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AUDIOTEC FISCHER

AUDIOTEC FISCHER HELIX COMPOSE i3 Speaker Systems



Congratulations!

Dear Customer,

Congratulations on your purchase of this high-quality product.

HELIX COMPOSE highlights best quality, excellent manufacturing and state-of-the-art sound quality.

Thanks to more than 30 years of experience in research and development of audio products HELIX COMPOSE sets new standards in the car audio speaker market. We wish you many hours of enjoyment with your new HELIX COMPOSE components.

Yours

AUDIOTEC FISCHER Team

General instructions

General instructions for installing HELIX loudspeakers

To prevent damage to the speakers and possible inju-ry, read this manual carefully and follow all installation instructions. This product has been checked for proper function prior to shipping and is guaranteed against man-ufacturing defects.

For a proper performance and to ensure full warranty coverage, we strongly recommend to get this product in-stalled by an authorized HELIX dealer.

If you choose to perform your own installation read the following information and precautions carefully.

Failure to follow the stated precautions may result in personal injury and / or damage to the audio system or vehicle.

- 1. Always make sure that the speaker will fit into the intended mounting location and that there is adequate depth for the magnet system.
- 2. Check for adequate space between speaker and window, window crank, power window mechanism, seat, rear deck torsion bars, and other items that may interfere with the speaker's mounting. This is very important if any hole cutting is required. Detailed size information is indicated in the dimen-sion section of this manual. Take care that the mounting surface is flat and free from all obstructions.
- 3. Ensure that the loudspeakers are correctly connected in polarity. Exchanging plus and minus may result in significant loss of sound quality. The positive leads of the

- loudspeakers are marked red.
- 4. Make sure that all speaker wiring is fully protected from cutting or wear at sharp edges, which can lead to short circuits that may damage your head unit, amplifier and / or speaker system.
- 5. Verify that all connection wires are long enough in order to avoid any mechanical stress on the wires or the connectors.
- 6. Make sure that all components are mounted prop-erly.
- 7. Do not mount the components where water may splash on them.
- 8. The quality of the installation has a significant effect on the overall performance of the speaker system. Treat each installation step with a high degree of attention.
- 9. Avoid low frequency cancellation caused by air leak-age between the speaker basket and the mounting surface (e.g. mounted on a bended or uneven surface or mounted in an oversized hole).
- 10. Mounting panel reinforcement may be necessary in some cases in order to ensure a stable, torsion-free and even surface. This can be achieved by mounting the speaker on a metal, plastic or wooden sub-baffle behind the body or door panel. Consult an installa-tion specialist for further advices.
- 11. In most cases you can use the original speaker mounting locations in the doors, A-pillars, body panels or the rear deck. If these are not available you have to prepare your own secure installation place. Due to their structural integrity and accessibility the precut mounting holes should be used whenever possible. Information on a proper mounting can be found in the section "Installation" of this manual.

IMPORTANT: Never cut any metal that is an integral part of an automobile's safety or structural car body.

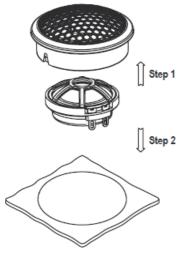
We strongly recommend that you operate the complete audio system at low volume before final installation. So you can check whether each speaker is working before securing the loudspeakers into their mounting locations.

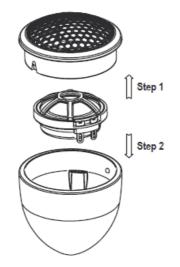
Installation



Option b: Angle mount

Option c: Professional integration with optionally available FlexMount 20 car-specific adaptor*





*Contact your retailer or visit www.audiotec-fischer.com/compose for an up-to-date overview of available FlexMount 20 car-specific adaptors.

Mounting Ci3 M100FM

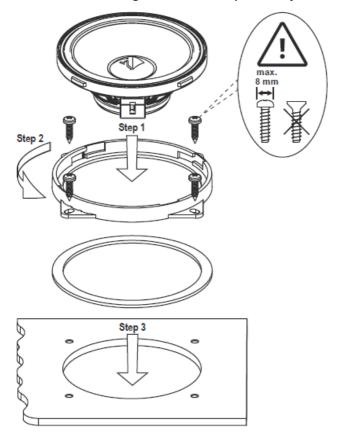
Note: the adaptor rings can be mounted in two directions. Make sure to use the appropriate mounting option for your vehicle.

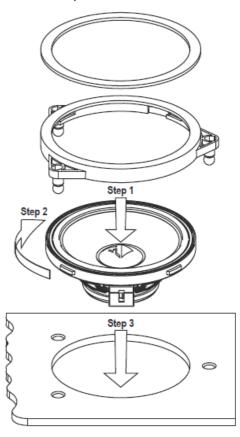
• Option a:

Mounting with the enclosed universal adaptor rings

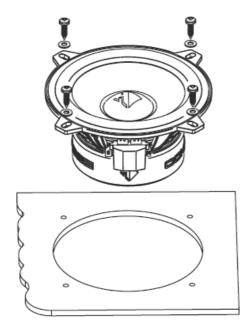
• Option b:

Professional integration with optionally available car-specific adaptor*



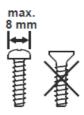


Mounting Ci3 W130



Attention: To avoid damage to the speak-ers, do not use countersunk screws and do not overtighten the screws!





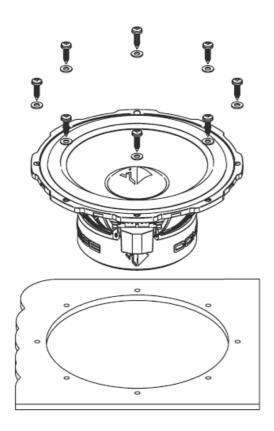
Mounting Ci3 W165FM

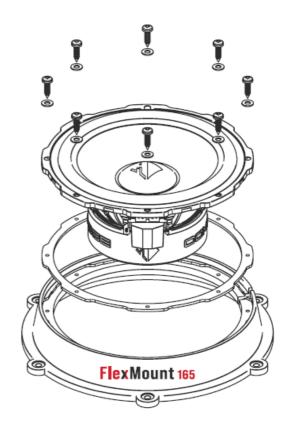
• Option a:

Universal mounting

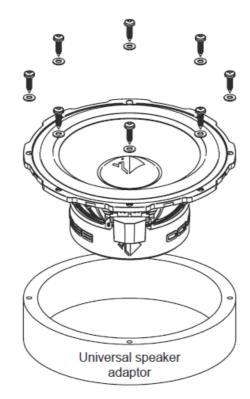
• Option b:

Professional integration with optionally available car-specific adaptor*



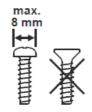


Option c:
 Mounting with universal mounting adaptor



 Attention: To avoid damage to the speak-ers, do not use countersunk screws and do not overtighten the screws!





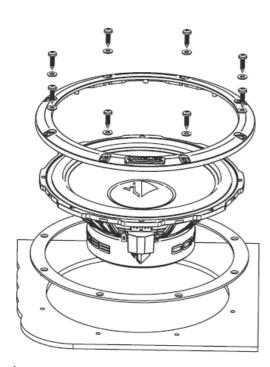
Mounting Ci3 W200FM

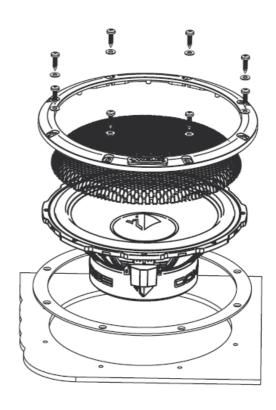
• Option a:

Universal mounting without grille

• Option b:

Universal mounting with grille



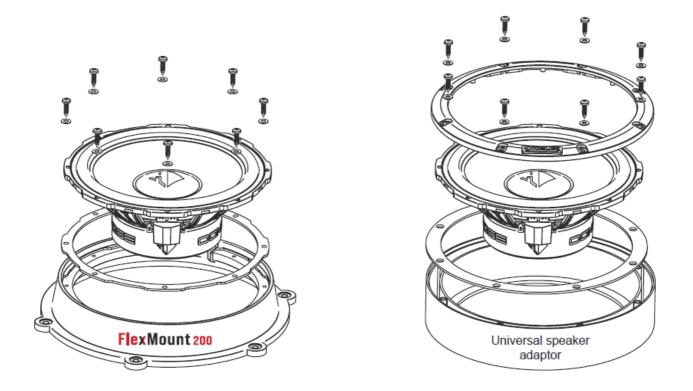


• Option c:

Professional integration with optionally available car-specific adaptor*

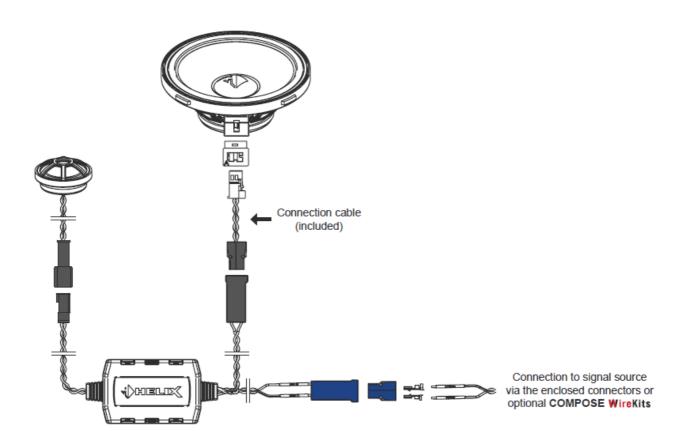
• Option d:

Mounting with universal mounting adaptor

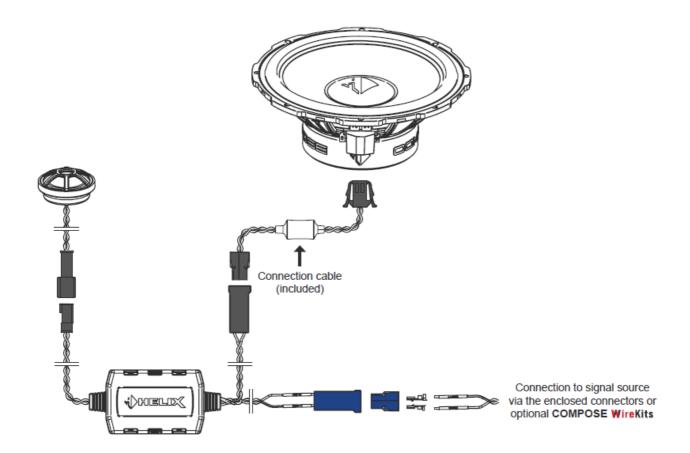


^{*}Contact your retailer or visit <u>www.audiotec-fischer.com/compose</u> for an up-to-date overview of available adaptors.

Wiring 2-way component system Ci3 K100.2FM

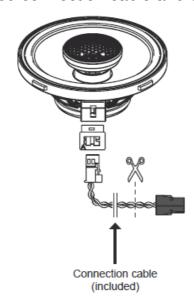


Wiring 2-way component system Ci3 K130.2 / Ci3 K165.2FM / Ci3 K200.2FM

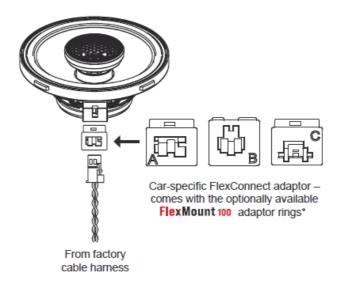


Wiring 2-way coaxial system Ci3 C100.2FM

Option a: Universal connection
 Cut off the plug of the enclosed connection cable and connect it to the signal source



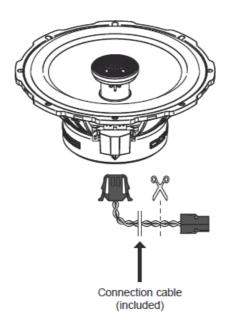
• Option b: Direct connection to OEM connector with optionally available car-specific adaptor



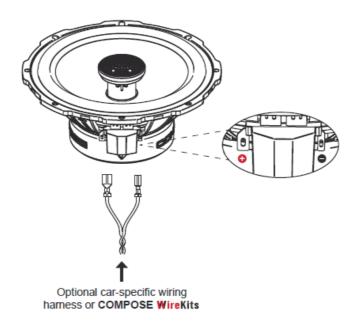
Contact your retailer or visit <u>www.audiotec-fischer.com/compose</u> for an up-to-date overview of available car-specific adaptors.

Wiring 2-way coaxial system Ci3 C130.2 / Ci3 C165.2FM

- Option a: Universal connection with enclosed connection cable
- Option b: Universal connection to the blade terminals via optional car-specific harness or COMPOSE



Cut off the plug of the enclosed connection cable and connect it to the signal source.



Tweeter level adjustment



The crossover allows to optimize the level of the connected tweeter internally by repositioning the tweeter level jumper. Therefore open the crossover housing, pull the jumper straight upwards and reinsert it to the desired position.

The correct tweeter level setting strongly depends on the location of the speakers. Then confirm the level by listening to the speakers and modify the jumper setting if needed.



+2 dB: The level of the tweeter is increased by 2 dB.



0 dB: The tweeter has the optimum level for most applications.



-2 dB: The level of the tweeter is reduced by 2 dB.



-3 dB: The level of the tweeter is reduced by 3 dB.



-4 dB: The level of the tweeter is reduced by 4 dB.

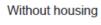


-5 dB: The level of the tweeter is reduced by 5 dB.

We recommend to use the settings in the table below as starting point:

Speaker kit	Level	Jumper position
Ci3 K100.2FM-S3	0 dB	2.40
Ci3 K130.2-S3	-2 dB	
Ci3 K165.2FM-S3	0 dB	**************************************
Ci3 K165.2FM-S2	+2 dB	
Ci3 K200.2FM-S3	0 dB	7 2 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Ci3 K200.2FM-S2	+2 dB	

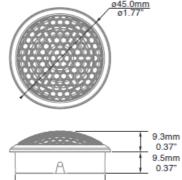
Dimensions

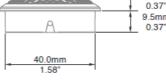


5.6mm 0.22" 9.8mm 0.39"

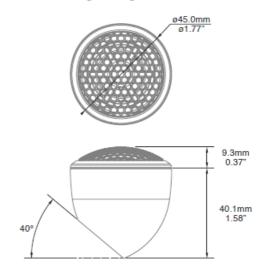
ø32.0mm ø1.26"

With housing for flush mount

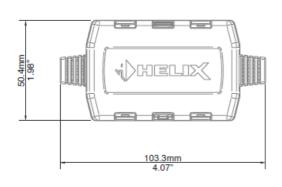


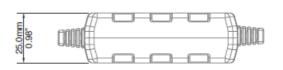


With housing for angle mount



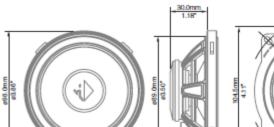
Ci3 FX-UNI.2



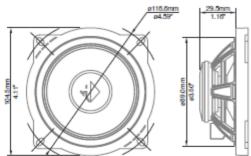


Ci3 M100FM

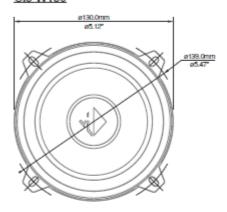
Speaker without FlexMount 100

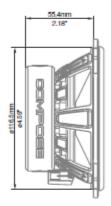


Speaker with assembled universal FlexMount 100

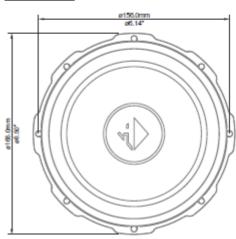


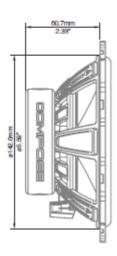
Ci3 W130





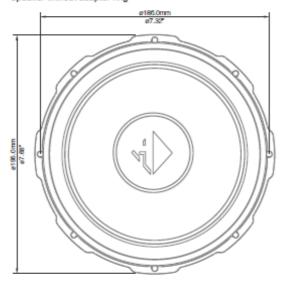
Ci3 W165FM

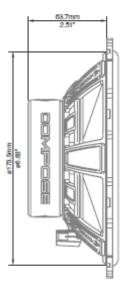




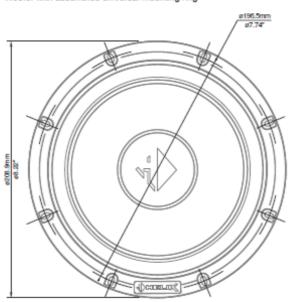
Ci3 W200FM

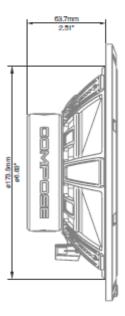
Speaker without adaptor ring





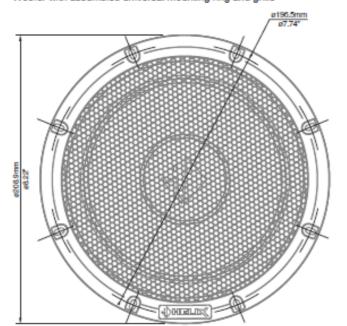
Woofer with assembled universal mounting ring

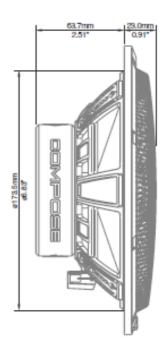




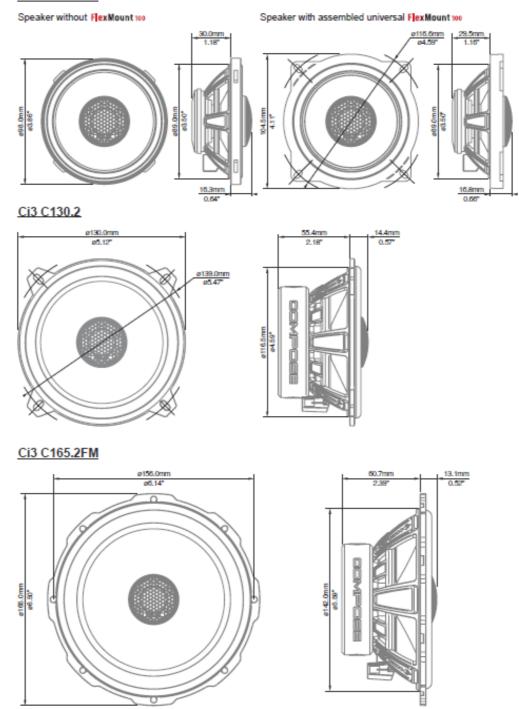
Ci3 W200FM

Woofer with assembled universal mounting ring and grille





Ci3 C100.2FM



Technical data

Speaker kits

Power RMS / Max.	P	80 / 120 Watts	90 / 135 Watts	100 / 150 Watts
Frequency response		120 Hz - 25,000 Hz	80 Hz - 25,000 Hz	60 Hz - 25,000 Hz
Impedance	Z	3 Ω	3Ω	3Ω
Sensitivity	SPL	91 dB @ 2.83V / 1m 87 dB @ 1W / 1m	91 dB @ 2.83V / 1m 87 dB @ 1W / 1m	92 dB @ 2.83V / 1m 88 dB @ 1W / 1m
Outer diameter (more data page 11 et sqq.)	Ø	Tweeter: 32.0 mm / 1.26" Woofer: 98.0 mm / 3.86"	Tweeter: 32.0 mm / 1.26" Woofer: 130.0 mm / 5.12"	Tweeter: 32.0 mm / 1.26" Woofer: 165.0 mm / 6.50"
Installation diameter (more data page 11 et sqq.)	Ø	Tweeter: 32.0 mm / 1.26" Woofer: 89.0 mm / 3.50"	Tweeter: 32.0 mm / 1.26° Woofer: 116.5 mm / 4.59"	Tweeter: 32.0 mm / 1.26" Woofer: 142.0 mm / 5.59"
Installation depth (more data page 11 et sqq.)		Tweeter: 9.8 mm / 0.39" Woofer: 30.0 mm / 1.18"	Tweeter: 9.8 mm / 0.39" Woofer: 55.4 mm / 2.18"	Tweeter: 9.8 mm / 0.39" Woofer: 60.7 mm / 2.39"
Dimensions cross- over		103.3 x 50.4 x 25.0 mm / 4.07 x 1.98 x 0.98"	103.3 x 50.4 x 25.0 mm / 4.07 x 1.98 x 0.98"	103.3 x 50.4 x 25.0 mm / 4.07 x 1.98 x 0.98"
Woofer			,	
Impedance	Z	3Ω	3Ω	3Ω
DC resistance	Re	3.0 Ω	3.1 Ω	3.0 Ω
Resonance frequency	Fs	146 Hz	89 Hz	70 Hz
Mechanical Q factor	Qms	4.49	3.11	4.17
Electrical Q factor	Qes	1.02	0.97	1.05
Total Q factor	Qts	0.83	0.74	0.84
Compliance	Cms	280 µm/N	350 um/N	454 um/N
Equivalent air volume	Vas	1.1 L	4.6 L	11.2 L
Force factor	B*I	3.4 Tm	4.0 Tm	4.0 Tm
Cone area	Sd	53 cm ²	98 cm ²	133 cm ²
Moving mass	Mms	4.3 g	9.1 g	11.3 g
Mechanical resistance	Rms	0.87 kg/s	1.65 kg/s	1.18 kg/s
Voice coil diameter	Ø	25 mm	25 mm	25 mm
Voice coil winding height		4.8 mm	10.5 mm	10.5 mm
Max. linear excursion	Xmax	+/- 2.0 mm	+/- 3.2 mm	+/- 3.2 mm
Tweeter				
Impedance	Z	4 Ω	4 Ω	4Ω
Resonance frequency	Fs	1800 Hz	1800 Hz	1800 Hz
Voice coil diameter	Ø	20 mm	20 mm	20 mm
Features				
Tweeter		Ultra compact, titanium dome, neodymium magnet and FlexMount 20	Ultra compact, titanium dome, neodymium magnet and FlexMount 20	Ultra compact, titanium dome, neodymium magnet and FlexMount 20
Woofer		Paper with Cenosphere coating, FlexConnect terminal, neodymium magnet and FlexMount 100	Paper with Cenosphere coating and ProConnect terminal	Paper with Cenosphere coating, ProConnect terminal and FlexMount 165
Crossover		Tweeter: 12 dB highpass, protection and level adjustment	Tweeter: 12 dB highpass, protection and level adjustment Woofer: 6 dB lowpass	Tweeter: 12 dB highpass, protection and level adjustment Woofer: 6 dB lowpass

Ci3 K100.2FM-S3

Ci3 K130.2-S3

Ci3 K165.2FM-S3

Speaker kits

Speaker kits		Ci3 K165.2FM-S2	Ci3 K200.2FM-S3	Ci3 K200FM.2-S2
Power RMS / Max.	P	100 / 150 Watts	100 / 150 Watts	100 / 150 Watts
Frequency response	-	60 Hz - 25.000 Hz	50 Hz - 25.000 Hz	50 Hz - 25.000 Hz
Impedance	Z	2 Ω	3 Ω	2Ω
Sensitivity	SPL	94 dB @ 2.83V / 1m	94 dB @ 2.83V / 1m	96 dB @ 2.83V / 1m
		88 dB @ 1W / 1m	90 dB @ 1W / 1m	90 dB @ 1W / 1m
Outer diameter (more data page 11 et sqq.)	Ø	Tweeter: 32.0 mm / 1.26" Woofer: 165.0 mm / 6.50"	Tweeter: 32.0 mm / 1.26" Woofer: 195.0 mm / 7.68"	Tweeter: 32.0 mm / 1.26" Woofer: 195.0 mm / 7.68"
Installation diameter (more data page 11 et sqq.)	Ø	Tweeter: 32.0 mm / 1.26" Woofer: 142.0 mm / 5.59"	Tweeter: 32.0 mm / 1.26° Woofer: 173.5 mm / 6.83°	Tweeter: 32.0 mm / 1.26° Woofer: 173.5 mm / 6.83°
Installation depth (more data page 11 et sqq.)		Tweeter: 9.8 mm / 0.39" Woofer: 60.7 mm / 2.39"	Tweeter: 9.8 mm / 0.39" Woofer: 63.7 mm / 2.51"	Tweeter: 9.8 mm / 0.39" Woofer: 63.7 mm / 2.51"
Dimensions cross- over		103.3 x 50.4 x 25.0 mm / 4.07 x 1.98 x 0.98"	103.3 x 50.4 x 25.0 mm / 4.07 x 1.98 x 0.98"	103.3 x 50.4 x 25.0 mm / 4.07 x 1.98 x 0.98"
Woofer				
Impedance	Z	2Ω	3Ω	2Ω
DC resistance	Re	1.8 Ω	3.0 Ω	1.8 Ω
Resonance frequency	Fs	74 Hz	67 Hz	72 Hz
Mechanical Q factor	Qms	3.92	4.25	4.56
Electrical Q factor	Qes	0.92	0.93	1.09
Total Q factor	Qts	0.74	0.76	0.88
Compliance	Cms	370 µm/N	300 µm/N	230 µm/N
Equivalent air volume	Vas	8.8 L	19.0 L	14.5 L
Force factor	B*I	3.4 Tm	5.1 Tm	4.0 Tm
Cone area	Sd	133 cm ²	214 cm ²	214 cm ²
Moving mass	Mms	12.5 g	18.8 g	20.8 g
Mechanical resistance	Rms	1.48 kg/s	1.87 kg/s	2.07 kg/s
Voice coil diameter	Ø	25 mm	25 mm	25 mm
Voice coil winding height		11.3 mm	11.6 mm	11.9 mm
Max. linear excursion	Xmax	+/- 3.7 mm	+/- 3.8 mm	+/- 4.0 mm
Tweeter				
Impedance	Z	4 Ω	4 Ω	4 Ω
Resonance frequency	Fs	1800 Hz	1800 Hz	1800 Hz
Voice coil diameter	Ø	20 mm	20 mm	20 mm
Features				
Tweeter		Ultra compact, titanium dome, neodymium magnet and FlexMount 20	Ultra compact, titanium dome, neodymium magnet and FlexMount 20	Ultra compact, titanium dome, neodymium magnet and FlexMount 20
Woofer		Paper with Cenosphere coating, ProConnect terminal and FlexMount 155	Paper with Cenosphere coating, ProConnect terminal, FlexMount 200 and grille	Paper with Cenosphere coating, ProConnect terminal, FlexMount 200 and grille
Crossover		Tweeter: 12 dB highpass, protection and level adjustment Woofer: 6 dB lowpass	Tweeter: 12 dB highpass, protection and level adjustment	Tweeter: 12 dB highpass, protection and level adjustment

Coaxial systems		Ci3 C100.2FM-S3	Ci3 C130.2-S3	Ci3 C165.2FM-S3
Power RMS / Max.	P	80 / 120 Watts	90 / 135 Watts	100 / 150 Watts
Frequency response		100 Hz - 25,000 Hz	80 Hz - 25,000 Hz	60 Hz - 25,000 Hz
Impedance	Z	3 Ω	3 Ω	3 Ω
Sensitivity	SPL	91 dB @ 2.83V / 1m 87 dB @ 1W / 1m	92 dB @ 2.83V / 1m 88 dB @ 1W / 1m	92 dB @ 2.83V / 1m 88 dB @ 1W / 1m
Outer diameter (more data page 15 et sqq.)	Ø	98.0 mm / 3.86"	130.0 mm / 5.12"	165.0 mm / 6.50°
Installation diameter (more data page 15 et sqq.)	Ø	89.0 mm / 3.50"	116.5 mm / 4.59"	142.0 mm / 5.59"
Installation depth (more data page 15 et sqq.)		30.0 mm / 1.18"	55.4 mm / 2.18"	60.7 mm / 2.39*
Woofer				
Impedance	Z	3Ω	3Ω	3Ω
DC resistance	Re	3.0 Ω	3.0 Ω	3.1 Ω
Resonance frequency	Fs	137 Hz	92 Hz	72 Hz
Mechanical Q factor	Qms	4.37	2.76	4.02
Electrical Q factor	Qes	0.78	0.90	1.04
Total Q factor	Qts	0.66	0.68	0.82
Compliance	Cms	456 µm/N	374 µm/N	466 µm/N
Equivalent air volume	Vas	2.1 L	4.9 L	11.5 L
Force factor	B*I	3.2 Tm	3.8 Tm	3.8 Tm
Cone area	Sd	57 cm ²	97 cm ²	133 cm ²
Moving mass	Mms	3.0 g	7.6 g	10.4 g
Mechanical resistance	Rms	0.58 kg/s	1.60 kg/s	1.17 kg/s
Voice coil diameter	Ø	25 mm	25 mm	25 mm
Voice coil winding height		4.8 mm	10.5 mm	10.5 mm
Max. linear excursion	Xmax	+/- 2.0 mm	+/- 3.2 mm	+/- 3.2 mm
Tweeter				
Voice coil diameter	Ø	20 mm	20 mm	20 mm
Features				
Tweeter		Titanium dome and neodymium magnet	Titanium dome and neodymium magnet	Titanium dome and neodymium magnet
Woofer		Paper with Cenosphere coating, FlexConnect terminal, neodymium magnet and FlexMount 100	Paper with Cenosphere coating and ProConnect terminal	Paper with Cenosphere coating, ProConnect terminal and FlexMount 155
Crossover		Integrated, 6 dB highpass	Integrated, 6 dB highpass	Integrated, 6 dB highpass

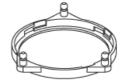
FlexMount car-specific adaptors

The optionally available car-specific adaptor rings allow a tailored and acoustically optimized adaption of the HELIX COMPOSE speakers Ci3 T20FM-TI, Ci3 M100FM, Ci3 W165FM, Ci3 W200FM, Ci3 C100.2FM-S3 and Ci3 C165.2FM-S3 to the vehicles original mounting location. Contact your retailer or visit www.audiotec-fischer.com/compose for an up-to-date overview of available adaptors.

FlexMount 20



FlexMount 100



FlexMount 165
FlexMount 200



Contact your retailer or visit <u>www.audiotec-fischer.com/compose</u> for an up-to-date overview of available car-specific adaptors.



Correct disposal of this product

(Applicable in the European Union and other countries with separate collection systems) If you want to dispose this product, do not mix it with general household waste. There is a separate collection system for used electronic products in accordance with legislation that requires proper treatment, recovery and recycling. Contact your local government office for details in locating a recycle facility close to you. Proper recycling and waste disposal will help conserve resources and prevent detrimental effects on our health and the environment.

Warranty Disclaimer

The warranty service is based on the statutory regulations. Defects and damage caused by overload or improper handling are excluded from the warranty service. Any return can only take place following prior consultation, in the original packaging together with a detailed description of the error and a valid proof of purchase. Technical modifications, misprints and errors excepted! For damages on the vehicle and the device, caused by handling errors of the device, we can't assume liability. All HELIX speakers are tagged

with a certification mark. Thereby these devices are certified for the use in vehicles within the European Community (EC).

Documents / Resources



AUDIOTEC FISCHER HELIX COMPOSE i3 Speaker Systems [pdf] User Guide

CI3C1002FMS3, C122411, HELIX COMPOSE i3 Speaker Systems, HELIX COMPOSE i3, Speaker Systems, Systems, Speaker

References

- User Manual
- AUDIOTEC

FISCHER

◆ AUDIOTEC FISCHER, C122411, Cl3C1002FMS3, HELIX COMPOSE i3, HELIX COMPOSE i3 Speaker Systems, speaker, Speaker Systems

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