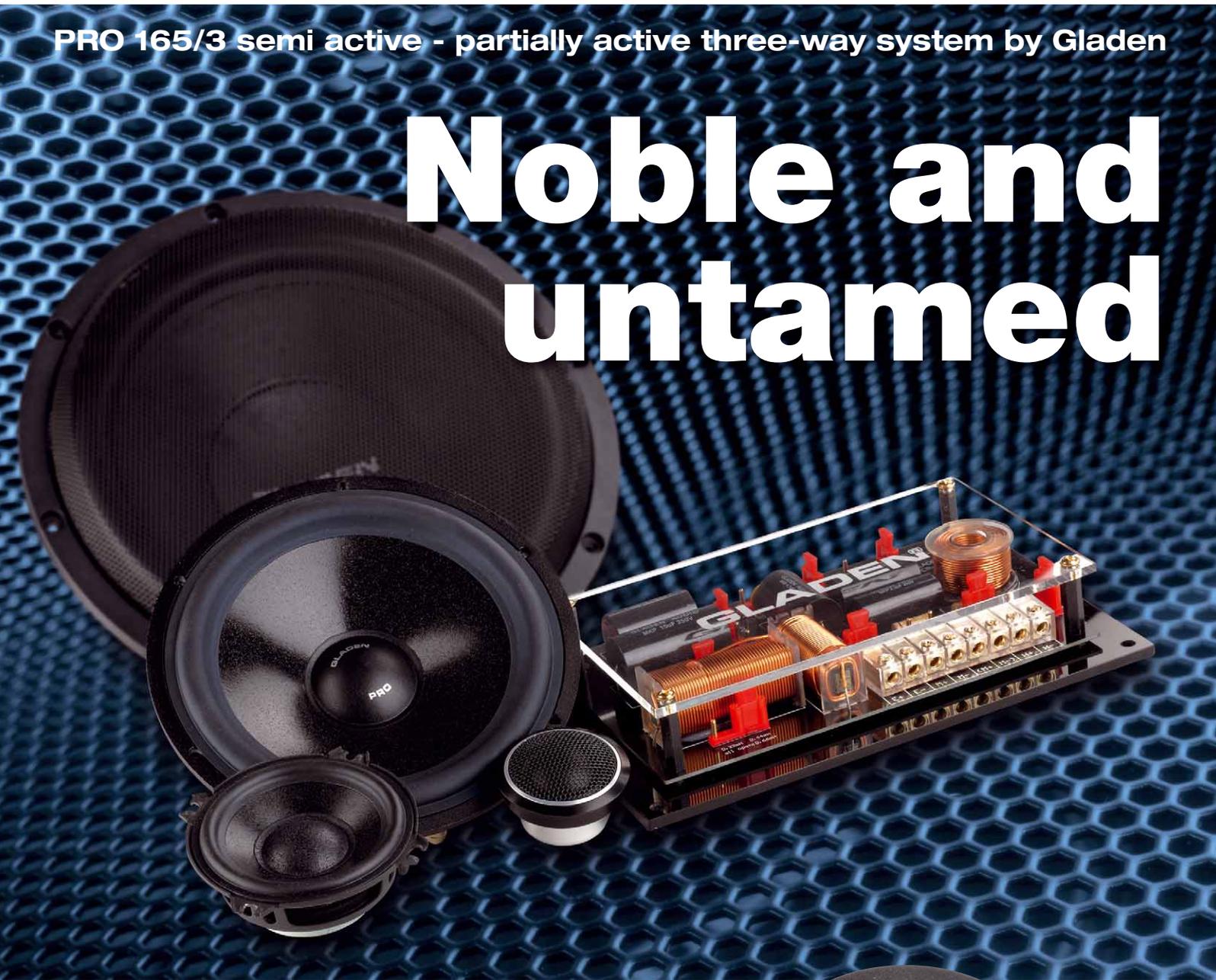


PRO 165/3 semi active - partially active three-way system by Gladen

Noble and untamed



► Gladen made a mark last year with the PRO series. Together with the amplifiers of the same name by Mosconi, the company thus definitely starts out to attack the top.

Having already had the opportunity to examine both the PRO subwoofer and the two-way system, we now for the first time have all the loudspeakers of the new PRO series from the house of Gladen at our disposal. The complete lineup consists of the PRO 25 tweeter, the PRO 80 midrange speaker, the PRO 165 midwoofer and the PRO 10

While the woofer is equipped with a ferrite motor, the midrange speaker works with a much more compact neodymium motor





The side view clearly shows the highly filigree structure of the woofer frame. A feast for the eyes and a technical masterpiece

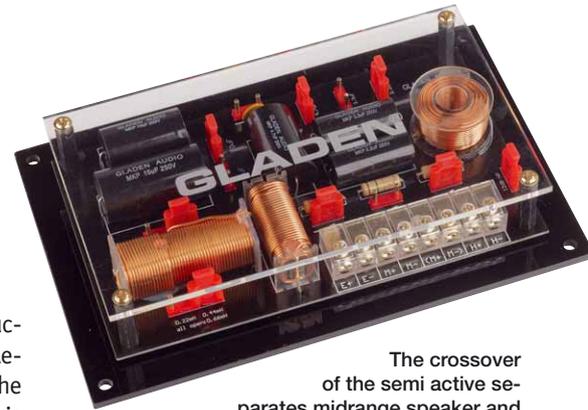
subwoofer. In addition, there is a passive crossover working both in the two-way and the three-way system. The series is expressly designed as a modular system that has been developed for optimum interaction and can be combined both passively and actively. All speakers are „made in Germany“; they are produced next to the Gladen headquarters, in tranquil Gundelsheim. In the Gladen loudspeaker program, the PRO line is situated between the two top series of Zero PRO and Aerospace, with the relationship to the noble Aerospace loudspeakers incontestably shining through. But while Aerospace formerly was designed as a statement almost no matter what its cost might be, the PRO line takes a more rational approach. In part, less expensive components are used than in the Aerospace; furthermore, everything has been omitted that was not necessarily beneficial to its sound; and last but not least, practicality is paramount. To put it in a nutshell: These speakers are not built for the showcase, but for use in the car.

By the way, like the PRO subwoofer, the 6.5" midwoofer may draw on the elaborately designed Aerospace frame, which was created from scratch on the computer and is characterized by its asymmetrically placed frame spokes, which offer only minimum resistance to air passage. Under the spider, the frame is completely open, so that here, too, the best possible ventilation of the voice coil is achieved. The coil has a befittingly sized diameter of 38 millimeters and together with the extended winding height provides a large surface for heat dissipation. The extended stroke in addition furthers linear reproduction at high levels. The first significant difference to the Aerospace 6.5" driver is the motor, which relies on ferrite rather than the more expensive neodymium. This is not a big loss in terms of performance; however, the motor with its thick 90 mm ferrite ring no longer integrates into the whole compact construction so smoothly. The second big difference lies in the cone. The PRO 165 comes with the classic paper cone, which received a mineral coating on the front. Even the dust cap is back to normal, the dome made of impregnated fabric abandons the Zero-Point design with the „indented“ center. This also applies

to the midrange speaker which is constructed in a similar way along the lines of „Aerospace light“. The aluminum cap over the motor has been omitted and a paper cone is used suitably matching the 6.5". Otherwise, there is a lot of technology transferred from the noble series to admire, as voice coil, motor and frame of our 80-mm midrange speaker are identical to those of its big brother. In contrast to the lower midrange, the PRO series tweeter goes its very own way. While Aerospace has two tweeters with 20 and 28 millimeter coil diameters, respectively, the PRO relies on a 25mm tweeter. This comes with a completely newly designed fabric dome, naturally coated by hand, and has a coupled rear chamber. For installing it also in factory places, the designers have come up with a special feature. The aluminum flange can be unscrewed from the housing, leaving the „bare“ tweeter. This can be installed relatively easily with its thread diameter of 42 millimeters and an installation depth of 22 mm measured from the surround level. Even in the case of a visible installation, the decomposability is a nice idea, because in this way the flange and the merely magnetically held grille can be painted separately from each other. Gladen for the PRO line crossover

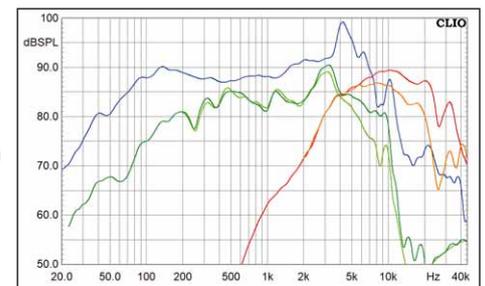


As is common in this class, the tweeter gets a coupled rear chamber lowering the resonance frequency

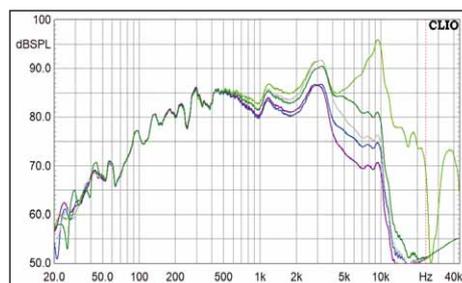


The crossover of the semi active separates midrange speaker and tweeter, the woofer is actively wired

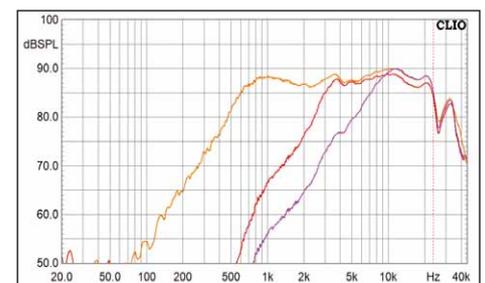
uses the existing crossover from the Zero-PRO series. The appliance is huge and really generously equipped so that nobody will complain about it. We only find coils made of thick wire and corresponding noble MKP capacitors as well as non-inductive metal oxide resistors. The wiring is basically simple, namely a straight-line 12/12-dB two-way separation. The special feature is that almost all components are available multiple times and can be combined to fit the required values. This happens with ideally solid jumpers, which offer a large-scale and secure contact. Even 6-dB circuits are possible by omitting the corresponding components, and for the high-end freaks, the protective PTC in front of the tweeter is bridgeable. Those, however, who want to actively use a DSP to run the PRO series will also find active kits for sale. Furthermore, all the PRO speakers are also available separately.



The woofer due to its small moving mass provides decent efficiency. The midrange speaker output is wavy and offers sufficient sound pressure from 300 Hz onward. The tweeter runs flawlessly up to over 20 kHz



Midrange speaker without crossover (light green) and with 12 dB crossover with .22/.44 mH (dark green, gray/blue, purple) and 10/15 µF (dark green, blue/gray, purple)



Tweeter without crossover and with lowest and highest separation frequency

Measurements and sound

After the laboratory test it is difficult to find even the smallest fly in the ointment. In fact, the Gladen PRO are among the best speakers our measuring microphone has ever heard. The 25-tweeter demonstrates its resonance at low levels of 700 Hz, so that it can join in from 1.5 kHz without hesitation. Its amplitude curve goes straight to over 20 kHz, and there are very few instances of distortion. Strange to say, however, the tweeter is almost the product with the least performance among the PRO chassis, because the lower midwoofer and even the small 8-midrange speaker really turn out sensationally good. The PRO 80 can be used from 300 Hz. If you balance it a bit and separate it at 400 Hz, it will leave many a 6.5" drivers(!) behind in terms of level consistency. The PRO 165, on the other hand, thanks to its long-stroke design, can even be used up to dizzying peak levels while remaining almost free of distortions as compared to other speakers. Before the PRO could reach its limit, our measuring amplifier had already dropped out. Especially at top levels, the amplitude curves of the midrange speaker and woofer are rather „untamed“, which means that they are by no means free from resonance peaks, but in no way dampened to death either. But the waterfall shows a very rapid subsiding of the cone resonances, so there is no danger here. Anyone who drives the PRO actively can then put an EQ band on the peaks to be on the safe side. In partially active operation on the crossover, it turns out that although the main resonance of the midrange speaker is well attenuated at (pleasantly high) 9.5 kHz, the peak of 3 kHz is retained. The separation frequency of the tweeter can be adjusted by means of the crossover from 2.5 to 6 kHz; the midrange speaker flank can be influenced in manifold ways by three coil values and two capacitors.

In the listening test, once again the adjective „untamed“ comes to mind. The PRO loudspeakers operate

The grille and mounting flange of the tweeter are removable for easy incorporation in original places



intensively, impulsively and meticulously. The attention to detail is heard already after a few seconds, but the speakers serve the music in such a serene and casual manner that there is never any suspicion that they might engage in sensationalism. On the contrary, even though this sound is crystal clear and acoustically transparent, is also suitable for long-distance on the other hand. Nor do the PRO hide anything in the range of voices and instruments. Male voices have a very nice grating timbre if the recording requires that, on the other hand, the speakers can also render tenderly melting female voices or a saxophone in such an authentic manner that it is sufficient to give you goose bumps. The spatial impression is impeccable, and here you can hear again the PRO line's very own meticulous effort of representing everything as realistically as possible. Hard-hitting basses at the highest levels are generally not considered to be a specialty of paper cones, but this model 16 can do it. Fat bass drums come with a crisp strike and a lot of body, the individual blows of wild runs are perfectly separated, and when you turn them louder, no sign of weakness mingles with the sound. This is really marvelous, and the best loudspeakers on the market well and truly have to watch out for this performance.

Conclusion

With the PRO line Gladen has achieved a masterstroke in every way. The speakers impress with the very best workmanship as well as with their sound, which needs not fear any competition. This is certainly high-end, just far too good for showing off only or for the cabinet - the PRO speakers belong in the cars of real sound freaks!

Elmar Michels

In the rear view, the asymmetrical arrangement of the frame spokes is clearly visible



Gladen PRO 165/3 semi active

Distributor	Gladen Europe, Walddorfhäslach		
Hotline	07127 8102820		
Internet	www.gladen.de		

Sound	55 %	1,0	■■■■■
Bass foundation	11 %	1,5	■■■■■
Neutrality	11 %	1,0	■■■■■
Transparency	11 %	1,0	■■■■■
Soundstage	11 %	1,0	■■■■■
Dynamics	11 %	0,5	■■■■■
Lab	30 %	1,0	■■■■■
Frequency response	10 %	1,5	■■■■■
Max. SPL	10 %	1,0	■■■■■
Distortion	10 %	0,5	■■■■■
Practice	15 %	1,0	■■■■■
Crossover	10 %	1,0	■■■■■
Workmanship	5 %	1,0	■■■■■

Specifications

Basket diameter	166 mm
Mounting diameter	143 mm
Mounting depth	66 mm
Magnet diameter	90 mm
Basket diameter midrange	83 mm
Mounting depth midrange	34 mm
Dome diameter tweeter	25 mm
Housing diameter tweeter	45 mm
Crossover slope wf/tw	-/6, 12 dB
Crossover slope mid HP/LP	-/6, 12 dB
Tweeter protection	PTC
Tweeter attenuation	-/+2 ... -4 dB
Grilles	-
Misc. XO slopes and level adjustable, tweeter easy to dismantle	-

Nominal impedance	3 Ohm
DC resistance Rdc	2,66 Ohm
Voice coil inductance Le	0,10 mH
Voice coil diameter	38 mm
Cone area Sd	135 cm ²
Free air resonance fs	58 Hz
Mechanical Q Qms	5,92
Electrical Q Qes	0,60
Total Q Qts	0,54
Volume of suspension Vas	14,7 l
Moving mass Mms	13,1 g
Mechanical resistance Rms	0,80 kg/s
Compliance Cms	0,58 mm/N
B*1	4,60 Tm
SPL 2 V, 1 m	88 dB
Amplifier power recommendation	60 – 200 W

Rating

Price	1.000 Euro		
Sound	55 %	1,0	■■■■■
Lab	30 %	1,0	■■■■■
Practice	15 %	1,0	■■■■■

Gladen PRO 165/3 semi active

Absolute Top Class	1,0
Top Class	
Upper Class	
Middle Class	
Entry Level	Preis/Leistung: very good



Issue 3/2018

„Classy speaker with balanced top sound.“