INSPIRED BY NEWTON FIRST EDITION 2008

TECHNICAL CARBON

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isaac

INTRODUCTION 03 ISAAC NEWTON I 04 HISTORY AND PEDIGREE I EXCLUSIVITY I 07 VALUES I 08 OUR PHILOSOPHY I **ROADBIKES** 13 SONIC I 15 IMPULSE I 16 KELVIN I 18 PASCAL I **TRIATHLON & TIME TRIAL** 21 JOULE AEROTIC I 23 EFFICIENCY I **MOUNTAINBIKES** 24 IMPACT I **FACTS** 27 STRUCTURAL ENGINEERING I NATURAL FORMS I 28 OVERVIEW I 33 TECHNIQUE AND INNOVATION I COMPOSITE MATERIALS I 35 GEOMETRY I 37 THE MAKING OF ISAAC I 39 CRASH REPLACEMENT

ISAAC NEWTON

Newton was a 'natural philosopher'. Philosophy, in Newton's case, involved the pioneering of reason to isolate proof and fact. Newton answered some of the most important questions of all. His genius was in disregarding convention and challenging the dogma of superstition. His work resulted in the definition of undisputable laws that apply universally to all matter. By setting the appropriate problem, then applying a fanatical dedication to its resolution, one might arrive at the optimum solution. This is why we are so inspired by Newton.

HISTORY AND PEDIGREE

Isaac was formed as a global brand, and began at the very dawn of monocoque composite technology. Isaac chose to work exclusively with carbon composites from the outset, and immediately developed industry leading innovations and ground-breaking products. Isaac's pedigree is as long as the technological field in which it operates. That is history indeed.

EXCLUSIVITY

Isaac produces only serious competition products for the committed sporting cyclist. You will not see the Isaac name on utility bikes, as this is not our concern. You will not see Isaac in every shop, as dealers are selected with great care. You will not see the Isaac name applied to a multitude of frame material types, as we are committed to just one. Isaac is truly exclusive, and fully deserving of your investment.

STRONG LIKE AN EGG

Isaac 'head tube' and bottom bracket areas are elliptically shaped – a bit like an egg. An egg shell has immense strength, mainly due to its elliptical form.

STURDY LIKE A TREE

Isaac's 'Dual Diameter Steerer' has a larger diameter at the base – like a tree. This gives additional strength where the forces are greatest. Isaac's oversize lower bearing, in its asymmetrical headset, better handles loads and impacts.

HARD INTERFACES

Isaac frames have robust component-interfaces of hard-wearing aluminium alloy so that components can be attached with confidence. All Isaac frames also have an aluminium replaceable rear gear hanger.

NATURAL FORMS

Isaac road frames use rounded 'tube' sections. Rounded tubes are the most resistant to torsion, give optimum mechanical performance - and reduce stress risers. Natural structural members have soft, rounded shapes for these very reasons.

STRONG OUTER JACKET

All Isaac frames have a structural 'skin' of continuous, woven carbon in the visible layer. This adds strength and gives protection. Many natural structures also have a tough outer layer to provide strength and protection.

THE HUMAN ELEMENT

The vast majority of Isaac's production processes are carried out totally by hand. The specific detail of Isaac's carbon lay-up technique relies on the input of many highly-skilled technicians. All Isaac frames are therefore truly hand crafted.

SPECIFIC MATERIALS

Carbon composites mimic natural high-performance materials such as timber. Isaac makes clear distinctions regarding the exact materials used. Specific grades give the precise properties which Isaac can then fully exploit.

LIGHT AND TOUGH

Isaac frames are amongst the world's lightest, yet conform to the most stringent fatigue standards in the entire industry. Low weight is of little use without the necessary strength and practical robustness.

THE CONSIDERED SOLUTION

Because carbon composite structures are not restricted by traditional material conventions, they can be design-engineered to a far greater extent. This allows vastly increased scope for Isaac's considered and truly intelligent innovation.

CONTINUOUS MATERIAL

Monocoque means 'one shell'. The front triangle of every 2008 Isaac frame is made in one continuous piece. Nature's structural members do not have joints. Any joint, and the resulting material discontinuity, promotes weakness.

OUR PHILOSOPHY

Isaac has a definite philosophy. It runs deep and is complex. It is grounded in fact and reality. It demands reason. It is a set of values that determine everything we do. It defines our themes and direction. It dismisses blind convention. Isaac's philosophy is everything, and more. We live it, so do not often have to consider an explanation.
However, please read on and you might begin to understand. Then ride an Isaac and you will know for sure.

SONIC

The vast majority will never own an Isaac, let alone a Sonic. Is the Sonic too good, and finer than is necessary? Of course it is, for this is the very definition of luxury. Few will ever sample its delights. The mere sight of a Sonic will inspire powerful envy and painful longing. Isaac offers no apology, and ownership is the sole remedy. This year's Sonic introduces an all-new mould form. It has a beguiling sleekness and an understated finish that makes rival offerings seem rather vulgar and awkward by comparison, but then real quality requires only a subtle whisper to announce its presence.

also available in carbon-black

IMPULSE

The new Impulse takes Isaac's 'Natural Forms' ethos to the next level. The dynamic form has been developed to best process the stresses of competitive cycling. A true mono-coque front triangle provides torsional and lateral stiffness, along with optimum vertical suppleness. It resists and dissipates forces to combine criterium stiffness with all day comfort. Is this the best all-round road racing frameset available today? The true answer is to be found on cobbled climbs, winding hair-pin descents, and that all-out, elbow bashing sprint for the line.

KELVIN

Wow! Did it really get lighter? Yes, and whilst maintaining the robustness and efficiency for which the Kelvin is renowned. The new, lower weight brings obvious benefits, whilst the familiar qualities of strength and stiffness remain. The Kelvin incorporates ground-breaking features with high end, hand made production techniques, to deliver a ride that gives back every bit as much as you put in. This is the bike for long seasons of hectic racing. This is the bike that will, more than ably, handle anything you care to throw at it.

PASCAL

Isaac starts where many brands top out. The Pascal is a true monocoque frame which is 100% hand laminated. It is made from high-end Japanese carbon filament, with various grades specified to suit particular applications and specific areas of the structure. It features Isaac's dual-diameter steerer, alloy component interfaces and a replaceable gear hanger. It is exclusive, original, innovative and highly detailed - but then you have naturally come to expect this of Isaac. There is just one major surprise, but a pleasant one; the affordable price tag.

also available in red

also available in black-white

JOULE AEROTIC

Yes, the rumour is true, someone really did buy a Joule Aerotic – equipped as you see it here - to hang on their wall as art. However, perhaps they have missed the point somewhat. This radical design is primarily a dedication to engineered speed. Speed with raw aggression over the seven kilometres of a prologue time trial. Speed with comfort in the rock-strewn vistas of Hawaii. And, speed in every lone-effort discipline between these two extremes. The unique aesthetic simply results from the intelligent application of Isaac's 'Natural Form' theories. Is it art? Well, perhaps. Is it engineered? Yes, most certainly. Is it fast? Without any shadow of a doubt!

EFFICIENCY

Isaac developed one of the very first, and certainly the most successful, aero carbon-monocoque frameset designs of all time. It has been hailed as a classic icon. Isaac's Efficiency model is the direct descendent – but with added benefits from half a decade of further development and manifold refinements. This is truly a super-light package. It has an aerodynamically developed form and internal cabling, so the faster you go the more benefit you gain, and vice versa. Light, stiff, comfortable, beautiful and practical; it is everything that an Isaac should be.

IMPACT

Developed specifically for the high Alpine trails of Germany, Austria and Switzerland, the efficient stiffness and lack of weight bring agility and poise which is beyond comparison. The Impact combines the highest materials technology with a simple, elegant and understated cross-country monocoque design. Without a shock, linkages or pivots, this is a fine instrument rather than a gadget-laden machine. On an Impact you will revel in a resolute simplicity that compliments and rewards the skills of a sophisticated, competitive rider.

STRUCTURAL ENGINEERING

Structural engineering is not a term from the cycle industry, but is a key element at Isaac. The cycle frameset is most definitely a structure. It is subject to physical demands, prescriptive dimensional specification and component interface convention. The competition cycle frame demands high-performance. Our goal is to provide the very best mechanical properties at the lowest possible weight. We arrive at this through engineering. That is, structural engineering. Our task is little different to that of race-car chassis or aircraft fuselage designers. Our general approach to the task in hand is no different to theirs. We are structural engineers.

NATURAL FORMS

Isaac Newton discovered that nature acts according to clearly defined rules rather than anarchic chaos. Like Newton, Isaac is fascinated and inspired by the indisputable methods of nature. Natural structures are the result of a relentless R&D project – called Evolution. Think of a plant stem, a tree branch or a bone. Nature's materials are produced as the structure is formed, and shaped perfectly to suit specific purposes. Nature's structural elements have no edges, or joins, to promote weakness, and are reinforced where interfaces occur. Natural structural materials are fibrous composites which are light, strong, and can flex to manage stress and resist breakage. Through advanced composite engineering, Isaac fully utilises nature's unquestionably brilliant structural principles.

SONIC

APPROX. 880g FRAME WEIGHT (SIZE54)
DEVISED FOR ULTRA LIGHT WEIGHT
TRUE MONOQUE FRAME WITH 3K LAYER
OUT OF A NEW MOULD
ULTRAHIGH MODULUS REINFORCED CARBON 440 GPa
THINNER HEADTUBE, MORE AERODYNAMIC
NEW ISAAC MONOQUE FORK WITH DUAL-DIAMETER STEERER
FSA ORBIT-CARBON ASYMMETRICAL INTEGRATED HEADSET
ISAAC MONOQUE 31.6mm SEAT POST

isaac TECHNICAL CARBON
ULTRAHIGH MODULUS REINFORCED CARBON
440 GPA
OPTIMISED HAND LAY-UP PRESSURE-MODULED MONOCOQUE
ANGLO-GERMAN ENGINEERING

IC isaac CRASH REPLACEMENT

IMPULSE

APPROX. 980g FRAME WEIGHT (SIZE54)
DEVISED FOR LOW WEIGHT AND HIGH STRENGHT
TRUE MONOQUE FRAME WITH 3K LAYER
OUT OF A NEW MOULD
HIGH MODULUS CARBON 320 GPa
THINNER HEADTUBE, MORE AERODYNAMIC
NEW ISAAC MONOQUE FORK WITH DUAL-DIAMETER STEERER
FSA ORBIT-CARBON ASYMMETRICAL INTEGRATED HEADSET
ISAAC MONOQUE 31.6mm SEAT POST

isaac TECHNICAL CARBON
HIGH MODULUS CARBON
320 GPA
SYSTEMATIC HAND LAY-UP PRESSURE-MODULED MONOCOQUE
ANGLO-GERMAN ENGINEERING

IC isaac CRASH REPLACEMENT

COMETA

Sexist, prejudiced and condescending? Not Isaac. Research proves that the female body has the same proportions as its male counterpart, only scaled down a bit. This is a fact. Do the female pro's ride female frames? Does your gender demand an inferior product? Are you unworthy of serious quality? Of course not! So, here is a true competition frameset, with all the technological input and detail that 'he' enjoys, presented in a subtly fashionable colour scheme. Isaac is with you, sister!

For more technical information please visit our website.

isaac TECHNICAL CARBON
HIGH MODULUS CARBON
320 GPA
SYSTEMATIC HAND LAY-UP PRESSURE-MODULED MONOCOQUE
ANGLO-GERMAN ENGINEERING

IC isaac CRASH REPLACEMENT

KELVIN

APPROX. 1200g FRAME WEIGHT (SIZE54)
DEVISED FOR BALANCED CHARACTERISTICS
TRUE MONOQUE FRAME
INTERMEDIATE CARBON 320 GPa
ISAAC MONOQUE FORK WITH DUAL-DIAMETER STEERER
FSA ORBIT-CARBON ASYMMETRICAL INTEGRATED HEADSET
ISAAC MONOQUE 27.2mm SEAT POST

isaac TECHNICAL CARBON
INTERMEDIATE CARBON
320 GPA
SYSTEMATIC HAND LAY-UP PRESSURE-MODULED MONOCOQUE
ANGLO-GERMAN ENGINEERING

IC isaac CRASH REPLACEMENT

PASCAL

APPROX. 1350g FRAME WEIGHT (SIZE56)
HIGH PERFORMANCE-TO-COST RATIO
TRUE MONOQUE FRAME
HIGH STRENGHT CARBON 265 GPa
ISAAC MONOQUE FORK WITH DUAL-DIAMETER STEERER
FSA ORBIT-CARBON ASYMMETRICAL INTEGRATED HEADSET
ISAAC MONOQUE 27.2mm SEAT POST

isaac
TECHNICAL CARBON
HIGH STRENGTH CARBON
265 GPA
ASSURED HAND LAY-UP PRESSURE-MODULED MONOCOQUE
ANGLO-GERMAN ENGINEERING

AEROTIC

APPROX. 1380g FRAME WEIGHT INCLUSIVE SEATPOST (SIZE S)
DEVISED FOR MAXIMUM SPEED
TRUE MONOQUE FRAME
ULTRA HIGH MODULUS REINFORCED CARBON 440 GPa
ISAAC MONOQUE FORK WITH DUAL-DIAMETER STEERER
FSA ORBIT-CARBON ASYMMETRICAL INTEGRATED HEADSET
ISAAC INTEGRATED SEAT POST DESIGN
INTERNAL CABLE ROUTING

isaac
TECHNICAL CARBON
ULTRAHIGH MODULUS REINFORCED CARBON
440 GPA
OPTIMISED HAND LAY-UP PRESSURE-MODULED MONOCOQUE
ANGLO-GERMAN ENGINEERING

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isaac
CRASH REPLACEMENT

EFFICIENCY

APPROX. 1250g FRAME WEIGHT (SIZE M)
DEVISED FOR LOW WEIGHT AND HIGH STRENGHT
TRUE MONOQUE FRAME
INTERMEDIATE CARBON 320 GPa
ISAAC MONOQUE FORK WITH DUAL-DIAMETER STEERER
FSA ORBIT-CARBON ASYMMETRICAL INTEGRATED HEADSET
ISAAC INTEGRATED SEATPOST DESIGN
INTERNAL CABLE ROUTING

isaac
TECHNICAL CARBON
INTERMEDIATE CARBON
320 GPA
SYSTEMATIC HAND LAY-UP PRESSURE-MODULED MONOCOQUE
ANGLO-GERMAN ENGINEERING

IC
isaac
CRASH REPLACEMENT

IMPACT

APPROX. 1250g FRAME WEIGHT (SIZE 19")
DEVISED FOR LOW WEIGHT AND HIGH STRENGHT
TRUE MONOQUE FRAME WITH 12K LAYER
HIGH MODULUS CARBON 320 GPa
FSA ORBIT-CARBON ASYMMETRICAL INTEGRATED HEADSET
CANTILVER AND DISC BRAKE COMPATIBLE

isaac
TECHNICAL CARBON
HIGH MODULUS CARBON
320 GPA
SYSTEMATIC HAND LAY-UP PRESSURE-MODULED MONOCOQUE
ANGLO-GERMAN ENGINEERING

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CRASH REPLACEMENT

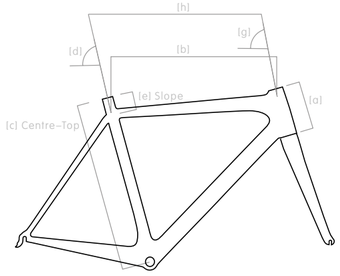
TECHNIQUE AND INNOVATION

Isaac is a true innovator. Just look at the Isaac 'Dual-Diameter Steerer' for instance. It was developed as part of the Isaac monocoque carbon fork concept in 2001. It brings an entire range of performance benefits. It has been described as the most significant cycle design innovation of this century. Today, many other manufacturers have 'borrowed' this concept. We are flattered by their attention to our pioneering innovation. Isaac has used the most advanced monocoque construction and internal bladder moulding techniques from the outset. The benefits of jointless composite structures are obvious. Development is a journey, not a destination, and Isaac continues to innovate and refine so that Isaac remains at the cutting edge of cycle technology.

COMPOSITE MATERIALS

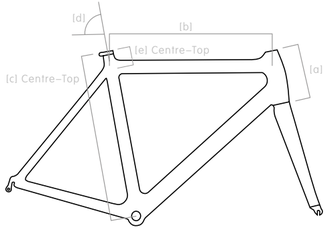
There is a choice of material protocols for the high-end cycle frame today – aluminium, steel, titanium, and carbon composites. Each delivers various unique properties. Choice should depend on the final purpose of the frameset. All Isaac framesets are designed primarily for competition use, where the overriding concern is performance. When performance is all important there is just one material worthy of consideration. Isaac frames are therefore carbon composite, and each model uses true monocoque construction. Isaac utilises a wide range of carbon filament types. All have been produced, by the world's leading suppliers, to the appropriate aerospace certification standards.

ROAD



SONIC IMPULSE

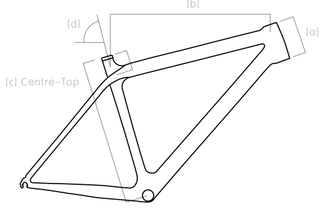
Size	[a] Head-tube length	[b] top-tube length (HORIZONTAL)	[h] top-tube length (SLOPE)	[c] seat-tube length (C to T)	[d] seat-tube angle	[g] head-tube angle	[e] slope
51	144 mm	528 mm	514 mm	510 mm	74.5°	72.5°	62 mm
54	160 mm	545 mm	531.6 mm	540 mm	74°	73°	60 mm
55.5	176.5 mm	560 mm	546.5 mm	555 mm	74°	73°	59 mm
57	189 mm	570 mm	557 mm	570 mm	73.5°	73.5°	63 mm
60	214 mm	598 mm	583.2 mm	600 mm	73.5°	73.5°	58



KELVIN PASCAL COMETA

Size	[a] Head Tube	[b] Top Tube	[c] Seat Tube	[d] Angle	[e] Slope	Inseam Length
48	124 mm	510 mm	480 mm	75.0°	30 mm	- 79
51	144 mm	525 mm	510 mm	74.5°	30 mm	77 - 82
54	164 mm	545 mm	540 mm	74.0°	35 mm	80 - 83
55.5	176.5 mm	557.5 mm	555 mm	74.0°	35 mm	82 - 85
57	189 mm	570 mm	570 mm	73.5°	40 mm	84 - 87
58.5	201.5 mm	582.5 mm	585.0 mm	73.5°	40 mm	86 - 89
60	214 mm	595 mm	600 mm	73.5°	45 mm	88 - 93

MTB



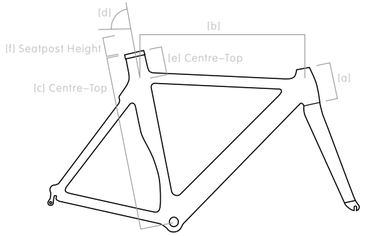
IMPACT

Size	[a] Head Tube	[b] Top Tube	[c] Seat Tube	[d] Angle	[e] Slope	Inseam Length
17.5	125 mm	540 mm	445 mm	73.5°	55 mm	77 - 85
19	135 mm	570 mm	485 mm	73.5°	55 mm	82 - 87
20.5	145 mm	590 mm	525 mm	73.5°	55 mm	86 - 93

TRIATHLON/ TIMETRIAL

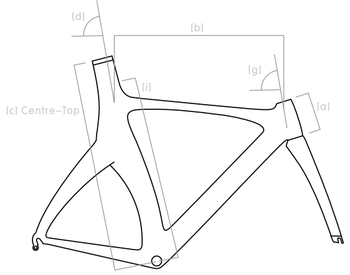
EFFICIENCY

Size	[a] Head Tube	[b] Top Tube	[c] Seat Tube	[d] Angle	[e] Extension	[f] BB to Saddle Rail	Inseam Length
XS	116mm	525mm	510mm	76.0°	50mm	min 630mm - max 760mm	- 83
S	116mm	539mm	540mm	76.0°	50mm	min 660mm - max 790mm	80 - 86
M	135mm	557mm	560mm	76.0°	50mm	min 680mm - max 810mm	84 - 88
L	158mm	575mm	580mm	76.0°	50mm	min 700mm - max 830mm	88 - 95



JOULE AEROTIC*

Size	[i] minimum cut distance	[a] Head-tube lenght	[b] top-tube length (HORIZONTAL)	[c] seat-tube length(C to T)	[d] seat-tube angle	[g] head-tube angle
XS	680 mm	100 mm	520 mm	760 mm	76°	72°
S	700 mm	100 mm	539 mm	780 mm	76°	72°
M	720 mm	135 mm	557 mm	800 mm	76°	73°
L	740 mm	158 mm	575 mm	800 mm	76°	73°



The given inseam measurements are approximate suggestions only. They are provided to give a simple overview of sizing. A complete geometrical diagram for each model and size can be found at www.isaac-carbon.com.
Isaac recommends use of the Bikefitting system for a correct determination of specific frame size and optimum cycling position. bikefitting.com
* Joule Aerotic is available in four sizes. The max./min. saddle height dimensions, and complete geometrical data, can be found at www.isaac-carbon.com

THE MAKING OF ISAAC

Every Isaac model starts off as a creative idea with a set of desired values. These values are not imagined; they are simply the real demands of the committed competition cyclist. Strength, weight, efficiency, handling, robustness, comfort, aesthetics and cost are the major elements that have to be considered. Success comes with a frameset that delivers the optimum balance of these elements. This is Isaac's mission.

The process begins with simple hand sketches where ideas become visible for the first time. These initial visuals are transferred to a computer and rendered as a 3D model using the latest CAD Technology. Simulated loads can then be applied using Finite Element Analysis to reproduce the forces that must be endured by the structure in use.

When the form has been optimised, and all of the necessary design criteria have been satisfied, work can begin on the first prototype moulds. Like the process of birth, creation of an initial prototype frame finally brings physical reality to the project – but much more work lies ahead. Have a look!

CRASH REPLACEMENT

An exclusive service for an exclusive brand – Isaac Crash Replacement.
Crashing hurts and, when the scrapes and bruises have healed, replacing a frame can really hurt! So, we have devised a scheme to soften the blow somewhat. Damage your Isaac frame set in a mishap within two years of purchase, and get a replacement frame set at around half price. We sincerely hope that you never need this service. But unfortunately, just sometimes, the unthinkable does happen.

Terms and conditions apply. Please go to www.isaac-carbon.com for more details.

ISAAC International Ltd.
Head Office

Fort Fareham
Hants PO14 1FD
England
isaac-carbon.com

Please ensure that the appropriate Isaac manual or instruction sheet is provided by the retailer when purchasing any Isaac product. Frame sets are supplied with an owner's manual, and all other products are supplied with an instruction sheet. It is important that the instructions are read and understood by the consumer, prior to use of the product. As with any complete cycle or cycle part, failure to follow the instructions for correct fitting procedure and/or conditions of use could result in an accident. Please retain any manual or instruction sheet for future reference.

Isaac products have been dev eloped and manufactured with great care for the purpose of competition and training cycling appropriate to their specific type. Under European (EU) consumer law the purchaser has full statutory warranty rights within the first two years of purchase.
For frames only, Isaac International Limited offers a further warranty extension period of an additional three years.
Thus giving a total of five years warranty cover (from date of retail purchase), against failure of the frame due to defects in materials or workmanship.
The manufacturer's extended warranty is offered in addition to the consumer's statutory rights, which remain unaffected.
The manufacturer's extended warranty is subject to specific limitations, terms, and conditions. The extended warranty offer applies only to the original retail purchaser (the consumer) on completion/submission of the extended Warranty Registration Form, to be found on the Isaac website: www.isaac-carbon.com.
This warranty is not transferable. Statutory consumer legislation may be different in non-EU markets.
Specifications shown in this brochure are based upon the latest available information at the time of printing.
The colours and finishes repoduced in this brochure are subject to the limitations of the printing process and may vary from the actual colour and paint finish. In line with our policy of continual product improvement Isaac Ltd. reserves the right to make changes at any time, without notice, to prices, colours, material, design, shape, specifications and models, and to discontinue items.

ISAAC recommends:

Bike build equipment shown in this brochure is a suggestion only. Complete bike specifications and options may vary from country to country. Please check with your Authorised Isaac Stockist or Isaac National Distributor for full details of bike build options. Isaac operates a continuous development programme and reserves the right to amend specifications without prior notice. Quoted weights and dimensions are taken from actual sample products and may vary within accepted tolerances.

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ISAAC International Ltd.
Sales & Marketing / Marketing / International Distribution

Marienberger Straße 6c
38122 Braunschweig / Germany
tel +49(0)531/87609-30
fax +49(0)531/87609-31
sales@isaac-carbon.com

To find your local stockist please visit **isaac-carbon.com**

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