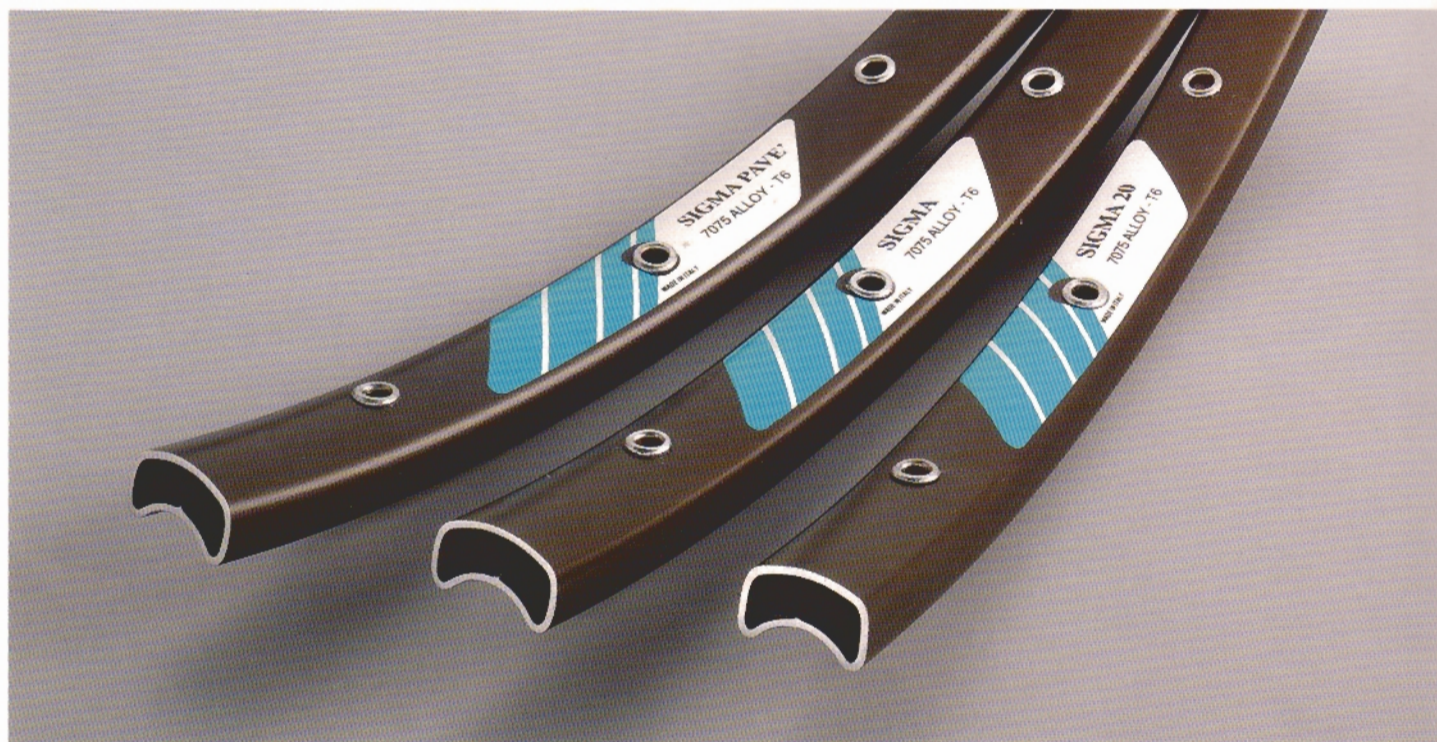


*Campagnolo*<sup>®</sup>



## 1992 RIMS RANGE

# RIMS FOR TUBULAR



Each series of rims, even if designed to meet a particular need has been developed using the same quality, the same engineering, the same production methods and has undergone the same rigorous quality control tests.

This industrial policy called for a long, careful examination of compatibility and optimization not only of the material used but also of the production processes and design.

Today, thanks to our intensive research, the most technologically advanced, highest quality rims are available for all cyclists: Campagnolo rims.



Campagnolo SIGMA rims have been created by the experience achieved through years of races on every road and track in the world, and meet all competitive requirements.

The SIGMA series of rims is designed for victory. State of the art technological process and sophisticated research are combined to give the cyclist a measure of quality and safety never before offered in a rim.

In project design, the highest consideration was given to the rigidity / elasticity combination in order to ensure the trueness of the rim and its ability to

withstand deformation under stress, including absorption of impacts.

Thanks to the technology and choice of the material Campagnolo SIGMA rims can easily be trued, this saves mechanics hours of wheel adjustment after a race. Patented eyelets, positioned according to the camber and the crossing, are safer with regards to the duration of spokes, remarkably reducing the possibilities of breakage in the most critical zones.

PROFILES	CODE	TYPE	DIM.	FINISH	DRILLING	WEIGHT	EYELET	ALLOY	H.T.
	P0071	SIGMA PAVE'	700 C	HARDOX	32-36	365	double eyelet	7075	T6
	P0091	SIGMA	700 C	HARDOX	32-36	335	double eyelet	7075	T6
	P0111	SIGMA 20	700 C	HARDOX	32-36	345	double eyelet	7075	T6

The weights are for rims without eyelets. Weight of one double eyelet for tubulars: 1,52 gr.





To the OMEGA type has been applied the technology developed for the rim destined to the most important races giving so sporting features particularly welcome by the bicycle fans.

An effective, layered hard anodization finish gives the rims its characteristic burnished color.

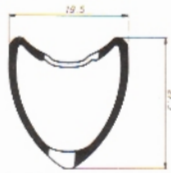

From a technological point of view, LAMBDA tubular rims are similar to those designed for all-out competitive use but without the high price normally associated with such technology.

The patented Campagnolo eyelet is mounted on the LAMBDA rims as well. The aluminium/magnesium alloy used has an elastic module of 7100 Kg/sq mm. This allows machine centering and balancing of the wheel without problems.

The mechanical characteristics of the material and the profile projected for the LAMBDA rims give these products a capacity to absorb impacts which is essential for comfort. And it does this without compromising the security of

the hold and the non-deformability of the rim.

OMEGA and LAMBDA are produced using the best materials and manufacturing methods to satisfy all different needs.

PROFILES	CODE	TYPE	DIM.	FINISH	DRILLING	WEIGHT	EYELET	ALLOY	H.T.
	P0451	OMEGA "V"	700 C	HARDOX	32-36	395	without eyelets	6082	T6
	P0171 P0211	OMEGA LAMBDA	700 C 700 C	HARDOX POLISHED	32-36 32-36	395 395	double eyelet double eyelet	5086 5086	H38 H38

The weights are for rims without eyelets. Weight of one double eyelet for tubulars: 1,52 gr.



## RIMS FOR CLINCHER TYRE



The use of the light clinchers is increasing, favoured by the research and development of new materials and techniques.

Campagnolo is present in this branch with a complete range of absolute avanguard.

The rim OMEGA XL is born to win. Its lightness gives the utmost in the athletics and can satisfy, with its resilience, the most particular professionals.

The types OMEGA, LAMBDA fully



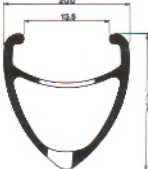
meet the demands both of the cycletourism and of the athletics.

Rims for clincher tyres come in two versions, normal box-section or aerodynamic profile.

The HARDOX anodization which increases the superficial hardness of the rim and the heat treatment which improves the mechanical strength of the material combine to give OMEGA clincher tyre rims unparalleled reliability.

LAMBDA rims for clincher tyres, just like their OMEGA counterparts, are designed in two versions: with normal and "V Profile" and these new Campagnolo rims use the same heat-treated aluminium alloy normally found in rims costing twice as much.

This superior aluminium alloy combined with Campagnolo's ultra-modern manufacturing technique guarantee that racing bikes built with

PROFILES	CODE	TYPE	DIM.	FINISH	DRILLING	WEIGHT	EYELET	ALLOY	H.T.
	P0162	OMEGA XL	700 C	HARDOX	32-36	375	double eyelet	6082	T6
	P0172	OMEGA	700 C	HARDOX	32-36	430	double eyelet	6082	T6
	P0212	LAMBDA	700 C	POLISHED	32-36	430	double eyelet	6082	T6
	P0222	OMEGA "V"	700 C	HARDOX	32-36	440	without eyelets	6082	T6
	P0322	YPSILON "V"	700 C	SILVER	32-36	440	without eyelets	6082	T6
	P0232	LAMBDA "V"	700 C	POLISHED	32-36	440	without eyelets	6082	T6

The weights are for rims without eyelets. Weight of one double eyelet for clinchers: 1.14 gr. Weight of one single eyelet: 0.46 gr.





LAMBDA rims will look and perform like new for months to come.

YPSILON is a light weight, professional quality clincher rim made with an alloy that has superior technical features.

Both its ultimate tensile strength and plastic deformation limit are far above that of other rims in its price range.

The "V profile" has been studied at the CAD and tested in the wind tunnel: the section is the best between an effective

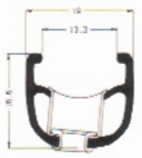


air penetration on the stiffness needed not to dissipate efforts.

Very recent is the introduction of the OMEGA 19 rim with exceptional features and limited weight which allow the best efficiency of fast runs.

The OMICRON series has been made especially for the OEM. In fact, it has been designed for use with automated wheel building machinery.

Its heat treated aluminium alloy gives it the strength necessary for carrying extra loads. OMICRON rims are available in versions: Polished, Silver, Black.

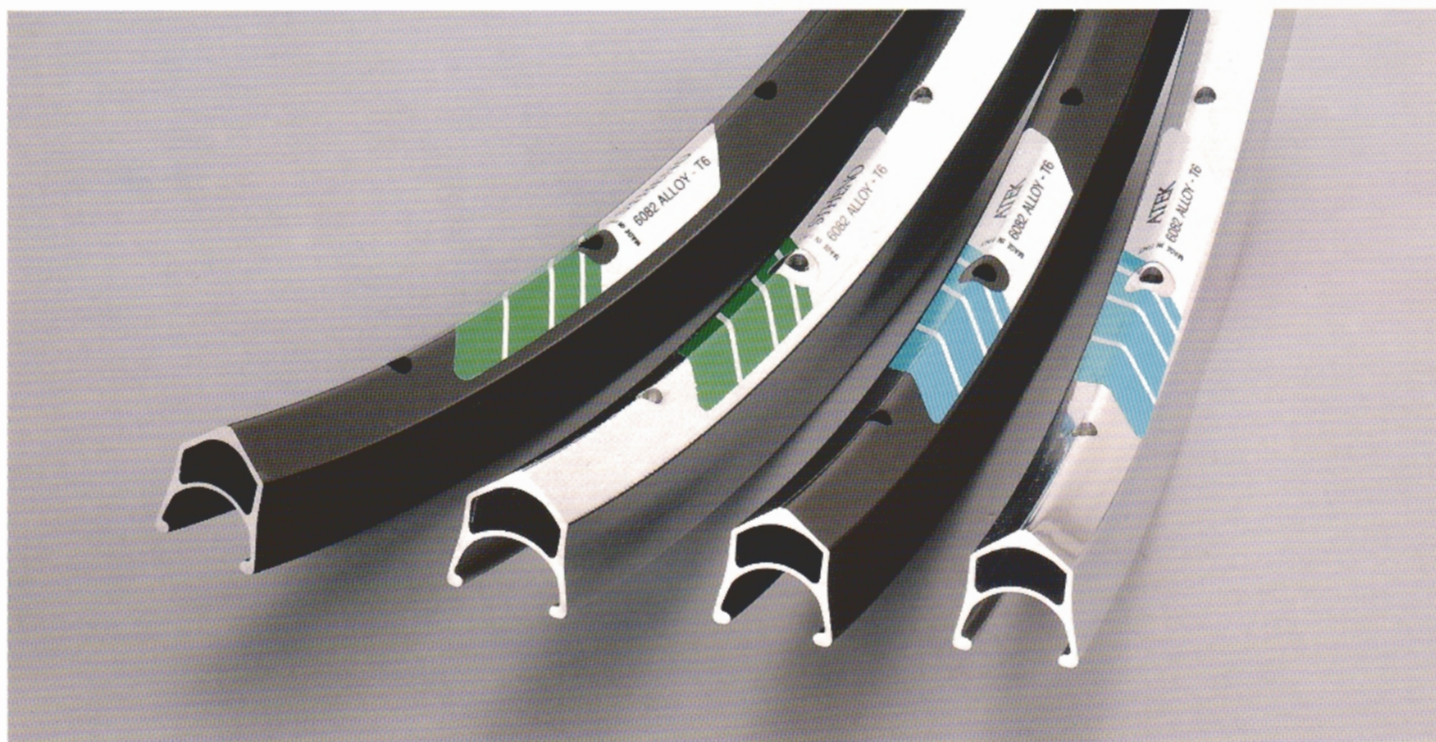
GAMMA rim, utilizing heat treated aluminium alloy, features well balanced, transverse and vertical rigidity factors, qualities necessary for good stability at the output point of automated assembly. Besides the good ratio quality/price, the GAMMA rim has been studied also for the automatic assembly.

PROFILES	CODE	TYPE	DIM.	FINISH	DRILLING	WEIGHT	EYELET	ALLOY	H.T.
	P0562	OMEGA 19	700 C	HARDOX	32-36	380	double eyelet	6082	T6
	P0692	OMICRON	700 C	BLACK	36	480	double eyelet	6061	T6
	P0362	OMICRON	700 C	SILVER	36	480	double eyelet	6061	T6
	P0272	OMICRON	700 C	POLISHED	36	480	double eyelet	6061	T6
	P0702	GAMMA	700 C	BLACK	36	480	single eyelet	6061	T6
	P0342	GAMMA	700 C	SILVER	36	480	single eyelet	6061	T6
	P0282	GAMMA	700 C	POLISHED	36	480	single eyelet	6061	T6

The weights are for rims without eyelets. Weight of one double eyelet for clinchers: 1,14 gr. Weight of one single eyelet: 0,46 gr.



# RIMS FOR OFF-ROAD



A new solution of mountain bike rims with high stiffness, endurance and lightness features has been obtained from the exasperated CAD planning and from the experience got after tests made during very hard and difficult agonistic routes, also thanks to the use of technically advanced material.

The braking reaction to determine the correct stopping attitude and the blocks wearing area has been checked on traditional rims.

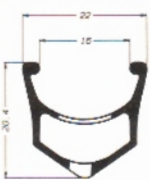
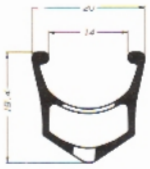
It has been ascertained that the "cantilever" brake with rims traditionally

edged overhead the rim and the block. For the typical movement of the cantilever braking it is necessary to have such a shape of rim edge which improves the coupling during braking also when the block wears progressively.

The edge of a traditional rim having a plate or convex, straight or inclined shape, gives to the block a triangular shape showing clearly that during the braking is not uniform on all the surface. Campagnolo have inclined the two rim edges to increase the blocks braking effort with the same effort applied to the

control levers, obtaining the working uniformity and the consequent specific block precision, thanks to the special edge shape.

The brake with a specific, uniform and steady pression on all the block, it means to obtain a gradual braking with the minimum effort on the brake levers, but above all avoiding the overheating of the rim and the blocks and to run longer descents without risks.

PROFILES	CODE	TYPE	DIM.	FINISH	DRILLING	WEIGHT	EYELET	ALLOY	H.T.
	P0594	STHENO	26"	HARDOX	32-36	405	without eyelets	6082	T6
	P0604	STHENO	26"	POLISHED	32-36	405	without eyelets	6082	T6
	P0614	ATEK	26"	HARDOX	32-36	390	without eyelets	6082	T6
	P0624	ATEK	26"	POLISHED	28-32-36	390	without eyelets	6082	T6

The weights are for rims without eyelets. Weight of one double eyelet for off-road rims: 1,52 gr.


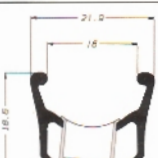




With this new patented profile Campagnolo includes in the mountain bike athletics a new range of rims: Stheno, Atex, Mirox and Zark in the version Hardox, Black, Polished, that will keep unchanged for a long time the aesthetics of the rim protecting it against the corrosion and the atmospheric agents. Among the many advantages that Campagnolo rims offer there is also the possibility to take off the tyre, in case of puncture, without tools but with the hands only.

A considerable advantage, especially during the mountain bike races, when immediate replacement in short time (two or three minutes approx.) can be resolute because in this field the change of wheel is absolutely absent. Campagnolo boasts today a large complete range of rims produced only with profiles and material chosen to get the best combinations of stiffness/elasticity, indeformability for a good shock absorption and a high comfort.

A very rich range fit for the different branches of agonistic biking confirms Campagnolo's leadership even in the most specialistic sectors.

PROFILES	CODE	TYPE	DIM.	FINISH	DRILLING	WEIGHT	EYELET	ALLOY	H.T.
	P0634	MIROX	26"	HARDOX	32-36	380	double eyelet	6082	T6
	P0644	MIROX	26"	POLISHED	32-36	380	double eyelet	6082	T6
	P0664	ZARK	26"	BLACK	32-36	405	double eyelet	6061	T6
	P0654	ZARK	26"	POLISHED	32-36	405	double eyelet	6061	T6

The weights are for rims without eyelets. Weight of one double eyelet for off-road rims: 1,52 gr.



# FLUID-DYNAMIC WHEELS



## GHIBLI M23

The success of the revolutionary Campagnolo wheel continues: the fluid-dynamic Ghibli M23 wheel.

Campagnolo, thanks to a patented working of a superlight material, the Kevlar, have made possible the realization of a wheel having the same weight of a traditional spokes wheel.



## SCIROCCO

SCIROCCO is a front wheel, antiwind thanks to the four holes made on the sides of the lateral surfaces.

Campagnolo, after studies and experimental tests have realized the shape of passage from the biconical surfaces to the hole, with an alar profile, according to the aerodynamic laws.



## KHAMSIN

The fluid-dynamic KHAMSIN wheel offers the best air penetration thanks to the traditional lightly convex profile of the surfaces; lightness is guaranteed by the new composite material utilized.

The KHAMSIN wheel has a special hub which can be turned from road into track and viceversa by replacement of the axles.

CAT. NO.	GHIBLI M23	RIM CROSS SECTION Ø	WEIGHT ~ gr.	HUB SPACING mm.	THREAD	FW./SPROCKET SPACING mm.
R0011	ROAD FRONT WHEEL 24" (600)	18	740	100	-	-
R0021	ROAD FRONT WHEEL 26" (650)	18	820	100	-	-
R0051	TRACK FRONT WHEEL 24" (600)	18	740	100	-	-
R0071	TRACK FRONT WHEEL 26" (650)	18	820	100	-	-
R0501	ROAD REAR WHEEL 28" (700 C)	18	960	126,5	36x24 IT	36
R0511	ROAD REAR WHEEL 28" (700 C)	18	960	126,5	1,370"x24 IN.	36
R0531	TRACK REAR WHEEL 28" (700 C)	18	960	120	36x24 IT	24
R0541	TRACK REAR WHEEL 28" (700 C)	18	960	120	1,370"x24 IN.	24

CAT. NO.	SCIROCCO	RIM CROSS SECTION Ø	WEIGHT ~ gr.	HUB SPACING mm.	THREAD	FW./SPROCKET SPACING mm.
R0215	ROAD FRONT WHEEL 26" (650)	18	980	100	-	-

CAT. NO.	KHAMSIN	RIM CROSS SECTION Ø	WEIGHT ~ gr.	HUB SPACING mm.	THREAD	FW./SPROCKET SPACING mm.
R0102	ROAD FRONT WHEEL 26" (650)	18	950	100	-	-
R0112	TRACK FRONT WHEEL 26" (650)	18	950	100	-	-
R0594	ROAD/TRACK REAR WHEEL 28" (700 C)	18	1110	126,5/120	36x24 IT	36/24
R0604	ROAD/TRACK REAR WHEEL 28" (700 C)	18	1110	126,5/120	1,370"x24 IN.	36/24

## PUMP CONNECTOR

To obtain perfect inflation of all Campagnolo fluid-dynamic wheels without damaging the internal walls of the wheels, use the special pump connector code PC-01



# SHAMAL



## SHAMAL

The most recent Campagnolo patent in wheel technology is called SHAMAL. It is an aerodynamic design created with a wing profile which allows the maximum efficiency to be achieved.

The aero position which riders adopt in races against time does not permit firm control of the handlebars and this becomes even more precarious, as far as stability is concerned, if fluid-dynamic front wheels are fitted on the bike on windy days.

This problem has been solved with a new, avant-garde technological concept applied to the Shamal wheel.

Aerodynamics applied to the new profile of the rim: this is the result obtained from research carried out on the

N.A.C.A. (National Advisory Committee for Aeronautics) curves which guided us in giving the profile in correspondence with the hub axle the form associated with the N.A.C.A. curve for 60 km/h.

This solution increases penetration into the air, eliminating the formation of braking vortices.

The wheel has only 16 spokes with a lenticular section without crossovers to contribute further to overcoming air resistance.

A reduction of the aerodynamic resistance is also obtained by recessing the nipples inside the profile, though these are still easy to access for adjustment which is carried out using a 5.5 mm

socket wrench.

The lightness of Shamal wheel is very significant, as can be seen in the table. The weight of the rear-wheel version also includes the 8 speed freewheel body without sprockets.

The lightness has no effect on lateral rigidity which is very high and uniform. The wheel is available in 26" and 28" versions and is supplied already assembled, without sprockets.

The Shamal wheel is supplied with an extension (code VE-01) to fit to the tire valve for inflating.

CAT. NO.	SHAMAL	RIM CROSS SECTION Ø	WEIGHT ~ gr.	HUB SPACING mm.	FREEWHEEL	SPROCKET SPACING mm.
R0226	ROAD FRONT WHEEL 26" (650)	18	750	100	-	-
R0236	ROAD FRONT WHEEL 28" (700 C)	18	790	100	-	-
R0626	ROAD REAR WHEEL 26" (650)	18	995	130	8 speed	41,5
R0636	ROAD REAR WHEEL 28" (700 C)	18	1040	130	8 speed	41,5



# CAMPAGNOLO SPECIAL BAGS



Both Fluid-dynamic and Shamal wheels can be easily transported in the special bags provided by Campagnolo.

The bags are made of scratchproof nylon, they are waterproof, washable, and are not affected by changes in temperature, thanks to the characteristics of the nylon.

The padding has been carefully chosen to ensure the best protection to weight ratio so that the wheels are protected against limited accidental knocks when transported.

The bags are available in two versions:

single for one wheel or double for pairs. The single version has a rigid reinforcement in the middle to protect the sidewalls against the pressure of the quick release.

The double version has an inner compartment for storage of the quick releases.



**Bag for one wheel code 7223001**

**Bag for two wheels code 7223002**

Campagnolo reserve the possibility to modify the technical specifications of the products without notice. Campagnolo decline all responsibilities for any improper use or tampering of the products.

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