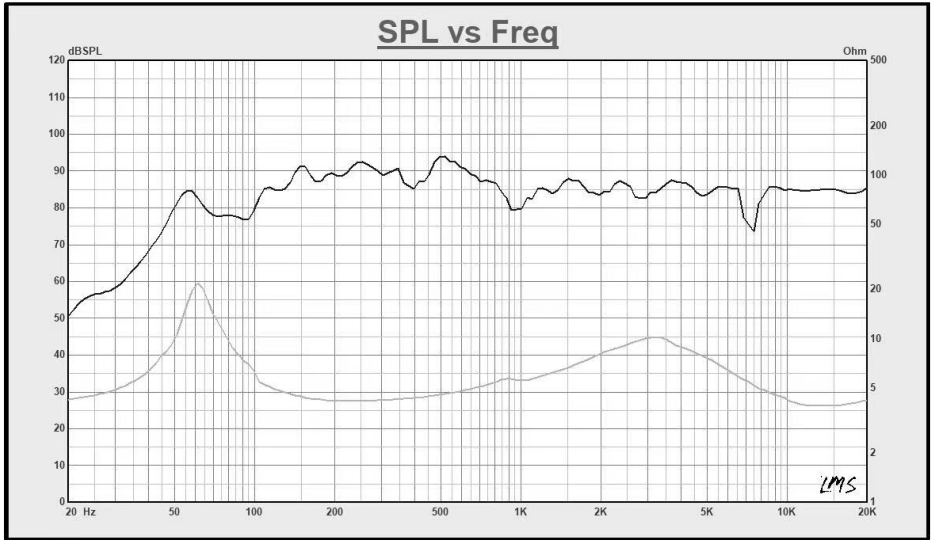
机电损坏

因音响系统音量过大或箱体体积不适宜（如尾箱用作箱体）引起的音圈烧毁、导线断裂，或车祸、不可抗力等事故引起的产品及零部件损坏。尤其注意，正常的磨损不属于保修范围。

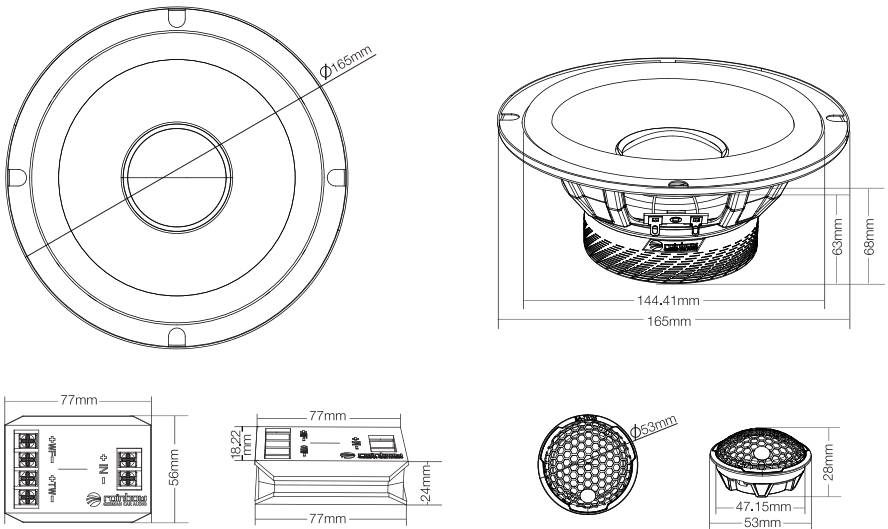
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EL-C260A

声压级 vs 频率响应



尺寸图示



T/S参数		
喇叭	高音	中低音
振膜	丝膜	聚丙烯
灵敏度	87 dB/W/m	88 dB/W/m
额定功率	10 W	80 W
峰值功率	20 W	160 W
额定阻抗	4 Ohm	4 Ohm
直流阻抗	3.4 Ohm	3.4 Ohm
谐振频率	1200 Hz	55 Hz
机械品质因数	N/A	4.05
电声品质因数	N/A	0.89
总品质因数	N/A	0.73
振动质量	N/A	10.7
机械顺从度	N/A	603 u M/N
振动面积	N/A	13.27 cm ²
等效容积	N/A	15 L
磁场力	N/A	4.0 Tm
磁铁尺寸	24.5*3.5mm	85*40*15mm
音圈直径	25.5mm	25.5mm
音圈高度	1.6mm	9mm

EL-C260A 连接图示

