



Air Cooled Technologies





Con l'incremento della potenza dissipata dai dispositivi elettronici e la loro riduzione nelle dimensioni, la gestione della dissipazione di calore diventa un fattore sempre più importante nella progettazione dei prodotti elettronici. Una temperatura di funzionamento troppo elevata ne diminuisce infatti drasticamente sia l'affidabilità che la vita media. **Mecc.AI** è specializzata nella progettazione e produzione di una gamma completa ed in continua evoluzione di dissipatori di ultima generazione per l'industria elettronica.

A catalogo sono riportati tutti i profili e gli accessori dell'attuale gamma di prodotto standard che viene costantemente integrata dall'introduzione di nuovi profili e soluzioni tecnologiche.

La struttura tecnico commerciale di **Mecc.AI** è a completa disposizione dei propri clienti e partner commerciali per supportarli in ogni loro più specifica esigenza e possibile customizzazione del prodotto.

With the increase of the power dissipated by electronic devices and their reduction in size, the thermal management of heat dissipation becomes an increasingly critical factor in the design of electronic products. A too high operating temperature drastically decreases both the reliability and lifetime of the components. **Mecc.AI** is highly specialized in designing and manufacturing a full range in continue evolution of last generation heat sinks for the electronics industry. The catalogue lists all the profiles and accessories of the current range of standard product that is constantly integrated into the introduction of new profiles and technological solutions. The Sales and Technical Departments of **Mecc.AI** are at its customers and business partners full disposal to support them in all their specific needs and possible customized products.



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Azienda

The Company



Mecc.AI srl, fondata nel 1996, è una delle sette aziende facenti parte del più grande gruppo industriale privato italiano del settore dei laminati in alluminio con volumi complessivi annui prodotti di oltre 180.000 tonnellate ed esportati in 85 paesi. A capo del gruppo è **Profilglass** S.p.A, a sua volta leader mondiale nella produzione di profili distanziatori e decorativi per vetrocamere.

Mecc.AI è l'azienda del gruppo specializzata nella progettazione e produzione di dissipatori di calore e supporti meccanici per l'industria elettronica. Avvalendosi delle più moderne tecnologie produttive e di macchine a controllo numerico di ultima generazione, ed attraverso l'esperienza e know-how del proprio ufficio tecnico, **Mecc.AI** offre ai propri clienti una gamma completa di dissipatori in alluminio estrusi, saldati, assemblati ad alte prestazioni, sistemi a clips e ad alette resinate, piatti ad acqua prodotti con diverse tecnologie.

Le due ultime linee di prodotto introdotte e brevettate, **Profilmecc** e **ProfilmeccPlus** completano l'attuale gamma dell'azienda. Gamma utilizzabile per una ampia varietà di applicazioni, dai gruppi di continuità ai sistemi di telecomunicazione, dall'elettronica industriale di potenza ai sistemi per energia rinnovabile, dal ferroviario all'automotive.

Mecc.AI srl, founded in 1996, is one of the seven companies belonging to the largest Italian private industrial group in the sector of rolled aluminum products with a total annual manufactured volume of over 180,000 tons exported to 85 countries.

Heading the group is **Profilglass** S.p.A, world leader in the production of spacers and decorative profiles for insulating glass. **Mecc.AI** is the company of the group specialized in the design and manufacture of heat sinks and mechanical support for the electronics industry. Using the most modern design and production technologies and last generation CNC machines, and through the experience and know-how of its Technical Department, **Mecc.AI** offers its customers a full range of aluminum heat sinks extruded, welded, assembled high-performance, clip systems and bonded fins, liquid cooled plates produced with different technologies. The latest product lines introduced and patented, **Profilmecc** and **ProfilmeccPlus**, complete the actual range. A range of products suitable for a wide variety of applications, from uninterruptible power supplies to network-communications, from power electronics to renewable energy, railway and automotive sectors.



Qualità, efficienza e servizio

Quality, efficiency and service



Mecc.AI fornisce da sempre prodotti che soddisfano o eccedono le richieste dei clienti per qualità, tempi di consegna e prestazioni. È una filosofia che i nostri dipendenti hanno assimilato a tutti i livelli, assicurando uno standard qualitativo elevato e costante nel tempo riuscendo così a perseguire l'obiettivo della piena soddisfazione del cliente.

La ricerca della qualità in tutti gli aspetti della produzione è uno dei punti fondamentali di **Mecc.AI**, certificata dall'ente internazionale DNV, secondo la norma UNI EN ISO 9001:2008, grazie anche ad una accurata politica di selezione e controllo rivolta verso i nostri partner e fornitori.

Il reparto di R&S e l'Ufficio Tecnico di **Mecc.AI** sono in grado di fornire ogni tipo di informazione relativa al prodotto e al suo migliore utilizzo, e di sviluppare dissipatori e profili speciali su specifica del cliente, fornendo assistenza e supporto per l'ottimizzazione delle performance termiche del dissipatore con un laboratorio specializzato nella simulazione e caratterizzazione che si avvale di strumenti software all'avanguardia come SolidWorks Flow Simulation.

Un prodotto di alta qualità, affidabile ed esauriente, la capacità manifatturiera, il personale dedicato e qualificato ed il rispetto rigoroso dei celeri tempi di consegna sono i punti di forza di **Mecc.AI** che la rendono partner ideale per tutte le esigenze nell'ambito della dissipazione del calore.

Il nostro impegno nella qualità si rivolge allo stesso tempo al rispetto della salute umana ed ambientale, offrendo prodotti conformi alla direttiva RoHS e REACH che limita la presenza di sostanze pericolose nella produzione di apparecchiature elettriche ed elettroniche.



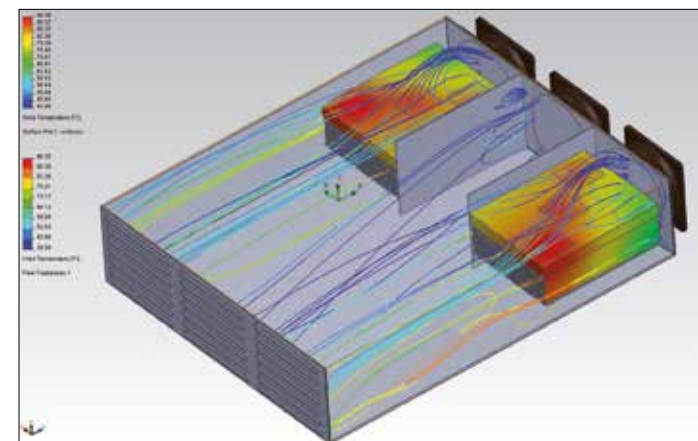
Since always and as a company prerogative **Mecc.AI** provides products that meet or exceed customer requirements in terms of quality, delivery terms and performance. It is a philosophy that our employees have assimilated at all levels, ensuring a high standard of quality and constant over time allowing them to pursue the goal of the complete customer satisfaction.

Top quality in all aspects of production is one of the key points of **Mecc.AI**, certified UNI EN ISO 9001:2008 by the International Accredited Unit DNV, thanks also to an extremely careful policy of selection and control of our partners and suppliers.

The R&D and Technical Department of **Mecc.AI** can provide any information and support on the product and its best use and application, and is able to design and develop new heat sinks and special profiles according to customer specifications optimizing the thermal performance of the heat sinks also supported by SolidWorks Flow Simulation software.

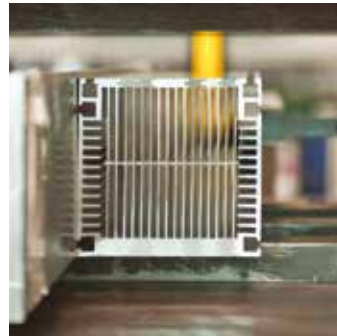
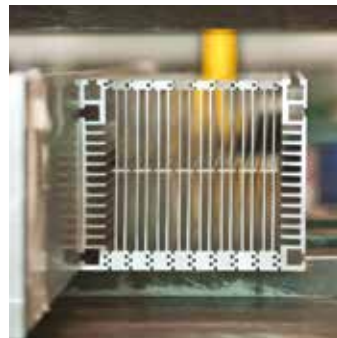
The ability to provide a high quality product, reliable and comprehensive manufacturing capacity, dedicated and qualified staff and strict respect to the short delivery terms are the strengths of **Mecc.AI** that make us an ideal partner for all requirements on thermal management.

Our commitment to quality is targeted at the same time to human and environmental respect and health, by offering products that meet the RoHS and REACH directives that restrict the presence of hazardous substances in the production of electrical and electronic equipment.



La produzione

The production



Dotata delle più moderne tecnologie produttive, di un magazzino fornito da più di 600 diversi profili estrusi, placche di varie leghe e coils di diversi spessori, avvalendosi di un processo produttivo supportato da diversi centri di lavoro a controllo numerico multi pallet, **Mecc.Al** riesce a far fronte ad ordini per piccoli e grandi quantitativi garantendo sempre la massima qualità e puntualità nelle consegne. Grazie all'utilizzo dei più moderni software di progettazione CAD/CAM, di SolidCAM di SolidWorks, siamo in grado di fornire soluzioni efficaci anche su progetti complessi, garantendo fin dal primo stadio di sviluppo la totale rispondenza alle specifiche del cliente. Il Sistema Controllo Qualità è supportato dall'utilizzo dei più moderni strumenti di misurazione verticale e tridimensionale.

Sono disponibili in produzione:

- Macchine per il taglio automatico e semiautomatico
- Macchine CNC multi pallet
- Presse
- Tecnologie di saldatura: FSW-TIG- MIG certificate UNI EN 15085-2 Classe 2 e EN ISO 3834-3
- Forni CAB
- Macchine per guarnizioni in polimeri bicomponenti
- Sistemi di lavaggio ad ultrasuoni

Oltre a qualsiasi tipo di lavorazione meccanica, grazie al proprio impianto di ossidazione, Mecc.Al offre la possibilità delle seguenti finiture superficiali:

- Anodizzazione (nera o con colore a richiesta)
- Passivazione
- Burattatura
- Grezzo
- Sabbiatura
- Verniciatura

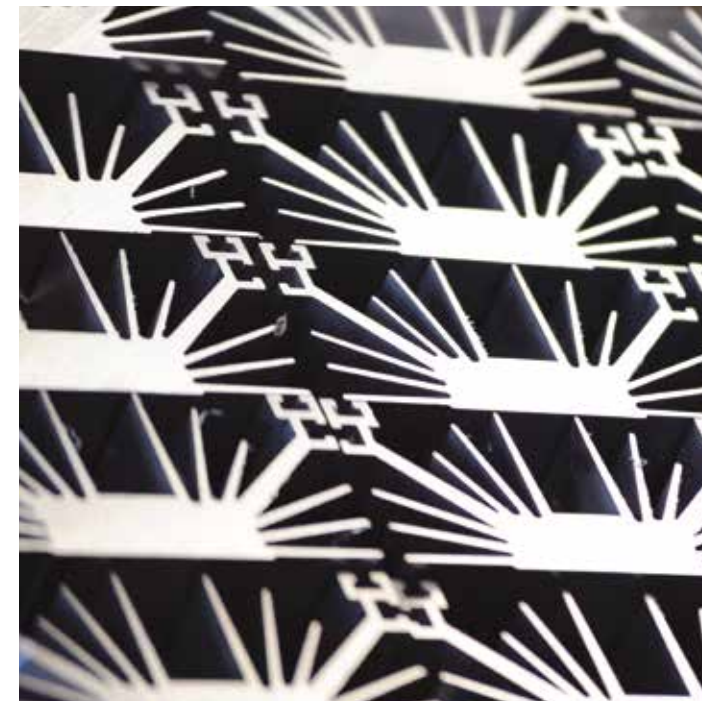
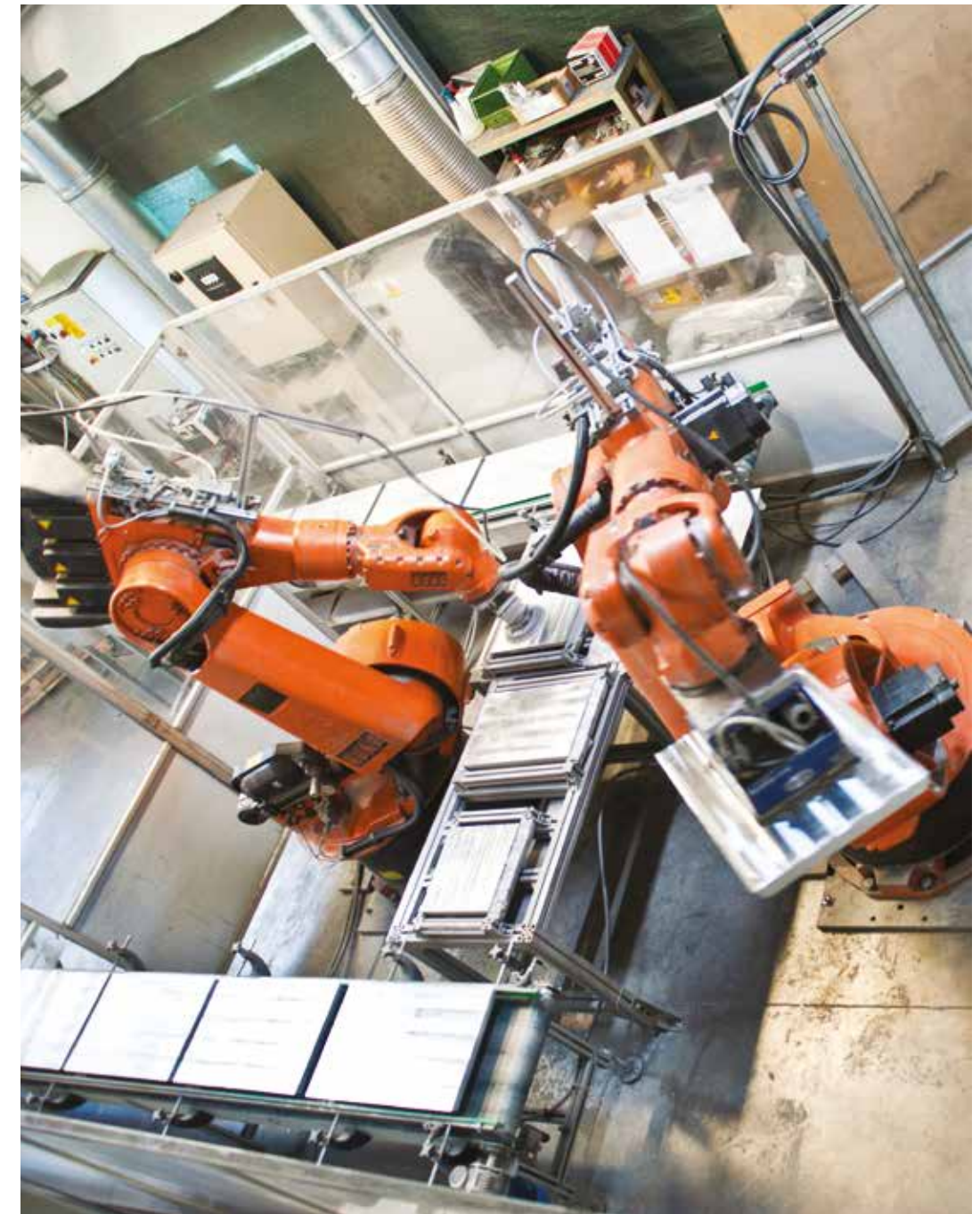
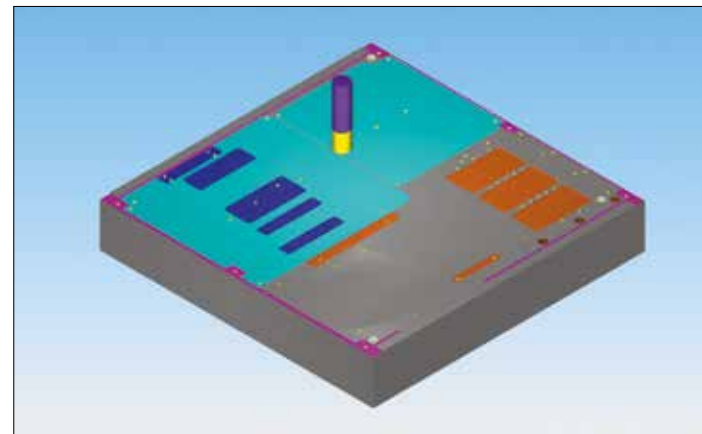
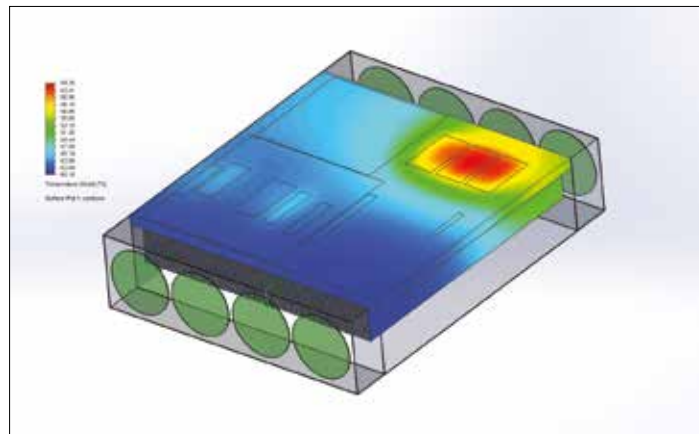
Equipped with the most modern technologies, with a warehouse provided by more than 600 different extruded profiles, slabs of various alloys and coils of different thicknesses available on stock, adopting manufacturing processes supported by several multi pallet computer numerical controlled machines, **Mecc.Al** is able to manage orders for small and large quantities always providing the highest quality and timeliness deliveries. Thanks to the latest CAD/CAM design software, SolidCAM of SolidWorks, we can also provide effective solutions to complex projects, guaranteeing the full compliance to customer specifications from the very first stage of product design. The Quality Control is also supported by the use of 3-D Measuring machines and Height gauge machine.

The following technologies are available in our manufacturing plants:

- Automatic and semi-automating cutting machines
- Multi pallets CNC machines
- Presses
- Welding technologies: FSW-TIG-MIG certified UNI EN 15085-2 Class 2 e EN ISO 3834-3
- CAB ovens
- Polymer Sealing Machines
- Ultrasound washing systems

Besides to every kind of mechanical machining, through own anodizing plant, Mecc.Al offers the possibility of the following finishing surfaces:

- Black or coloured anodizing
- Passivation - Chromate conversion coating
- Barrel finishing
- Raw
- Sandblasting
- Painting



Il Prodotto The Product



Estruso
Extruded heat sink



Saldato
Welded heat sink



Sistema a molla
Clip system



Alta efficienza
High performance heat sink



Profilmecc
Profilmecc



ProfilmeccPlus
ProfilmeccPlus



Alette brasate
Brazen fins heat sink



Alette resinate
Bonded fins heat sink



Il prodotto

The product

1



Estruso

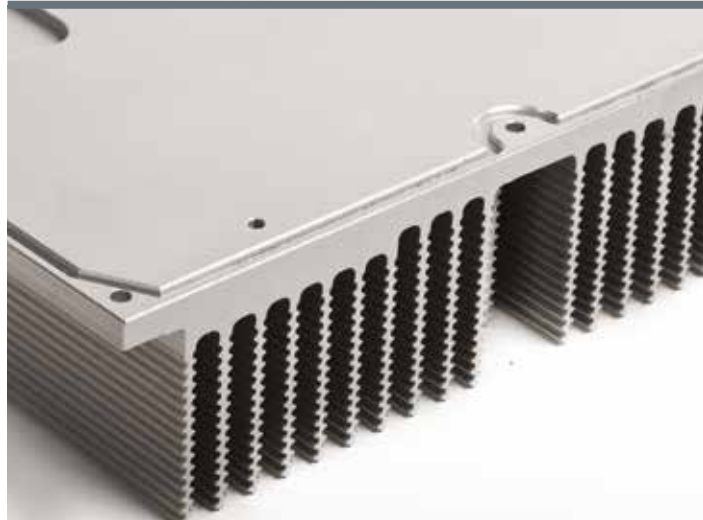
Extruded heat sink

Il processo di estrusione dell'alluminio permette di ottenere profili di infinite forme anche complesse. Variando la forma del profilo, cambia la superficie di contatto con l'aria e di conseguenza la capacità di dissipazione. I prodotti estrusi sono generalmente utilizzati in sistemi di media potenza sia in convezione naturale che forzata.

I dissipatori estrusi vengono presentati suddivisi per forma (E, K, L, H, T, U, P pettine e PC pettine e coperchio), larghezza ed altezza, ed organizzati in ordine crescente di dimensioni. Ad esempio, **P400 40** sta ad indicare un dissipatore estruso a forma di Pettine, largo 400 mm e alto 40 mm.

The aluminium extrusion process allows to make innumerable shapes profiles. By modifying the shape of the profile, the surface in contact with air changes and consequently the dissipation capability does. The extruded heat sinks are generally used in medium electric power systems both in natural and forced convection. The extruded heat sinks are presented divided by shape (E, K, L, H, T, U, P flat back and PC flat back with cover), width and height, and shown in increasing order of size. For example, **P400 40** indicates an extruded heat sink having a flat back shape (P), 400 mm wide and 40 mm high.

2



Saldato

Welded heat sink

Per ottenere profili di dimensioni elevate non realizzabili direttamente con l'estrusione, si possono saldare tra loro due o più profili estrusi. La saldatura è estremamente flessibile alle esigenze dimensionali del cliente e utilizzabile per qualsiasi modifica a profili già esistenti. **Mecc.AI** mette a disposizione appositi profili estrusi già smussati per una più efficiente operazione di saldatura TIG e MIG, oltre alla tecnologia all'avanguardia FSW su macchine dedicate che evita l'aggiunta di materiale di saldatura sul dissipatore. Processo certificato UNI EN 15085-2 Classe 2 e EN ISO 3834-3.

To obtain wider profiles than the ones achievable by extrusion process, it is possible to join together two or more extruded profiles through welding process. This process is extremely flexible to dimensional customer requirements and serviceable for any modification on existing extruded profiles. **Mecc.AI** provides already bevelled profiles for a higher efficient TIG and MIG welding operation, in addition to the FSW technology on dedicated machines which avoids additional welding material into the heat sink. Welding process certified UNI EN 15085-2 Class 2 e EN ISO 3834-3.

3



Sistema a molla

Clip system

Il sistema a molla, combinazione di dissipatore e molla di fissaggio, viene particolarmente utilizzato nelle schede elettroniche PCB per il raffreddamento dei package TO-220, TO-247 e similari.

Analogamente al tradizionale sistema di fissaggio a vite, il sistema di assemblaggio a molla offre le stesse prestazioni di scambio di calore tra dissipatore e componente elettronico con notevoli vantaggi in termini tecnici e di produttività.

Oltre a fornire una pressione omogenea e misurata al centro del dispositivo a semiconduttore, i sistemi a molla semplificano notevolmente sia la fase di primo assemblaggio che quella di smontaggio e rimontaggio in seguito a manutenzioni.

The clip system, combination of heat sink and clamping clip, is particularly used in PCB electronic circuit boards for the cooling of TO-220, TO-247 and similar packages. Like the conventional screw assembled system, the clip system offers the same performance of heat exchange between heat sink and the electronic device with considerable technical and productivity advantages. In addition to providing an evenly and measured pressure at the center of the semiconductor device, the clip systems greatly simplify both the first phase of assembly and the disassembly-reassembly during maintenance.

4



Alta efficienza

High performance heat sink

Questa linea di prodotti nasce dalla continua e crescente esigenza di fornire dissipatori dalle prestazioni termiche sempre maggiori. Per raggiungere questo obiettivo, abbiamo lavorato sulla sezione della singola aletta, sul numero di alette e sulla loro disposizione. Ottenuti assemblando meccanicamente le singole alette, i dissipatori ad alta efficienza offrono inoltre una elevata flessibilità dimensionale e stesse caratteristiche meccaniche dei dissipatori estrusi, rendendoli particolarmente adatti per l'utilizzo in sistemi ad alta potenza in convezione forzata.

Definiti Profili Assemblati (PA) sono suddivisi per larghezza ed altezza del singolo profilo aletta o modulo ed organizzati in ordine crescente di dimensioni.

The high efficiency heat sinks series born from the continuous and growing need to have heat sinks with higher thermal performances. To reach that purpose, we worked on every single fin section, on fins number and on their layout on the sink. Got by assembling the single fins mechanically, the high performance heat sinks provide an high dimensional flexibility together with the good mechanical characteristics of the extruded heat sinks.

The high performance heat sinks are mostly used in high electric power systems in forced convection. The Assembled Profiles (PA) are divided by width and height of the single fin or module and shown in increasing order of size.

Il prodotto The product

5



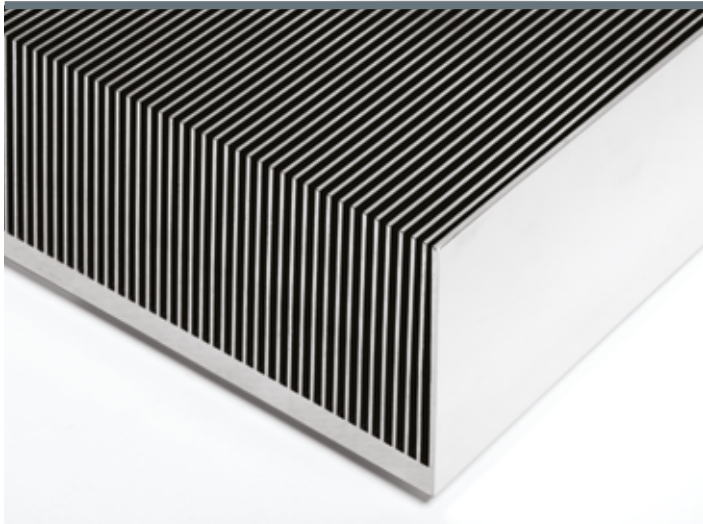
Profilmecc

Profilmecc

Le ultime nate in casa **Mecc.AI**. Due linee di prodotto totalmente innovative: dissipatori completamente custom con allo stesso tempo tutte le caratteristiche di una soluzione standard. Realizzati tramite l'assemblaggio meccanico di base ed alette o in versione monolitica con l'utilizzo di tecnologie esclusive e brevettate **Profilmecc** e **ProfilmeccPlus** garantiscono performance termiche superiori e caratteristiche meccaniche di assoluta eccellenza.

The latest new technologies made available by **Mecc.AI**. Completely innovative production lines: totally custom made heat sinks but at the same time with the standard solutions specifications. Made through mechanical assembling of base and fins or in monolithic version, utilizing an exclusive and patented technology, **Profilmecc** and **ProfilmeccPlus** guarantee superior thermal performances and mechanical specifications of unequivocal excellence.

6



ProfilmeccPlus

ProfilmeccPlus

7



Alette brasate

Brazed fins heat sink

Una linea di prodotto di dissipatori ad aria orientata alla soddisfazione di esigenze completamente custom per ogni singolo progetto che utilizza la tecnologia di brasatura per ottenere innumerevoli soluzioni di profili, utilizzando leghe diverse dipendentemente dalle esigenze del progetto stesso e senza dovere sottostare ai vincoli classici dei profili estrusi: nuove matrici di estrusione, limiti dimensionali, tempi di consegna, MOQ. Massima flessibilità e rapidità di risposta per prototipi e produzioni di serie è quello che **Mecc.AI** offre con questa linea.

A product line of air cooled heat sink fully oriented to the satisfaction of 100% customized projects, adopting the brazing technology to build an endless number of profiles and solutions, using different alloys depending on the requirements of the project itself and without being forced to submit the constraints typical of the extruded profiles: new extrusion dies, size limits, delivery time, MOQ. Maximum flexibility and fast responses for prototypes and serial production is what **Mecc.AI** offers with this line.

8



Alette resinate

Bonded fins heat sink

Il dissipatore ad alette resinate è ottenuto assemblando la base del dissipatore e le alette attraverso l'utilizzo di resina epossidica ad alta conducibilità termica. Studiati per applicazioni in convezione forzata, questa famiglia di dissipatori offre prestazioni termiche elevate insieme alla migliore flessibilità dimensionale. Ottenuti da piatti e laminati prodotti internamente al nostro gruppo industriale, i dissipatori resinati non necessitano di particolari matrici di estrusione ed offrono la possibilità di combinare diversi materiali quali rame e alluminio.

The bounded fins heat sink is obtained by assembling the base of the heat sink and the fins using high thermal conductivity epoxy. Designed for forced convection applications, this family of heat sinks offers high thermal performance along with the best dimensional flexibility. Obtained from metal plates and sheets made in our industrial group, bounded fins heat sinks do not require dedicated extrusion tool and offer the possibility of combining different materials such as copper and aluminum.

Materiale e lavorazioni meccaniche

La leggerezza ($2,7 \text{ g/cm}^3$), la conducibilità termica ($220 \text{ W/m}\cdot\text{K}$) e l'elevata lavorabilità sono le proprietà principali che rendono l'alluminio il metallo adatto alla fabbricazione dei nostri sistemi di dissipazione termica. Salvo diversa indicazione, le caratteristiche dei profili estrusi utilizzati sono le seguenti:

- Composizione chimica: Lega Alluminio EN AW-6060, 6061, 6063 or 6082, secondo la norma europea EN 573-3
- Caratteristiche meccaniche: T5 o T6, secondo norma la norma europea EN 755-2
- Tolleranze dimensionali e di forma secondo la norma europea EN 755-9.

Se non diversamente specificato a disegno e accordato col cliente, i prodotti sono lavorati meccanicamente in rispetto alle tolleranze generali specificate nella norma ISO 2768-mK. Tuttavia, salvo indicazione contraria, i pezzi non conformi alle tolleranze generali prescritte non devono essere automaticamente rifiutati quando la funzionalità del pezzo non risulta compromessa.

Prodotti speciali

Mecc.AI produce e commercializza supporti meccanici in alluminio per l'industria elettronica quali:

- Barre commerciali estruse (barre piatte, angolari, barre quadrate e profilati a L e ad U)
- Scatole e contenitori estrusi
- Scatole per alta frequenza ottenute da blocchetti pieni in alluminio.

Material and mechanical machining

The lightness ($2,7 \text{ g/cm}^3$), the thermal conductivity ($220 \text{ W/m}\cdot\text{K}$) and the malleability are the main properties making aluminium the most suitable metal for our heat dissipation systems. If not otherwise stated, the characteristics of used extruded profiles are:

- Chemistry composition: Aluminium Alloy EN AW-6060, 6061, 6063 or 6082, according to EN 573-3 European regulation
- Mechanical characteristic: T5 or T6, according to EN 755-2 European regulation
- Tolerances on dimensions and form according to EN755-9 European regulation.

If not specified on drawing and agreed with customer, the heat sinks are machined according to general tolerances indicated on ISO 2768-mK international regulation.

However, if not otherwise stated, not comply pieces to above general tolerances should not automatically be refused when their functionality is not compromised.

Special products

Mecc.AI manufactures and supplies the following mechanical supports for electronic industry:

- Extruded commercial profiles (flat bars, angles, square bars, L and U profiles)
- Extruded boxes and cases
- Enclosures for high frequency technology made from a full aluminium profile.



Informazioni tecniche Technical information

Come scegliere un dissipatore

L'impiego di un dissipatore di calore in un sistema elettronico, favorendo la trasmissione termica fra dispositivo e ambiente, porta ad una riduzione della resistenza termica dell'intero sistema, permettendo di diminuire la temperatura raggiunta dal dispositivo elettronico a parità di potenza dissipata oppure, sfruttando la massima temperatura di lavoro, di disporre di una potenza dissipabile più elevata.

Le prestazioni di un dissipatore si misurano con la sua resistenza termica $R_{TH}[K/W]$ fornita dal costruttore che tiene conto della trasmissione di calore per convezione ed irraggiamento dal dissipatore all'ambiente circostante più freddo.

La resistenza termica di un dissipatore dipende da diversi fattori quali materiale utilizzato (conducibilità termica), forma e dimensioni, colore e finitura superficiale (efficienza di irraggiamento e resistenza di contatto), condizioni di ventilazione e di montaggio (convezione naturale o forzata). Minore è la resistenza termica, e migliori sono le prestazioni di un dissipatore.

Conoscendo la temperatura ambientale T_a , la potenza massima dissipata dal dispositivo P_d , la sua resistenza termica giunzione-contenitore R_{THje} e la temperatura massima consentita T_j , la massima resistenza termica

How to select a heat sink

A heat sink in an electronic system, by enhancing the heat dissipation from the electronic device (hot surface) to the colder surrounding environment, allows to decrease the thermal resistance of the whole system and therefore the temperature achieved by the device is lower. In the same way, by fixing the maximum device working temperature, a heat sink allows to dissipate a higher power.

The performance of a heat sink is related to its thermal resistance $R_{TH}[K/W]$ provided by the manufacturer's datasheet, that takes in account of the convection and radiation heat transferring from the heat sink to the surrounding environment. The thermal resistance depends on different factors: material (thermal conductivity), shape and size, colour and surface finishing (radiation efficiency and contact resistance), convection power and heat sink mounting position (natural or forced convection).

To a smaller thermal resistance corresponds a better heat sink performance. By knowing the ambient temperature T_a , the power to be dissipate from the electronic device P_d , its junction to case thermal resistance R_{THje} and maximum allowable temperature T_j , it is possible to calculate the maximum allowable

Informazioni tecniche

Technical information

ca del dissipatore richiesta da progetto è calcolabile come

$$R_{TH} = \frac{T_j - T_a}{P_d} - R_{THje} - R_{THch}$$

Dove R_{THch} è la resistenza termica tra il contenitore del dispositivo elettronico e dissipatore, dipendente dal materiale usato all'interfaccia per omogeneizzare la superficie di contatto (usualmente grasso di silicone). Occorre quindi scegliere da catalogo un dissipatore con una resistenza termica uguale o inferiore a quella calcolata.

Condizioni di misura della resistenza termica
Nel presente catalogo i dissipatori sono presentati ordinati per forma e dimensioni espresse in millimetri. Per ogni profilo, sono riportati i seguenti parametri:

- Kg/mt: Peso in chilogrammi del profilo per unità di lunghezza (metro)
- L: Lunghezza in millimetri del dissipatore fissata per il calcolo della resistenza termica indicata
- W: Larghezza in millimetri del dissipatore fissata per il calcolo della resistenza termica indicata (solo per i dissipatori assemblati ad **Alta Efficienza**)
- $R_{TH,N}$: Resistenza termica in convezione naturale espressa in K/W con sopraelevazione di temperatura di 70°C (temperatura ambiente 25°C)
- $R_{TH,F}$: Resistenza termica in convezione forzata espressa in K/W con velocità dell'aria pari a 3 m/s e sopraelevazione di temperatura di 50°C (temperatura ambiente 25°C). Per flussi d'aria a diverse velocità, fare riferimento al grafico **"Air Speed Correction Factor"** per la determinazione del fattore di moltiplicazione da applicare alla resistenza termica indicata. Per le linee di prodotto **Profilmecc & ProfilmeccPlus** e **Alette Brasate**, è rappresentata la curva di resistenza termica in convezione forzata al variare del flusso d'aria per lunghezze determinate.

I valori di resistenza termica riportati derivano da prove effettuate in laboratorio a temperatura controllata in condizioni verosimili a quelle riscontrate nella realtà. In particolare:

- Sorgente di calore uniformemente distribuita sul 50% circa della superficie di montaggio e posta al centro del dissipatore con interposizione di grasso di silicone
- Temperatura misurata sulla superficie del dissipatore nelle immediate vicinanze della sorgente di calore attraverso termocoppie a bassa inerzia termica
- In convezione naturale, dissipatore disposto nella condizione di massima efficienza con alettatura verticale

Per il montaggio orizzontale, occorre considerare un aumento di $R_{TH,N}$ del 20% circa

- Superficie del dissipatore non trattata.

heat sink thermal resistance value as

$$R_{TH} = \frac{T_j - T_a}{P_d} - R_{THje} - R_{THch}$$

Where R_{THch} is the case to heat sink thermal resistance, depending on thermal resistivity of the material used within the interface case-heat sink for getting an homogeneous contact surface (usually, silicone grease). Therefore it is necessary to select on the catalogue a heat sink having a thermal resistance value equal or less than the calculated one.

Measurement of thermal resistance
In the catalogue, the heat sinks are shown divided for type of product and shape, in increasing order by size (in millimetres). For each profile, the following parameters are indicated:

- Kg/mt: Profile weight (kilograms per metre)
- L: Heat sink length in millimetres, fixed in order to calculate the shown thermal resistance
- W: Heat sink width in millimetres, fixed in order to calculate the shown thermal resistance (only for **High Performance heat sink**)
- $R_{TH,N}$: Thermal resistance [K/W] in natural convection calculated at 70°C sink to ambient temperature difference (25°C ambient temperature)
- $R_{TH,F}$: Thermal resistance [K/W] in forced convection calculated at 3 m/s air speed and a 50°C sink to ambient temperature difference (25°C ambient temperature). For different air flow speed, refer to **"Air Speed Correction Factor"** graph to calculate the multiplication factor to apply to the given thermal resistance. For **Profilmecc & ProfilmeccPlus** and **Brazed fins heat sink** product lines, it's showed the thermal resistance in forced convection graph by varying the air flow at specific heat sink lengths.

The thermal resistance values come from tests made at **Mecc.AL** air conditioned laboratory with following conditions:

- Heat source evenly distributed over approximately 50% of the mounting surface and placed in the middle of the heat sink through silicone grease within the interface
- Temperature measured on the heat sink surface under the heat source through miniaturized thermocouples
- In natural convection tests, fins are vertically arranged. In horizontal use, the thermal resistance value $R_{TH,N}$ has to be increased by around 20%
- Raw surface heat sink. For black anodized heat sink surface in natural convection,

Per il particolare anodizzato nero in convezione naturale, il valore della resistenza termica $R_{TH,N}$ va diminuito del 10% circa

- All'aumentare della lunghezza del dissipatore la resistenza termica diminuisce con legge non lineare. I valori delle resistenze termiche sono relative ai valori di lunghezza indicati; Per diverse lunghezze, fare riferimento al grafico **"Length Correction Factor"** per il calcolo del fattore di moltiplicazione da applicare alla resistenza termica indicata nel profilo, sia in convezione naturale che forzata
- Per i dissipatori ad **Alta efficienza**, sono riportati i valori di resistenza termica di assemblati di larghezza (W) di circa 100 mm. Al variare della larghezza del dissipatore, la curva della resistenza termica può essere approssimata in maniera lineare, e dunque raddoppiando la larghezza del dissipatore, la resistenza termica si dimezza.

I dati riportati nel presente catalogo derivano da prove di laboratorio e simulazioni effettuate in modo accurato e pertanto sono da considerare affidabili. Tuttavia, poiché le condizioni reali di utilizzo possono essere diverse da quelle di laboratorio, si consiglia di eseguire una verifica pratica nelle condizioni in cui il dissipatore verrà utilizzato.

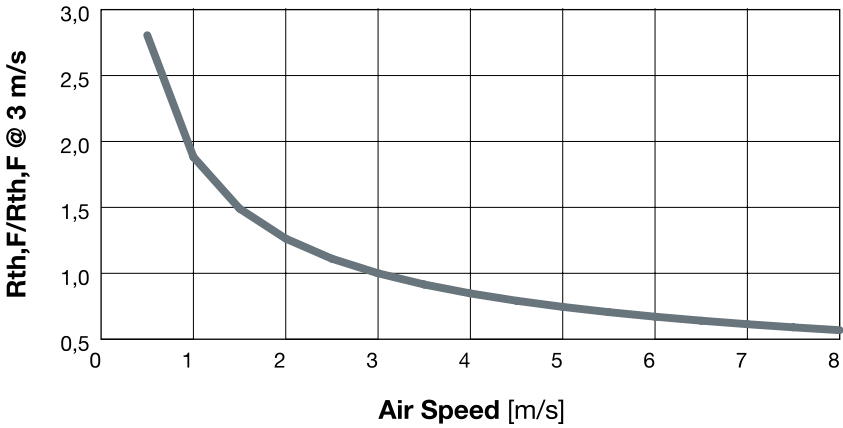
the thermal resistance value $R_{TH,N}$ has to be decreased by around 10%

- The thermal resistance decreases with a non-linear law by increasing the heat sink length. The thermal resistances values are related to the indicated profile length; For different lengths, it is necessary to multiply the given thermal resistance value by the appropriate factor provided by **"Length Correction Factor"** graph, for both natural and forced convection cooling
- For assembled **High Performance heat sinks**, the thermal resistances have been calculated for an around 100 mm wide piece (W). Varying the heat sink width, the thermal resistance value can be approximated with a linear law, that is by doubling the heat sink width, the thermal resistance is halved.

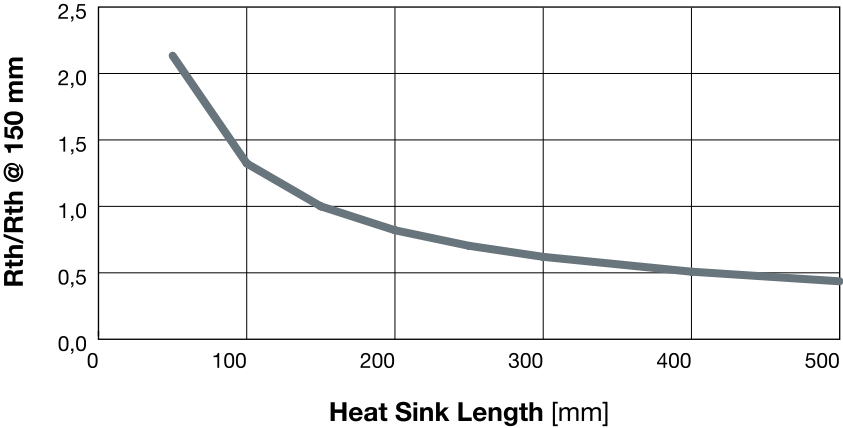
The technical data listed on this catalogue come from thermal simulations and laboratory tests run in an accurate way, so that they have to be considered as reliable. However, taking into account that the heat sink working conditions of any customized application could be different from the laboratory ones, we suggest to perform a thermal test with the same final application conditions.



Air speed correction factor



Length correction factor



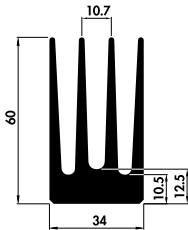


Estruso
Extruded heat sink



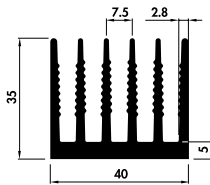
Estruso

Extruded heat sink



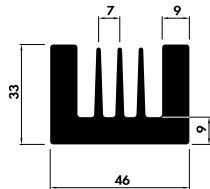
P34 60

Kg/mt: 2,82
L: 50 mm
Rth,N: 3,36 K/W
Rth,F: 1,136 K/W



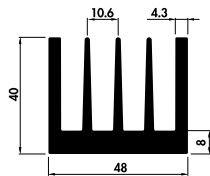
P40 35

Kg/mt: 1,73
L: 50 mm
Rth,N: 3,35 K/W
Rth,F: 1,131 K/W



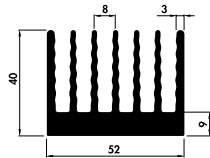
P46 33

Kg/mt: 2,70
L: 50 mm
Rth,N: 4,21 K/W
Rth,F: 1,421 K/W



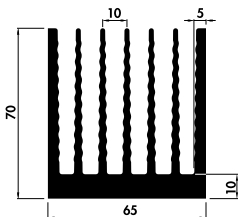
P48 40

Kg/mt: 2,45
L: 50 mm
Rth,N: 3,57 K/W
Rth,F: 1,206 K/W



P52 40

Kg/mt: 2,79
L: 50 mm
Rth,N: 2,99 K/W
Rth,F: 1,009 K/W

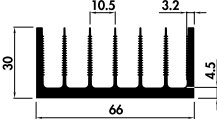


P65 70

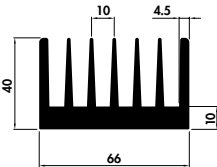
Kg/mt: 5,44
L: 100 mm
Rth,N: 1,23 K/W
Rth,F: 0,415 K/W



P66 30

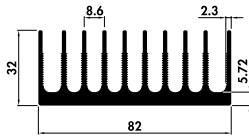


Kg/mt: 1,77
L: 100 mm
Rth,N: 1,75 K/W
Rth,F: 0,590 K/W



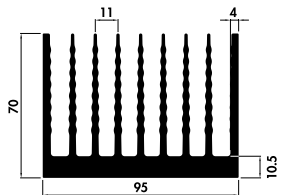
P66 40

Kg/mt: 3,47
L: 100 mm
Rth,N: 1,76 K/W
Rth,F: 0,594 K/W



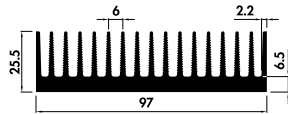
P82 32

Kg/mt: 2,87
L: 100 mm
Rth,N: 1,54 K/W
Rth,F: 0,519 K/W



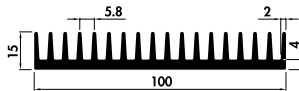
P95 70

Kg/mt: 7,25
L: 100 mm
Rth,N: 1,03 K/W
Rth,F: 0,350 K/W



P97 25

Kg/mt: 3,40
L: 100 mm
Rth,N: 1,25 K/W
Rth,F: 0,423 K/W

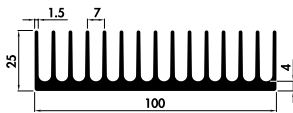


P100 15

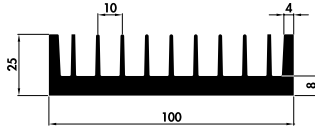
Kg/mt: 2,16
L: 100 mm
Rth,N: 1,80 K/W
Rth,F: 0,610 K/W



P100 25

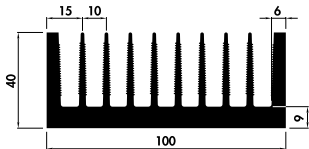


Kg/mt: 2,66
L: 100 mm
Rth,N: 1,43 K/W
Rth,F: 0,484 K/W



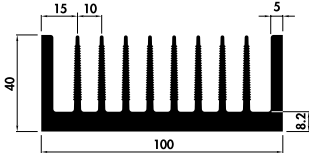
P100 25B

Kg/mt: 3,32
L: 100 mm
Rth,N: 1,79 K/W
Rth,F: 0,605 K/W



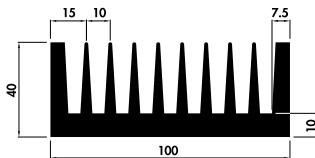
P100 40

Kg/mt: 5,12
L: 100 mm
Rth,N: 1,19 K/W
Rth,F: 0,401 K/W



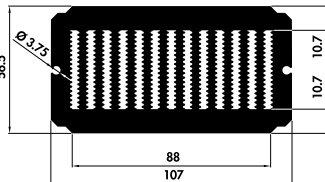
P100 40A

Kg/mt: 4,88
L: 100 mm
Rth,N: 1,24 K/W
Rth,F: 0,419 K/W



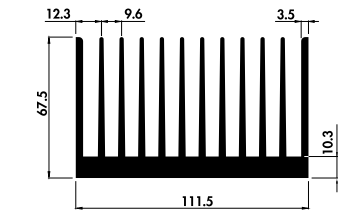
P100 40C

Kg/mt: 5,90
L: 100 mm
Rth,N: 1,44 K/W
Rth,F: 0,486 K/W



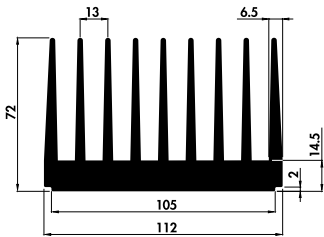
P107 56

Kg/mt: 12,00
L: 150 mm
Rth,N: 0,60 K/W
Rth,F: 0,204 K/W



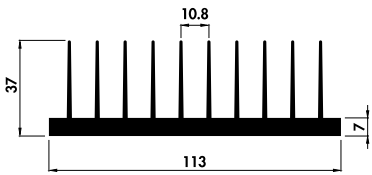
P112 68

Kg/mt: 8,42
L: 150 mm
Rth,N: 0,67 K/W
Rth,F: 0,226 K/W



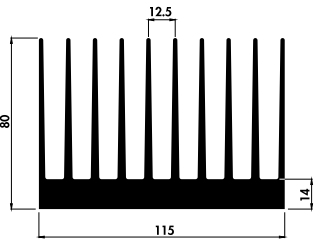
P112 72

Kg/mt: 9,81
L: 150 mm
Rth,N: 0,79 K/W
Rth,F: 0,266 K/W



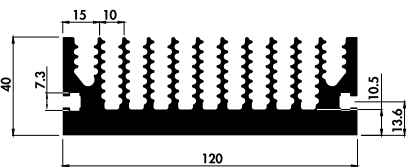
P113 37

Kg/mt: 3,43
L: 150 mm
Rth,N: 1,05 K/W
Rth,F: 0,355 K/W



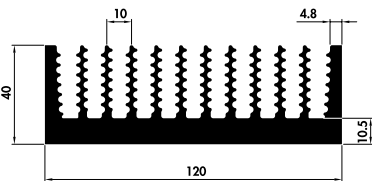
P115 80

Kg/mt: 9,52
L: 150 mm
Rth,N: 0,68 K/W
Rth,F: 0,230 K/W



P120 40

Kg/mt: 6,70
L: 150 mm
Rth,N: 0,83 K/W
Rth,F: 0,280 K/W



P120 40A

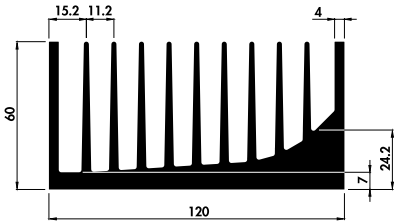
Kg/mt: 6,51
L: 150 mm
Rth,N: 0,83 K/W
Rth,F: 0,280 K/W

Estruso

Extruded heat sink

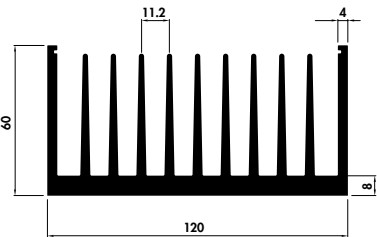
Estruso

Extruded heat sink



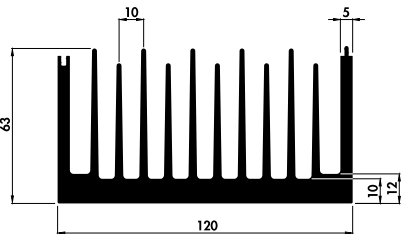
P120 60

Kg/mt: 8,37
L: 150 mm
Rth,N: 0,77 K/W
Rth,F: 0,261 K/W



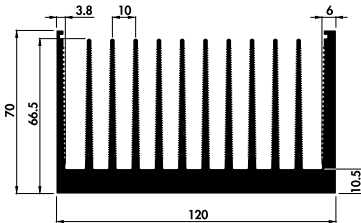
P120 60B

Kg/mt: 7,29
L: 150 mm
Rth,N: 0,76 K/W
Rth,F: 0,258 K/W



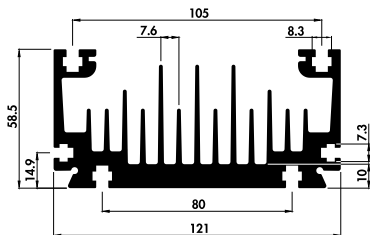
P120 63

Kg/mt: 8,39
L: 150 mm
Rth,N: 0,72 K/W
Rth,F: 0,243 K/W



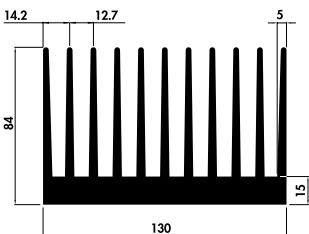
P120 70

Kg/mt: 8,96
L: 150 mm
Rth,N: 0,55 K/W
Rth,F: 0,185 K/W



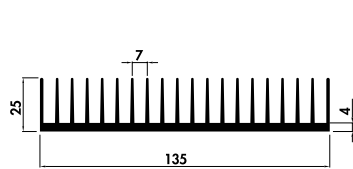
P121 58,5

Kg/mt: 7,13
L: 150 mm
Rth,N: 0,77 K/W
Rth,F: 0,260 K/W



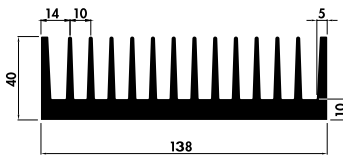
P130 84

Kg/mt: 13,44
L: 150 mm
Rth,N: 0,62 K/W
Rth,F: 0,210 K/W



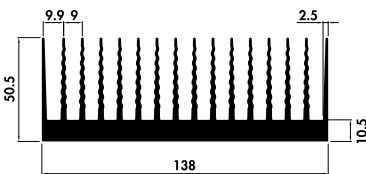
P135 25

Kg/mt: 3,25
L: 150 mm
Rth,N: 0,87 K/W
Rth,F: 0,293 K/W



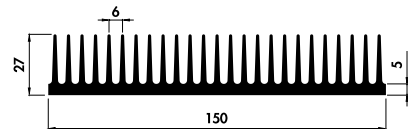
P138 40

Kg/mt: 7,29
L: 150 mm
Rth,N: 0,88 K/W
Rth,F: 0,299 K/W



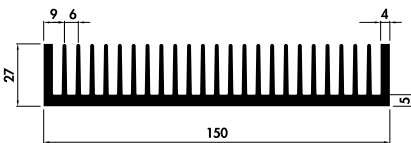
P138 50

Kg/mt: 7,55
L: 150 mm
Rth,N: 0,67 K/W
Rth,F: 0,228 K/W



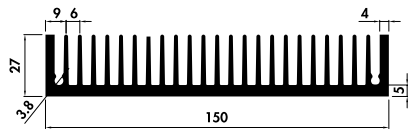
P150 27

Kg/mt: 5,17
L: 150 mm
Rth,N: 0,76 K/W
Rth,F: 0,256 K/W



P150 27A

Kg/mt: 5,27
L: 150 mm
Rth,N: 0,74 K/W
Rth,F: 0,251 K/W

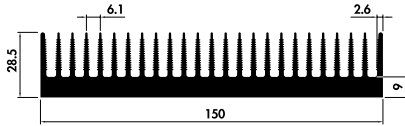


P150 27AF

Kg/mt: 5,29
L: 150 mm
Rth,N: 0,74 K/W
Rth,F: 0,251 K/W

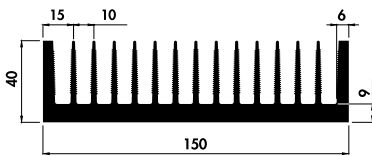
Estruso

Extruded heat sink



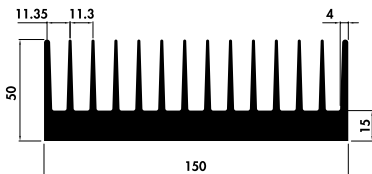
P150 28

Kg/mt: 6,29
L: 150 mm
Rth,N: 0,66 K/W
Rth,F: 0,223 K/W



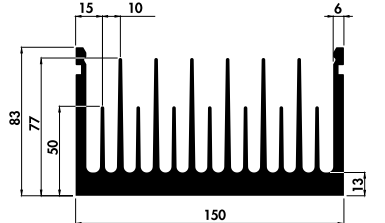
P150 40

Kg/mt: 7,42
L: 150 mm
Rth,N: 0,68 K/W
Rth,F: 0,299 K/W



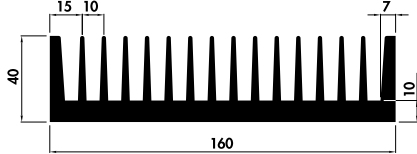
P150 50

Kg/mt: 9,58
L: 150 mm
Rth,N: 0,78 K/W
Rth,F: 0,265 K/W



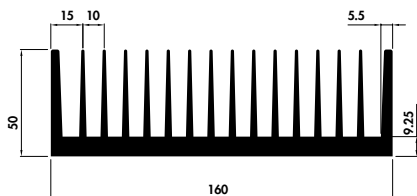
P150 83

Kg/mt: 12,33
L: 150 mm
Rth,N: 0,61 K/W
Rth,F: 0,205 K/W



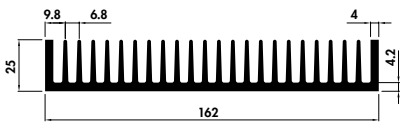
P160 40

Kg/mt: 8,64
L: 200 mm
Rth,N: 0,64 K/W
Rth,F: 0,218 K/W



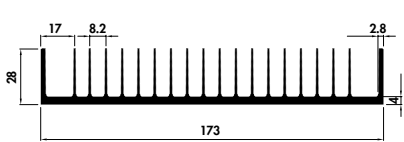
P160 50

Kg/mt: 8,86
L: 200 mm
Rth,N: 0,55 K/W
Rth,F: 0,184 K/W



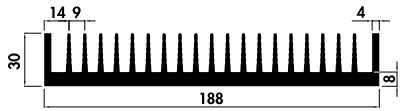
P162 25

Kg/mt: 5,23
L: 200 mm
Rth,N: 0,64 K/W
Rth,F: 0,216 K/W



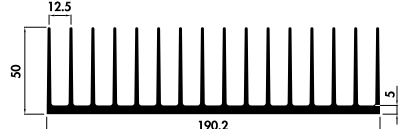
P173 28

Kg/mt: 4,22
L: 200 mm
Rth,N: 0,44 K/W
Rth,F: 0,148 K/W



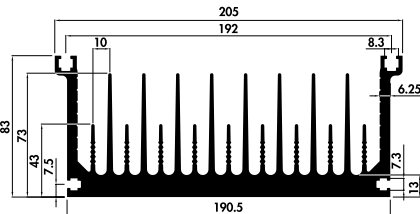
P188 30

Kg/mt: 7,36
L: 200 mm
Rth,N: 0,64 K/W
Rth,F: 0,216 K/W



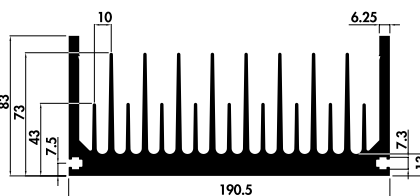
P190 50

Kg/mt: 6,87
L: 200 mm
Rth,N: 0,51 K/W
Rth,F: 0,171 K/W



P190 83

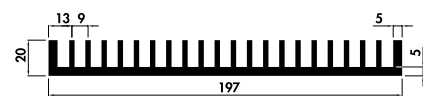
Kg/mt: 14,83
L: 200 mm
Rth,N: 0,43 K/W
Rth,F: 0,146 K/W



P190 83A

Kg/mt: 14,75
L: 200 mm
Rth,N: 0,45 K/W
Rth,F: 0,146 K/W





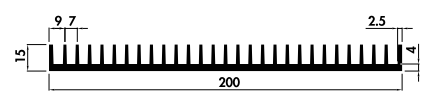
P197 20

Kg/mt: 5,50

L: 200 mm

Rth,N: 0,72 K/W

Rth,F: 0,244 K/W



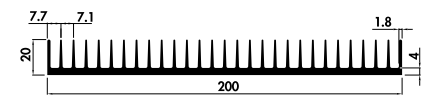
P200 15

Kg/mt: 3,90

L: 200 mm

Rth,N: 0,74 K/W

Rth,F: 0,250 K/W



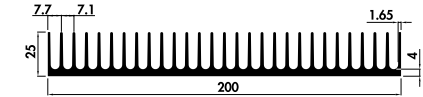
P200 20

Kg/mt: 4,07

L: 200 mm

Rth,N: 0,64 K/W

Rth,F: 0,216 K/W



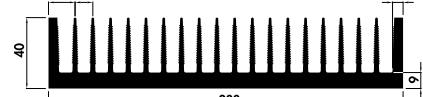
P200 25

Kg/mt: 5,38

L: 200 mm

Rth,N: 0,56 K/W

Rth,F: 0,190 K/W



P200 40

Kg/mt: 9,72

L: 200 mm

Rth,N: 0,46 K/W

Rth,F: 0,154 K/W



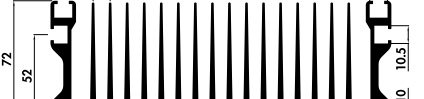
P200 60

Kg/mt: 15,16

L: 200 mm

Rth,N: 0,36 K/W

Rth,F: 0,121 K/W



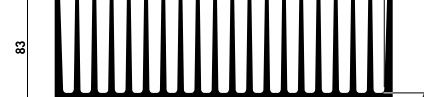
P200 72

Kg/mt: 14,53

L: 200 mm

Rth,N: 0,38 K/W

Rth,F: 0,130 K/W



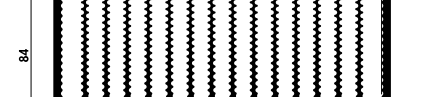
P200 83

Kg/mt: 19,90

L: 200 mm

Rth,N: 0,35 K/W

Rth,F: 0,119 K/W



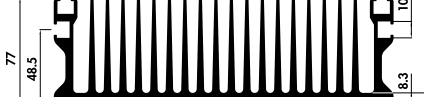
P200 84

Kg/mt: 17,74

L: 200 mm

Rth,N: 0,34 K/W

Rth,F: 0,113 K/W



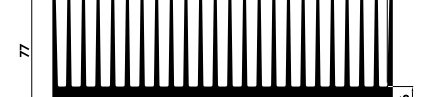
P215 77

Kg/mt: 22,15

L: 250 mm

Rth,N: 0,31 K/W

Rth,F: 0,104 K/W



P215 77A

Kg/mt: 19,80

L: 250 mm

Rth,N: 0,28 K/W

Rth,F: 0,096 K/W



P216 77

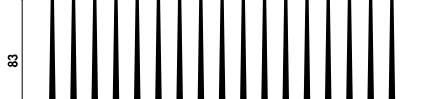
Kg/mt: 24,00

L: 250 mm

Rth,N: 0,31 K/W

Rth,F: 0,103 K/W





P216 83

Kg/mt: 18,07

L: 250 mm

Rth,N: 0,32 K/W

Rth,F: 0,110 K/W



P220 46

Kg/mt: 11,27

L: 250 mm

Rth,N: 0,39 K/W

Rth,F: 0,130 K/W



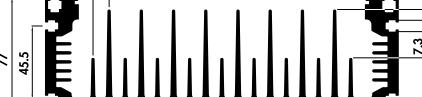
P220 60

Kg/mt: 17,27

L: 250 mm

Rth,N: 0,35 K/W

Rth,F: 0,118 K/W



P220 77

Kg/mt: 17,54

L: 250 mm

Rth,N: 0,36 K/W

Rth,F: 0,121 K/W



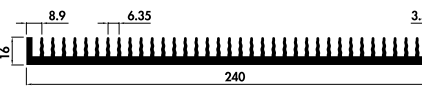
P235 60

Kg/mt: 14,76

L: 250 mm

Rth,N: 0,29 K/W

Rth,F: 0,098 K/W



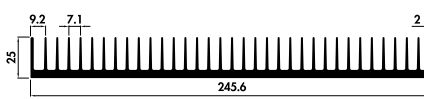
P240 16

Kg/mt: 5,57

L: 250 mm

Rth,N: 0,54 K/W

Rth,F: 0,184 K/W



P245 25

Kg/mt: 6,39

L: 250 mm

Rth,N: 0,43 K/W

Rth,F: 0,144 K/W



P250 40

Kg/mt: 11,94

L: 250 mm

Rth,N: 0,33 K/W

Rth,F: 0,113 K/W



P250 40A

Kg/mt: 9,66

L: 250 mm

Rth,N: 0,36 K/W

Rth,F: 0,123 K/W



P250 40C

Kg/mt: 10,97

L: 250 mm

Rth,N: 0,37 K/W

Rth,F: 0,124 K/W



P250 50

Kg/mt: 17,70

L: 250 mm

Rth,N: 0,38 K/W

Rth,F: 0,127 K/W



P250 83

Kg/mt: 24,68

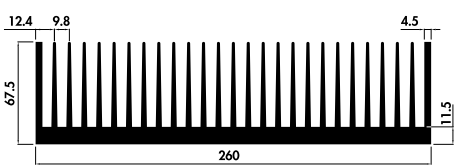
L: 250 mm

Rth,N: 0,29 K/W

Rth,F: 0,098 K/W

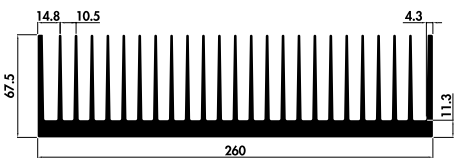
Estruso

Extruded heat sink



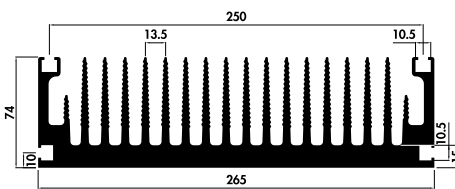
P260 67,5

Kg/mt: 20,68
L: 300 mm
Rth,N: 0,24 K/W
Rth,F: 0,081 K/W



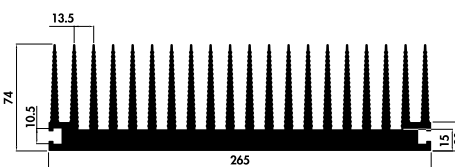
P260 67,5A

Kg/mt: 18,18
L: 300 mm
Rth,N: 0,25 K/W
Rth,F: 0,085 K/W



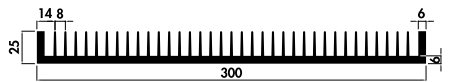
P265 74

Kg/mt: 24,92
L: 300 mm
Rth,N: 0,27 K/W
Rth,F: 0,091 K/W



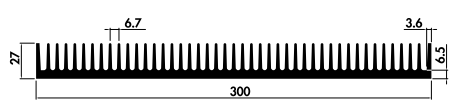
P265 74A

Kg/mt: 24,13
L: 300 mm
Rth,N: 0,27 K/W
Rth,F: 0,090 K/W



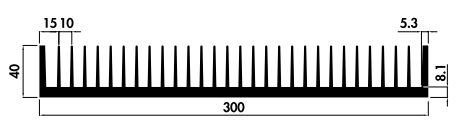
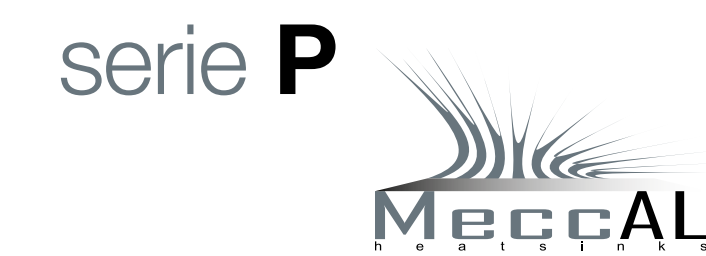
P300 25

Kg/mt: 9,01
L: 300 mm
Rth,N: 0,36 K/W
Rth,F: 0,121 K/W



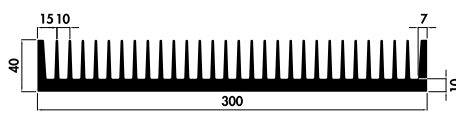
P300 27

Kg/mt: 11,90
L: 300 mm
Rth,N: 0,32 K/W
Rth,F: 0,108 K/W



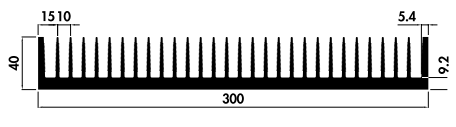
P300 40

Kg/mt: 13,02
L: 300 mm
Rth,N: 0,30 K/W
Rth,F: 0,103 K/W



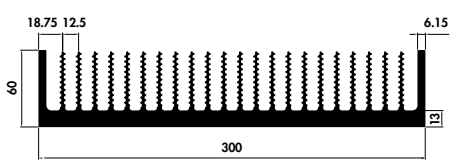
P300 40A

Kg/mt: 15,80
L: 300 mm
Rth,N: 0,32 K/W
Rth,F: 0,108 K/W



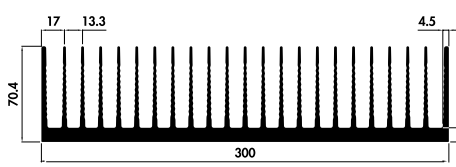
P300 40B

Kg/mt: 14,35
L: 300 mm
Rth,N: 0,26 K/W
Rth,F: 0,088 K/W



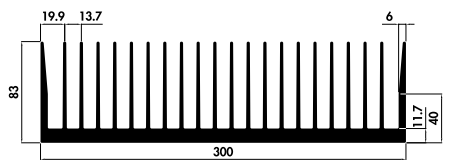
P300 60

Kg/mt: 20,53
L: 300 mm
Rth,N: 0,25 K/W
Rth,F: 0,083 K/W



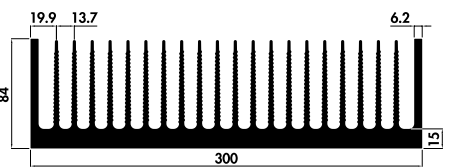
P300 70

Kg/mt: 18,77
L: 300 mm
Rth,N: 0,25 K/W
Rth,F: 0,084 K/W



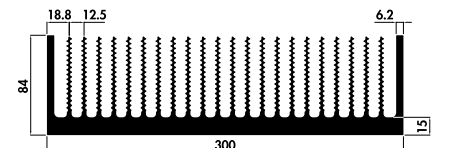
P300 83A

Kg/mt: 23,07
L: 300 mm
Rth,N: 0,23 K/W
Rth,F: 0,078 K/W



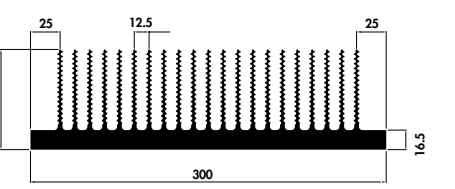
P300 84

Kg/mt: 28,44
L: 300 mm
Rth,N: 0,23 K/W
Rth,F: 0,078 K/W



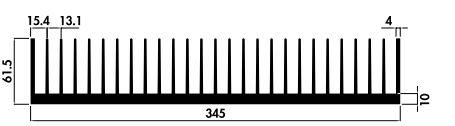
P300 84A

Kg/mt: 26,64
L: 300 mm
Rth,N: 0,19 K/W
Rth,F: 0,065 K/W



P300 84C

Kg/mt: 24,99
L: 300 mm
Rth,N: 0,20 K/W
Rth,F: 0,069 K/W

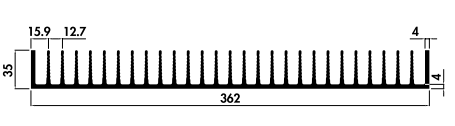


P345 61

Kg/mt: 20,07
L: 400 mm
Rth,N: 0,20 K/W
Rth,F: 0,067 K/W

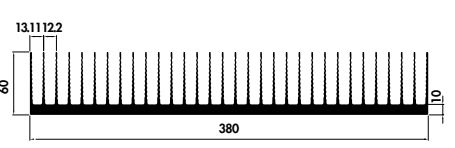
Estruso

Extruded heat sink



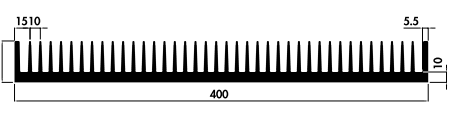
P362 35

Kg/mt: 11,13
L: 400 mm
Rth,N: 0,25 K/W
Rth,F: 0,085 K/W



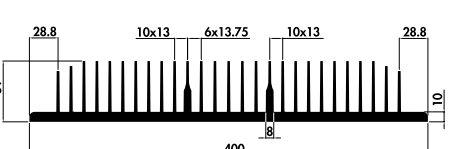
P380 60E

Kg/mt: 18,35
L: 400 mm
Rth,N: 0,18 K/W
Rth,F: 0,061 K/W



P400 40

Kg/mt: 21,44
L: 400 mm
Rth,N: 0,20 K/W
Rth,F: 0,069 K/W



P400 61

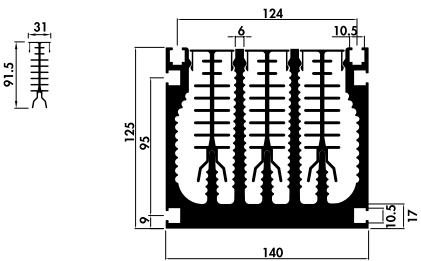
Kg/mt: 22,35
L: 400 mm
Rth,N: 0,20 K/W
Rth,F: 0,067 K/W



Estruso

Extruded heat sink

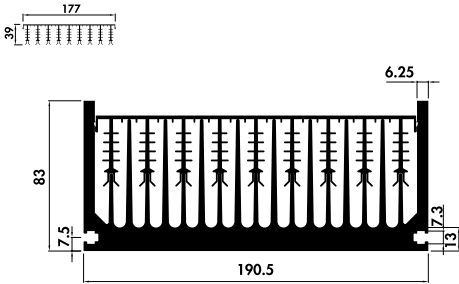
C31 91



PC140 125

Kg/mt: 22,90
L: 150 mm
Rth,N: 0,38 K/W
Rth,F: 0,128 K/W

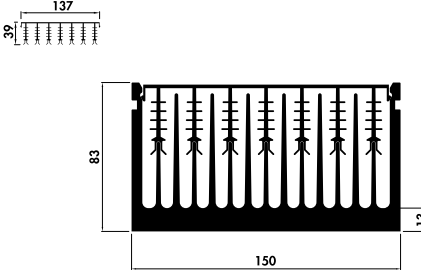
C178 39



PC190 83A

Kg/mt: 18,79
L: 200 mm
Rth,N: 0,29 K/W
Rth,F: 0,099 K/W

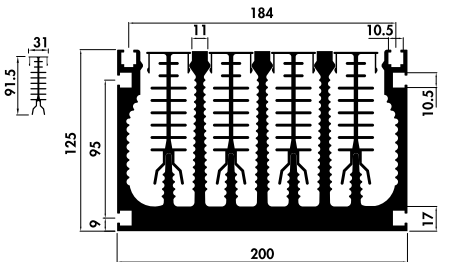
C137 39



PC150 83

Kg/mt: 15,42
L: 150 mm
Rth,N: 0,41 K/W
Rth,F: 0,139 K/W

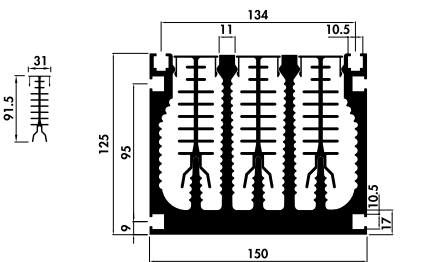
C31 91



PC200 125

Kg/mt: 30,80
L: 200 mm
Rth,N: 0,26 K/W
Rth,F: 0,088 K/W

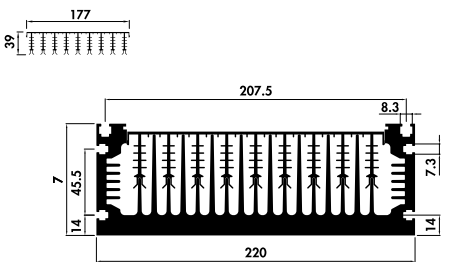
C31 91



PC150 125

Kg/mt: 23,77
L: 150 mm
Rth,N: 0,38 K/W
Rth,F: 0,128 K/W

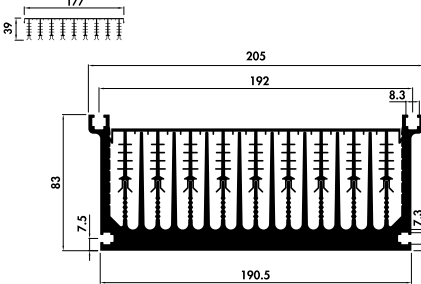
C178 39



PC220 77

Kg/mt: 21,57
L: 250 mm
Rth,N: 0,24 K/W
Rth,F: 0,082 K/W

C178 39



PC190 83

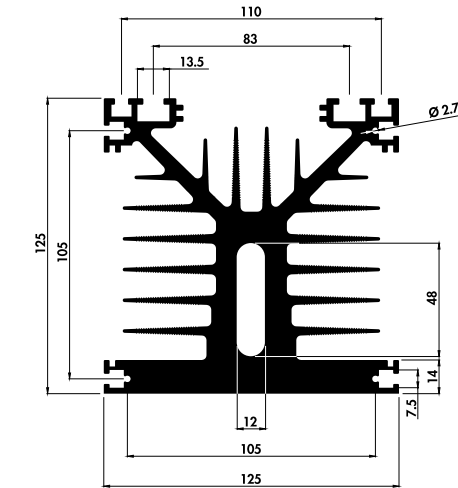
Kg/mt: 18,87
L: 200 mm
Rth,N: 0,29 K/W
Rth,F: 0,097 K/W

Estruso

Extruded heat sink

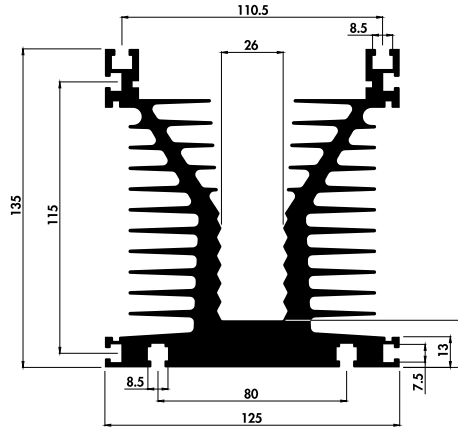
T125 125

Kg/mt: 15,53
L: 150 mm
Rth,N: 0,51 K/W
Rth,F: 0,174 K/W



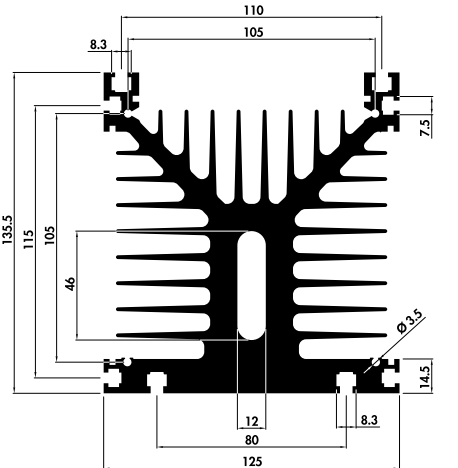
T125 135A

Kg/mt: 14,45
L: 150 mm
Rth,N: 0,54 K/W
Rth,F: 0,183 K/W



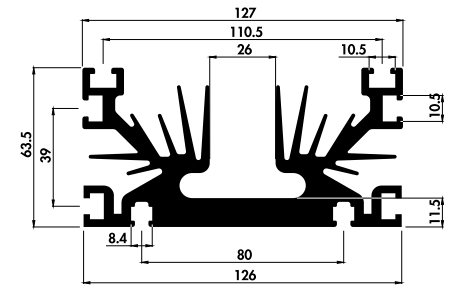
T125 135D

Kg/mt: 17,61
L: 150 mm
Rth,N: 0,50 K/W
Rth,F: 0,168 K/W



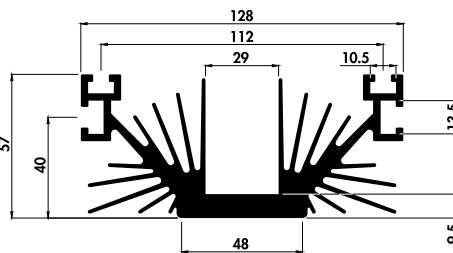
T126 63

Kg/mt: 8,21
L: 150 mm
Rth,N: 0,79 K/W
Rth,F: 0,267 K/W



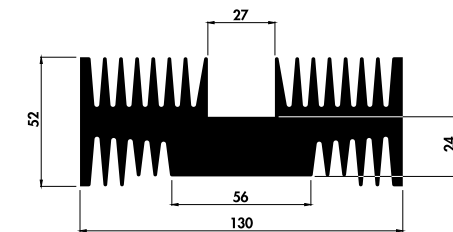
T128 57

Kg/mt: 5,95
L: 150 mm
Rth,N: 0,76 K/W
Rth,F: 0,257 K/W



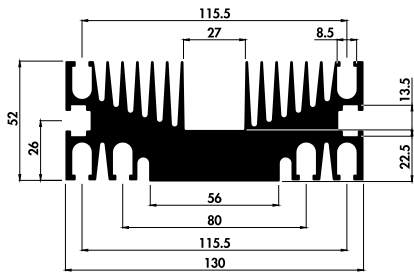
T130 52

Kg/mt: 11,18
L: 150 mm
Rth,N: 0,81 K/W
Rth,F: 0,274 K/W



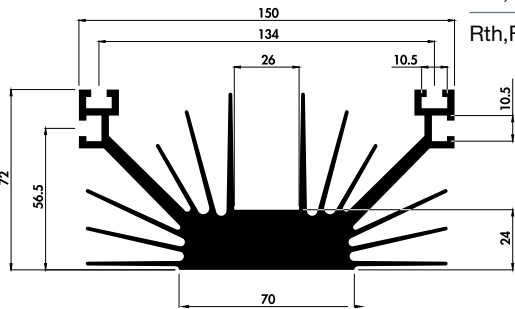
Estruso

Extruded heat sink



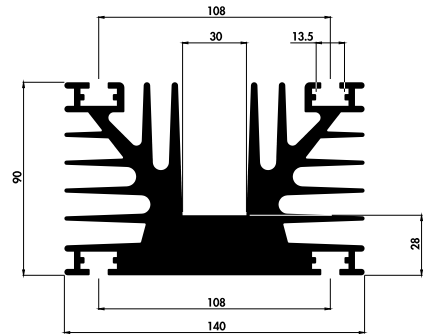
T130 52A

Kg/mt: 10,03
L: 150 mm
Rth,N: 0,77 K/W
Rth,F: 0,261 K/W



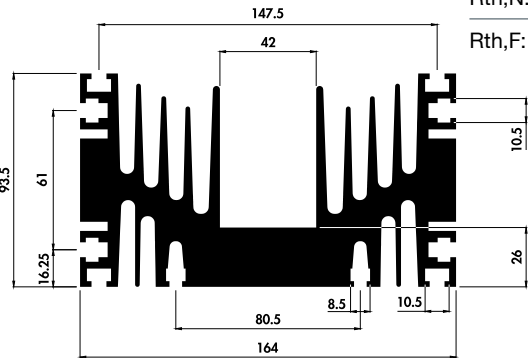
T150 72

Kg/mt: 8,93
L: 150 mm
Rth,N: 0,69 K/W
Rth,F: 0,233 K/W



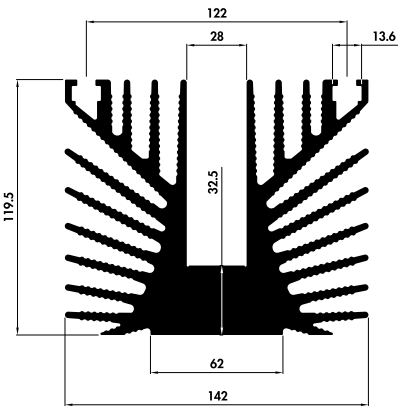
T140 90

Kg/mt: 15,23
L: 150 mm
Rth,N: 0,66 K/W
Rth,F: 0,223 K/W



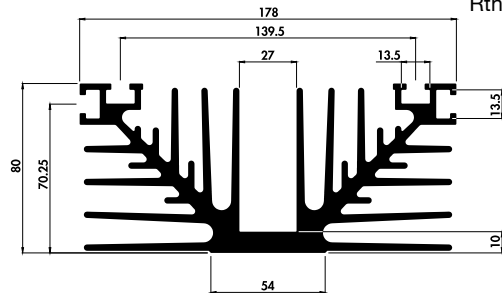
T164 93

Kg/mt: 19,00
L: 200 mm
Rth,N: 0,47 K/W
Rth,F: 0,159 K/W



T142 120

Kg/mt: 19,50
L: 150 mm
Rth,N: 0,51 K/W
Rth,F: 0,174 K/W

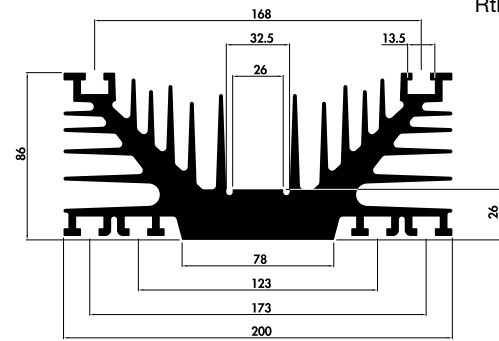


T180 80

Kg/mt: 12,78
L: 200 mm
Rth,N: 0,45 K/W
Rth,F: 0,154 K/W

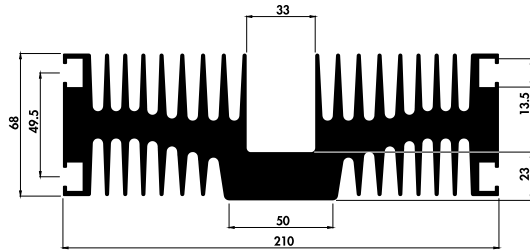
Estruso

Extruded heat sink



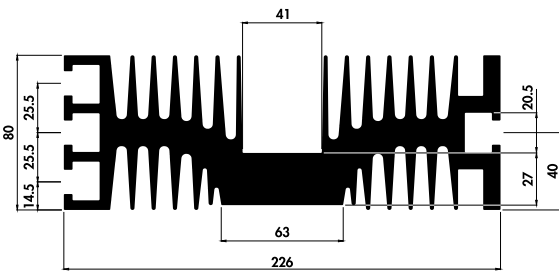
T200 86

Kg/mt: 19,17
L: 200 mm
Rth,N: 0,45 K/W
Rth,F: 0,152 K/W



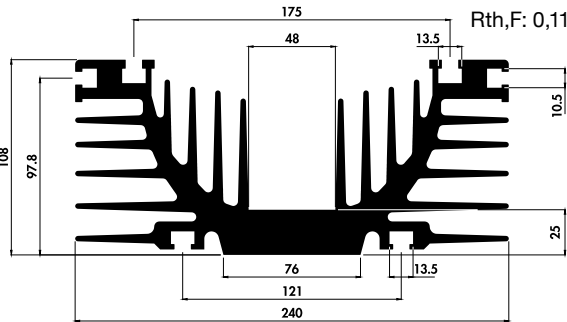
T210 70

Kg/mt: 19,99
L: 200 mm
Rth,N: 0,43 K/W
Rth,F: 0,146 K/W



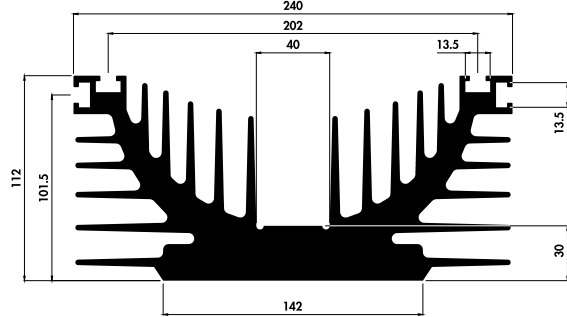
T226 80

Kg/mt: 23,74
L: 250 mm
Rth,N: 0,36 K/W
Rth,F: 0,122 K/W



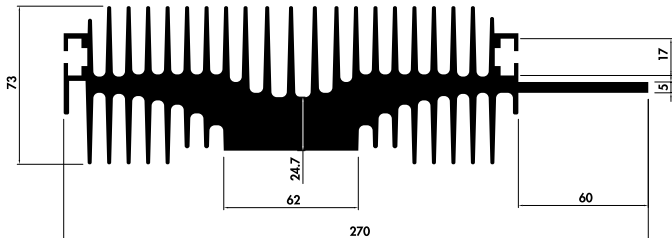
T240 108

Kg/mt: 26,10
L: 250 mm
Rth,N: 0,33 K/W
Rth,F: 0,112 K/W



T240 112

Kg/mt: 29,72
L: 250 mm
Rth,N: 0,35 K/W
Rth,F: 0,117 K/W



T270 73

Kg/mt: 18,74
L: 300 mm
Rth,N: 0,29 K/W
Rth,F: 0,097 K/W



Estruso

Extruded heat sink

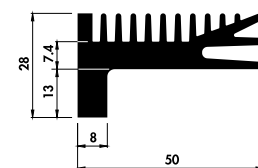
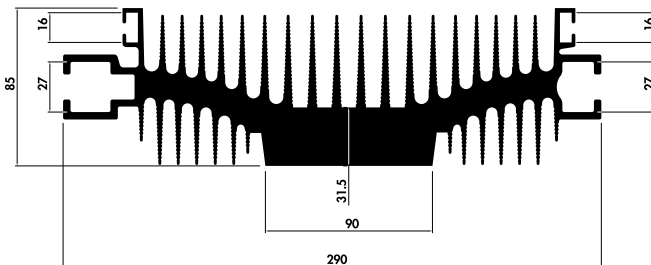
T290 85

Kg/mt: 25,40

L: 300 mm

Rth,N: 0,25 K/W

Rth,F: 0,084 K/W

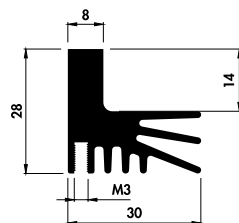
**L50 28**

Kg/mt: 1,65

L: 50 mm

Rth,N: 4,33 K/W

Rth,F: 1,464 K/W

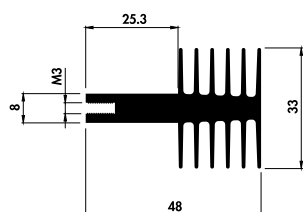
**L30 28**

Kg/mt: 0,983

L: 50 mm

Rth,N: 5,64 K/W

Rth,F: 1,906 K/W

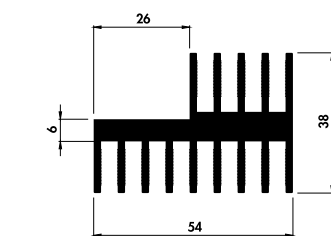
**L48 33**

Kg/mt: 1,45

L: 50 mm

Rth,N: 3,54 K/W

Rth,F: 1,195 K/W

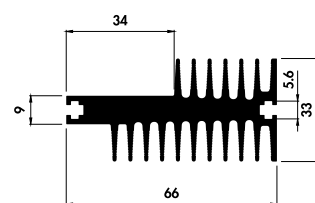
**L54 38**

Kg/mt: 2,20

L: 50 mm

Rth,N: 2,70 K/W

Rth,F: 0,911 K/W

**L66 33**

Kg/mt: 2,43

L: 100 mm

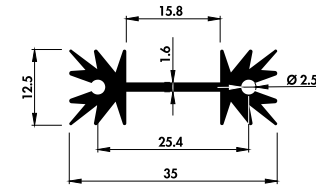
Rth,N: 1,63 K/W

Rth,F: 0,551 K/W



Estruso

Extruded heat sink

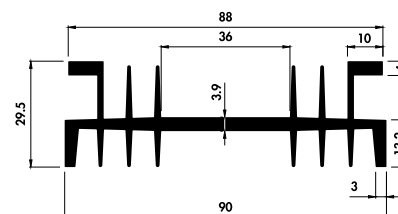
**H34,5 12**

Kg/mt: 0,434

L: 50 mm

Rth,N: 6,20 K/W

Rth,F: 2,095 K/W

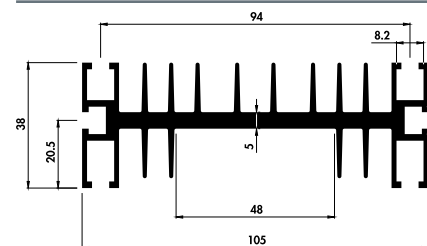
**H90 29,5**

Kg/mt: 1,86

L: 100 mm

Rth,N: 1,85 K/W

Rth,F: 0,625 K/W

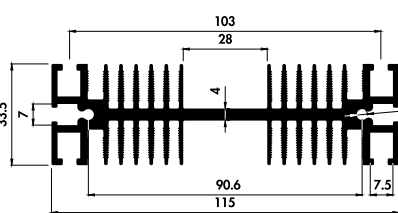
**H105 38**

Kg/mt: 2,83

L: 100 mm

Rth,N: 1,35 K/W

Rth,F: 0,457 K/W

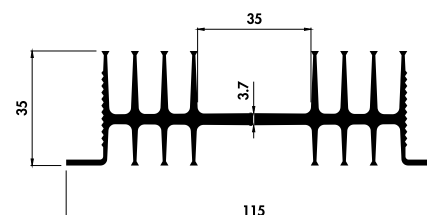
**H115 33**

Kg/mt: 3,83

L: 100 mm

Rth,N: 0,98 K/W

Rth,F: 0,332 K/W

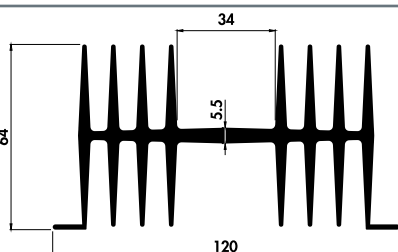
**H115 35**

Kg/mt: 2,15

L: 100 mm

Rth,N: 1,50 K/W

Rth,F: 0,507 K/W

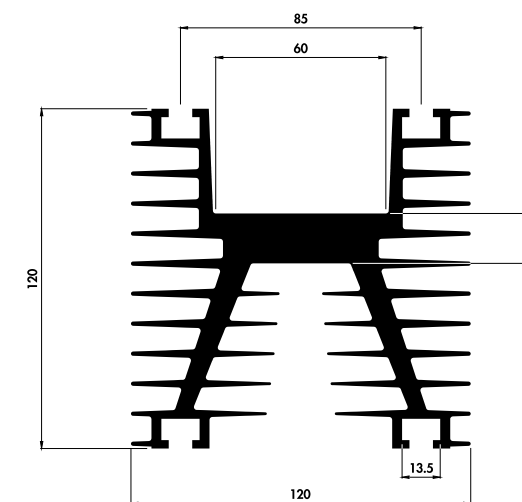
**H120 64**

Kg/mt: 4,97

L: 100 mm

Rth,N: 1,12 K/W

Rth,F: 0,377 K/W

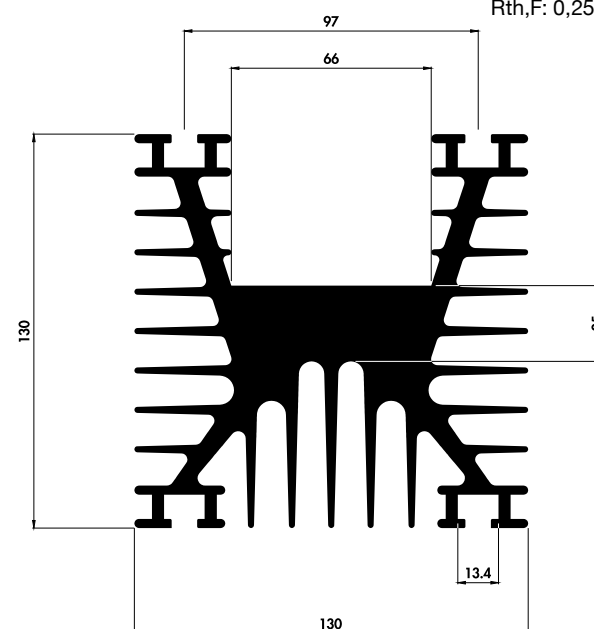
**H120 120**

Kg/mt: 11,19

L: 100 mm

Rth,N: 0,74 K/W

Rth,F: 0,251 K/W

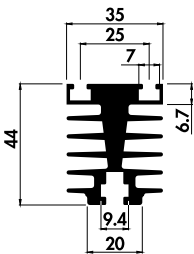
**H130 130**

Kg/mt: 16,26

L: 100 mm

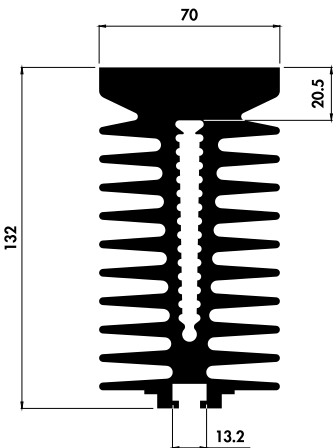
Rth,N: 0,74 K/W

Rth,F: 0,250 K/W



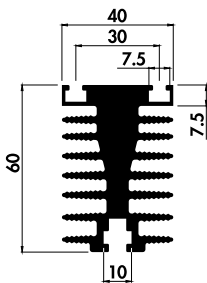
E35 44

Kg/mt: 2,00
L: 50 mm
Rth,N: 3,38 K/W
Rth,F: 1,143 K/W



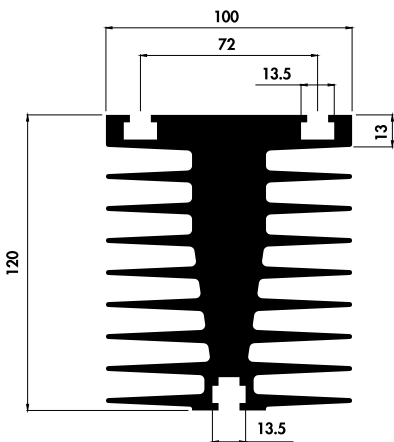
E70 132

Kg/mt: 13,32
L: 100 mm
Rth,N: 0,90 K/W
Rth,F: 0,305 K/W



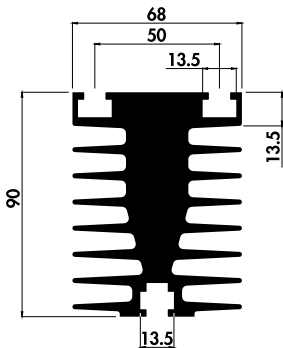
E40 60

Kg/mt: 3,41
L: 50 mm
Rth,N: 2,59 K/W
Rth,F: 0,874 K/W



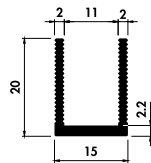
E100 120

Kg/mt: 15,64
L: 100 mm
Rth,N: 0,86 K/W
Rth,F: 0,291 K/W



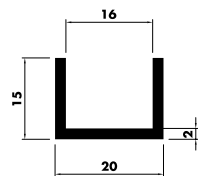
E68 90

Kg/mt: 8,66
L: 100 mm
Rth,N: 1,22 K/W
Rth,F: 0,411 K/W



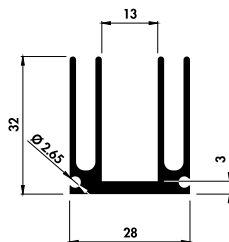
U15 20

Kg/mt: 0,256
L: 50 mm
Rth,N: 8,37 K/W
Rth,F: 2,828 K/W



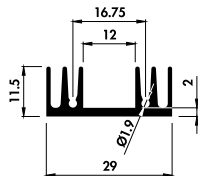
U20 15

Kg/mt: 0,249
L: 50 mm
Rth,N: 9,90 K/W
Rth,F: 3,347 K/W



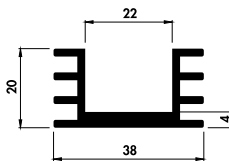
U28 32

Kg/mt: 0,734
L: 50 mm
Rth,N: 4,63 K/W
Rth,F: 1,564 K/W



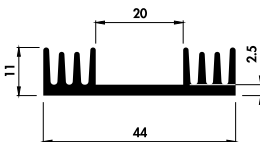
U29 12

Kg/mt: 0,354
L: 50 mm
Rth,N: 6,73 K/W
Rth,F: 2,273 K/W



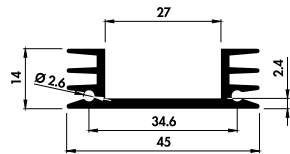
U38 20

Kg/mt: 0,710
L: 50 mm
Rth,N: 5,65 K/W
Rth,F: 1,909 K/W



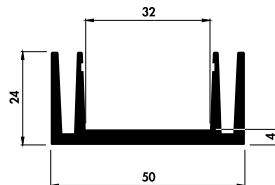
U44 11

Kg/mt: 0,563
L: 50 mm
Rth,N: 5,79 K/W
Rth,F: 1,956 K/W



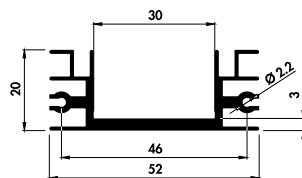
U45 14

Kg/mt: 0,550
L: 50 mm
Rth,N: 5,69 K/W
Rth,F: 1,921 K/W



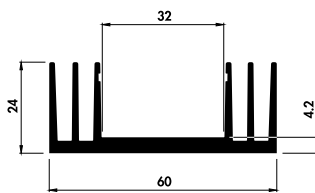
U50 24

Kg/mt: 1,03
L: 50 mm
Rth,N: 4,88 K/W
Rth,F: 1,650 K/W



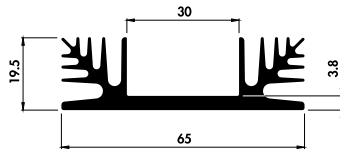
U52 20

Kg/mt: 0,733
L: 50 mm
Rth,N: 4,40 K/W
Rth,F: 1,485 K/W



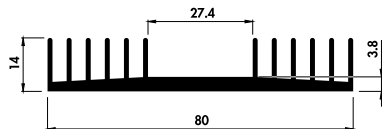
U60 24

Kg/mt: 1,22
L: 50 mm
Rth,N: 3,92 K/W
Rth,F: 1,324 K/W



U65 20

Kg/mt: 1,25
L: 50 mm
Rth,N: 3,82 K/W
Rth,F: 1,291 K/W

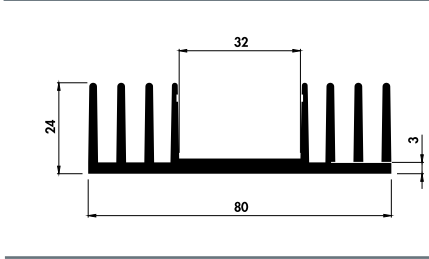


U80 14

Kg/mt: 1,18
L: 50 mm
Rth,N: 3,58 K/W
Rth,F: 1,210 K/W

Estruso

Extruded heat sink



Technical drawing of the U80 24 heat sink. It shows a cross-section with a base width of 80 mm, a central fin width of 32 mm, and a fin height of 24 mm. The base thickness is 3 mm.

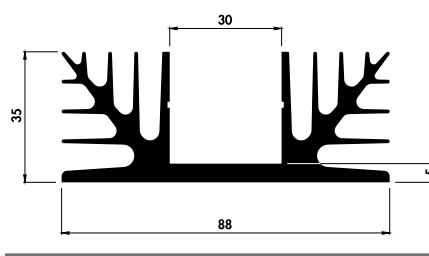
U80 24

Kg/mt: 1,72

L: 50 mm

Rth,N: 3,22 K/W

Rth,F: 1,086 K/W



Technical drawing of the U88 35 heat sink. It shows a cross-section with a base width of 88 mm, a central fin width of 30 mm, and a fin height of 35 mm. The base thickness is 5 mm.

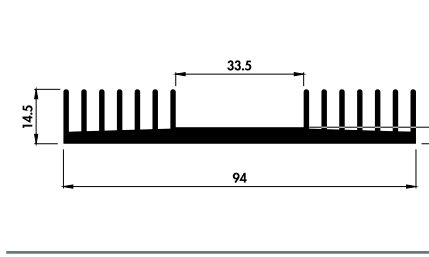
U88 35

Kg/mt: 2,80

L: 50 mm

Rth,N: 2,65 K/W

Rth,F: 0,894 K/W



Technical drawing of the U94 14A heat sink. It shows a cross-section with a base width of 94 mm, a central fin width of 33.5 mm, and a fin height of 14.5 mm. The base thickness is 4.4 mm.

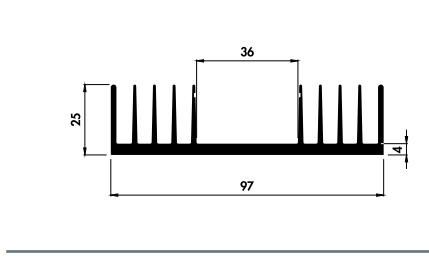
U94 14A

Kg/mt: 1,64

L: 100 mm

Rth,N: 1,97 K/W

Rth,F: 0,664 K/W



Technical drawing of the U97 25 heat sink. It shows a cross-section with a base width of 97 mm, a central fin width of 36 mm, and a fin height of 25 mm. The base thickness is 4 mm.

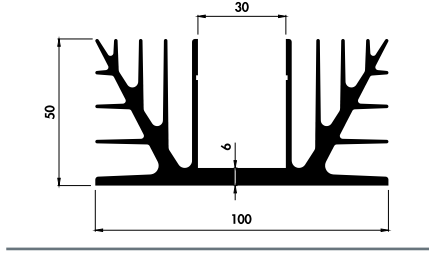
U97 25

Kg/mt: 1,95

L: 100 mm

Rth,N: 1,72 K/W

Rth,F: 0,580 K/W



Technical drawing of the U100 50 heat sink. It shows a cross-section with a base width of 100 mm, a central fin width of 30 mm, and a fin height of 50 mm. The base thickness is 6 mm.

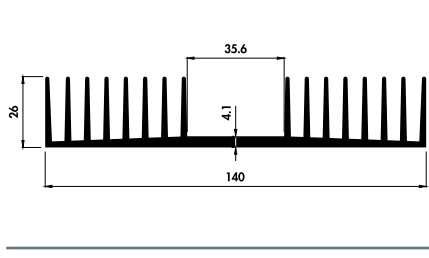
U100 50

Kg/mt: 4,90

L: 100 mm

Rth,N: 1,30 K/W

Rth,F: 0,440 K/W



Technical drawing of the U140 26 heat sink. It shows a cross-section with a base width of 140 mm, a central fin width of 35.6 mm, and a fin height of 26 mm. The base thickness is 4.1 mm.

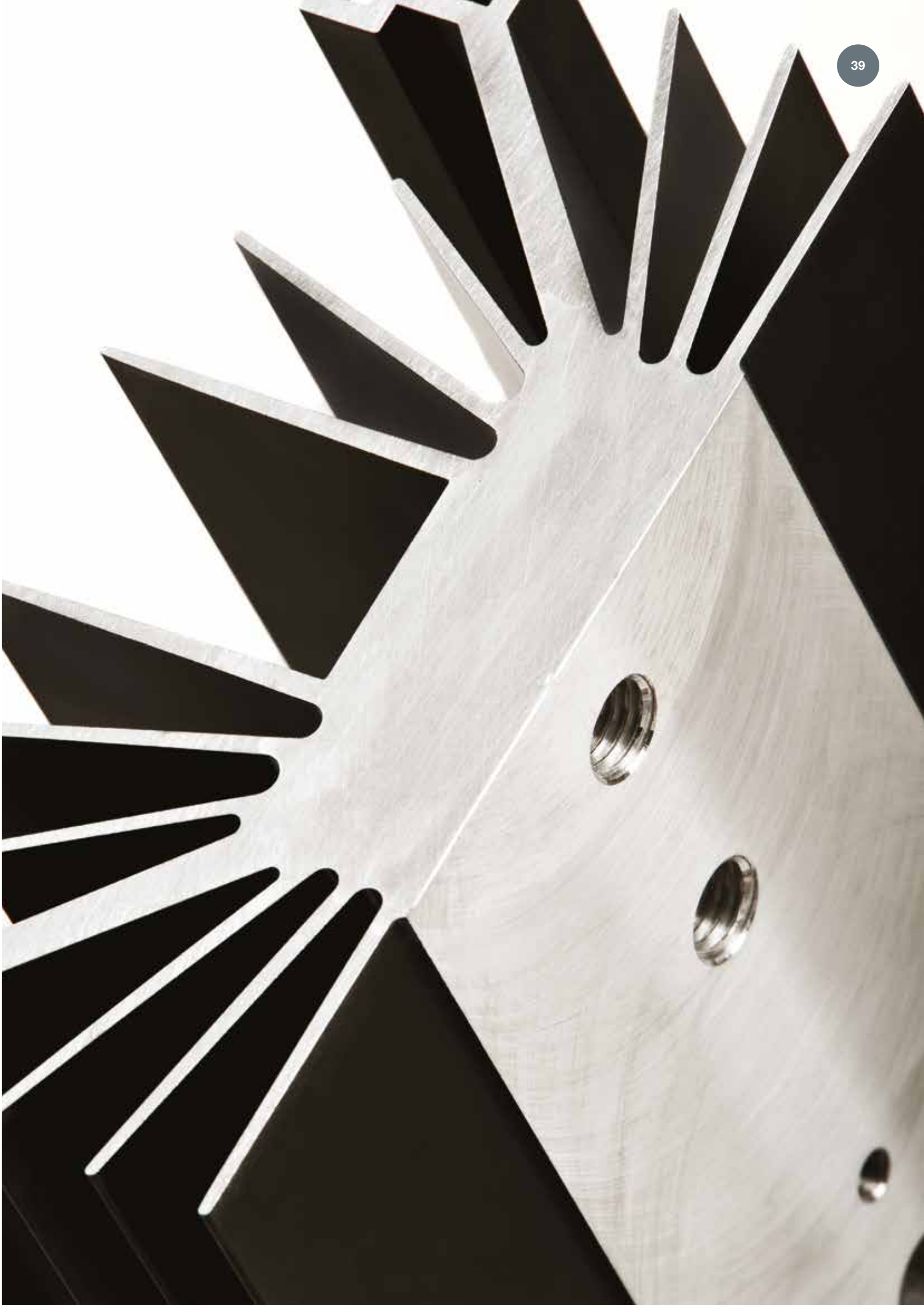
U140 26

Kg/mt: 3,26

L: 100 mm

Rth,N: 1,23 K/W

Rth,F: 0,414 K/W





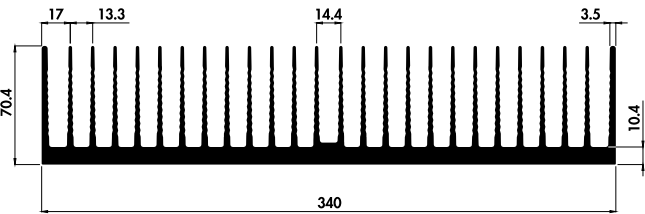
Saldato
Welded heat sink

Saldato

Welded heat sink

P170 70





P340 70

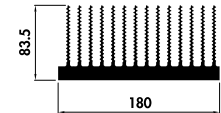
Kg/mt: 21,29

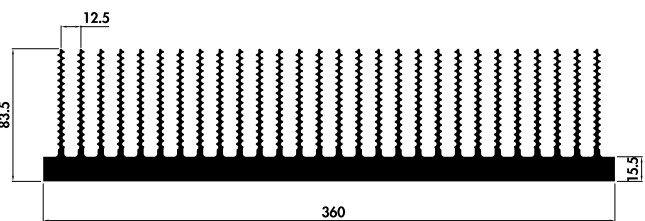
L: 400 mm

Rth,N: 0,19 K/W

Rth,F: 0,063 K/W

P180 83





P360 83

Kg/mt: 30,40

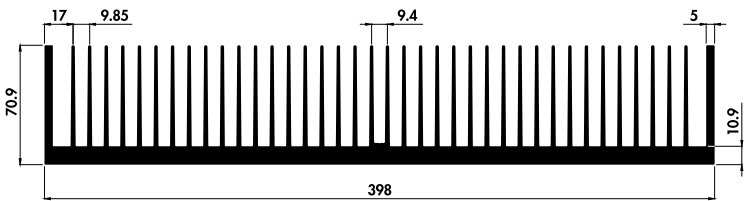
L: 400 mm

Rth,N: 0,14 K/W

Rth,F: 0,047 K/W

P199 70





P398 70

Kg/mt: 28,70

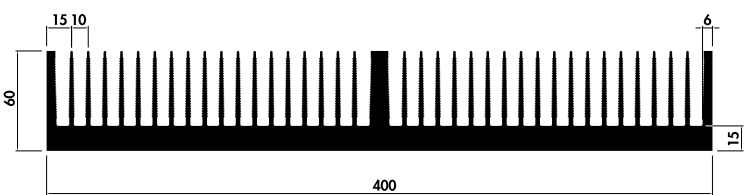
L: 400 mm

Rth,N: 0,14 K/W

Rth,F: 0,049 K/W

P200 60





P400 60

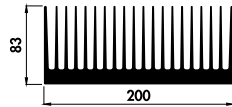
Kg/mt: 30,32

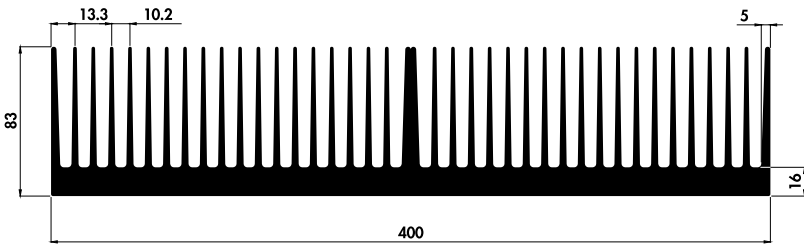
L: 400 mm

Rth,N: 0,14 K/W

Rth,F: 0,046 K/W

P200 83





P400 83

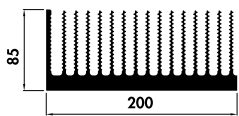
Kg/mt: 39,75

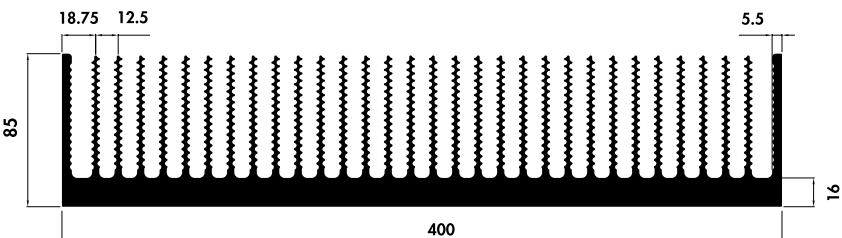
L: 400 mm

Rth,N: 0,14 K/W

Rth,F: 0,047 K/W

S200 85





P400 85

Kg/mt: 35,76

L: 400 mm

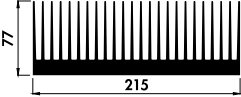
Rth,N: 0,13 K/W

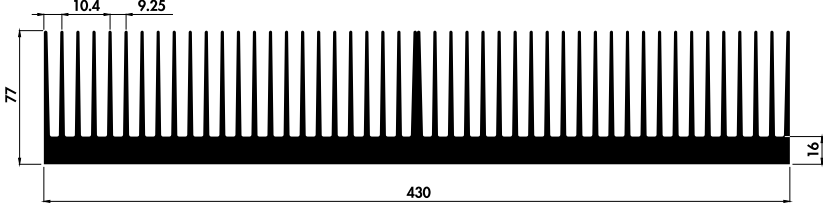
Rth,F: 0,043 K/W

Saldato

Welded heat sink

P215 77A





P430 77A

Kg/mt: 39,60

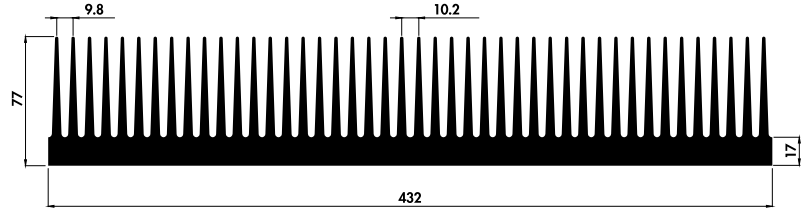
L: 450 mm

Rth,N: 0,12 K/W

Rth,F: 0,040 K/W

P216 77





P432 77

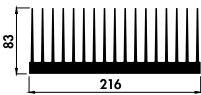
Kg/mt: 48,00

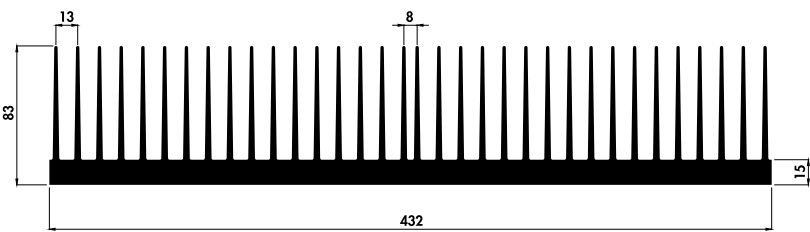
L: 450 mm

Rth,N: 0,13 K/W

Rth,F: 0,043 K/W

P216 83





P432 83

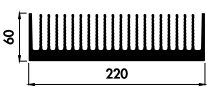
Kg/mt: 36,13

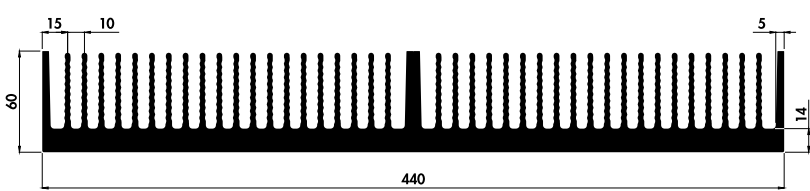
L: 450 mm

Rth,N: 0,13 K/W

Rth,F: 0,046 K/W

P220 60





P440 60

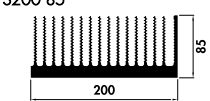
Kg/mt: 34,54

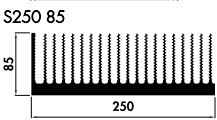
L: 450 mm

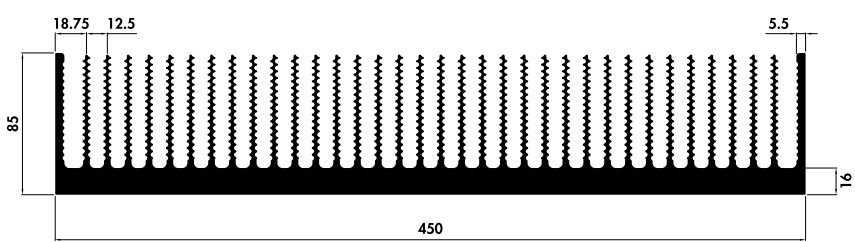
Rth,N: 0,15 K/W

Rth,F: 0,050 K/W

S200 85







P450 85

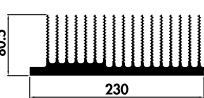
Kg/mt: 40,13

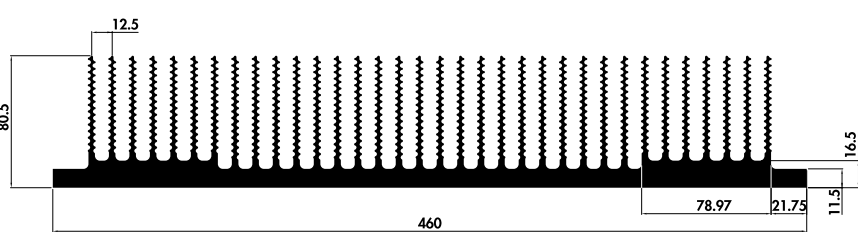
L: 450 mm

Rth,N: 0,11 K/W

Rth,F: 0,037 K/W

P230 80B





P460 80

Kg/mt: 34,95

L: 450 mm

Rth,N: 0,11 K/W

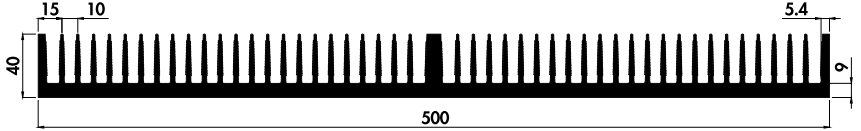
Rth,F: 0,038 K/W

Saldato

Welded heat sink

P250 40





P500 40

Kg/mt: 23,87

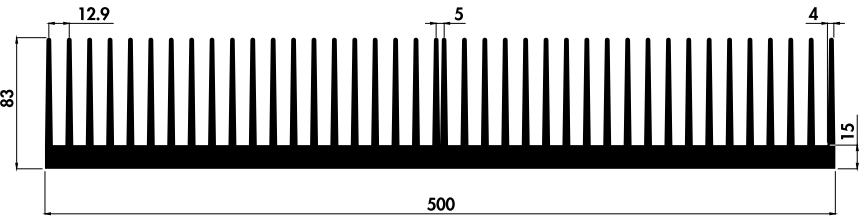
L: 500 mm

Rth,N: 0,13 K/W

Rth,F: 0,044 K/W

P250 83





P500 83

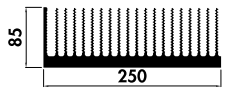
Kg/mt: 49,36

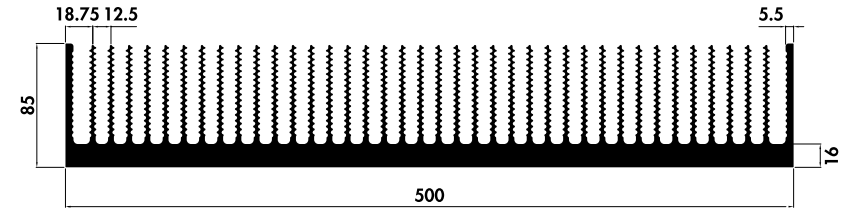
L: 500 mm

Rth,N: 0,11 K/W

Rth,F: 0,038 K/W

S250 85





P500 85

Kg/mt: 44,51

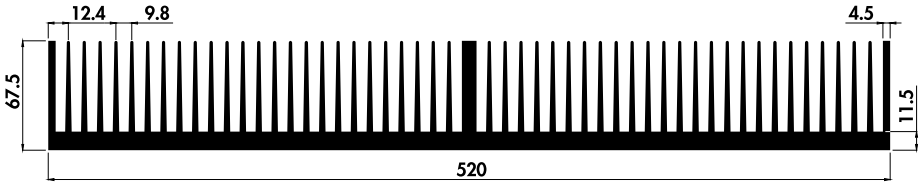
L: 500 mm

Rth,N: 0,09 K/W

Rth,F: 0,032 K/W

P260 67,5





P520 67,5

Kg/mt: 41,36

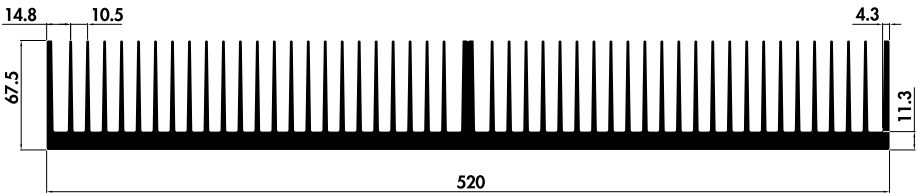
L: 500 mm

Rth,N: 0,11 K/W

Rth,F: 0,036 K/W

P260 67,5A





P520 67,5A

Kg/mt: 36,37

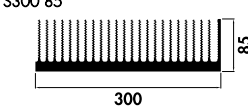
L: 500 mm

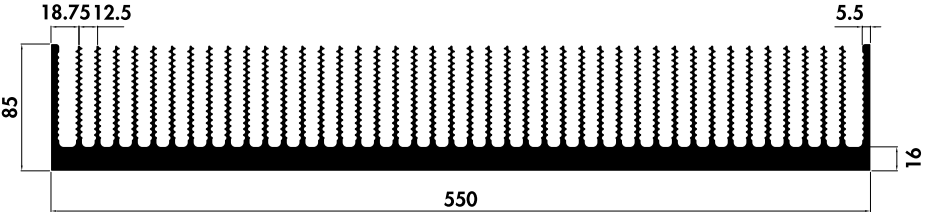
Rth,N: 0,11 K/W

Rth,F: 0,038 K/W

S250 85







P550 85

Kg/mt: 48,88

L: 550 mm

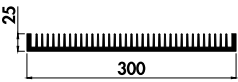
Rth,N: 0,08 K/W

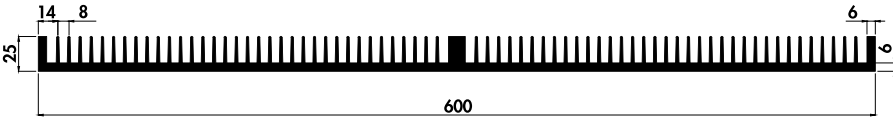
Rth,F: 0,028 K/W

Saldato

Welded heat sink

P300 25





P600 25

Kg/mt: 18,02

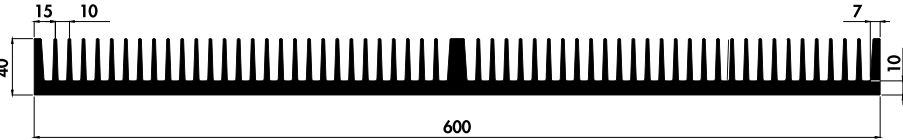
L: 600 mm

Rth,N: 0,14 K/W

Rth,F: 0,047 K/W

P300 40A





P600 40A

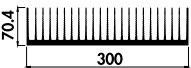
Kg/mt: 31,60

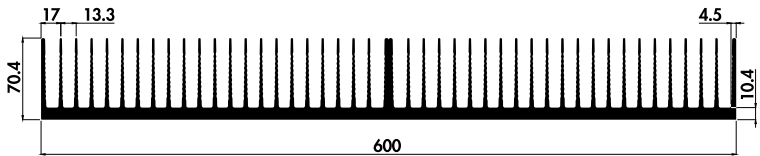
L: 600 mm

Rth,N: 0,12 K/W

Rth,F: 0,042 K/W

P300 70





P600 70

Kg/mt: 37,53

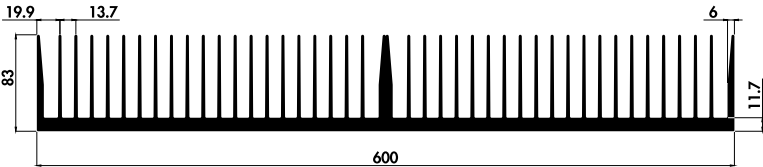
L: 600 mm

Rth,N: 0,10 K/W

Rth,F: 0,033 K/W

P300 83A





P600 83A

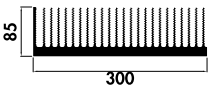
Kg/mt: 46,15

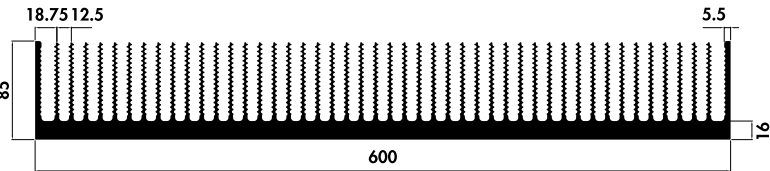
L: 600 mm

Rth,N: 0,09 K/W

Rth,F: 0,031 K/W

S300 85





P600 85

Kg/mt: 53,25

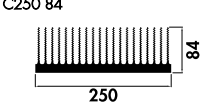
L: 600 mm

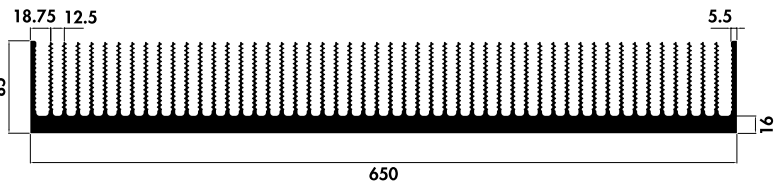
Rth,N: 0,07 K/W

Rth,F: 0,025 K/W

S200 85







P650 85

Kg/mt: 57,63

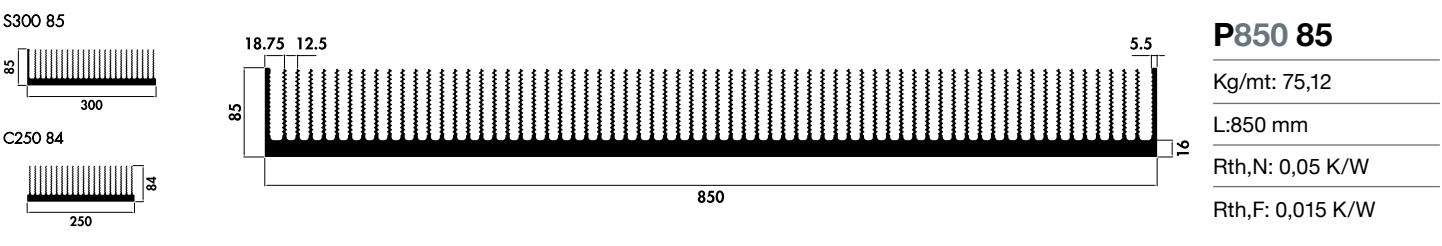
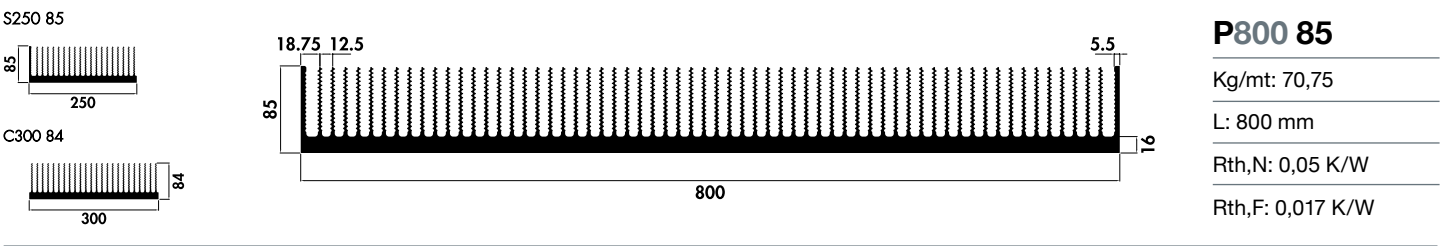
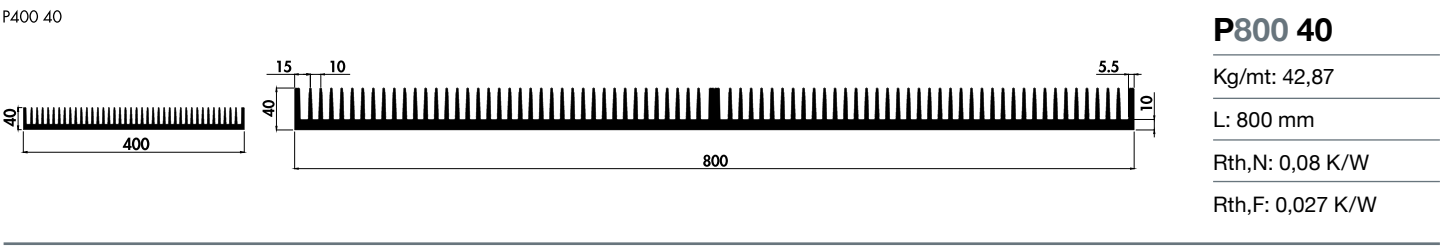
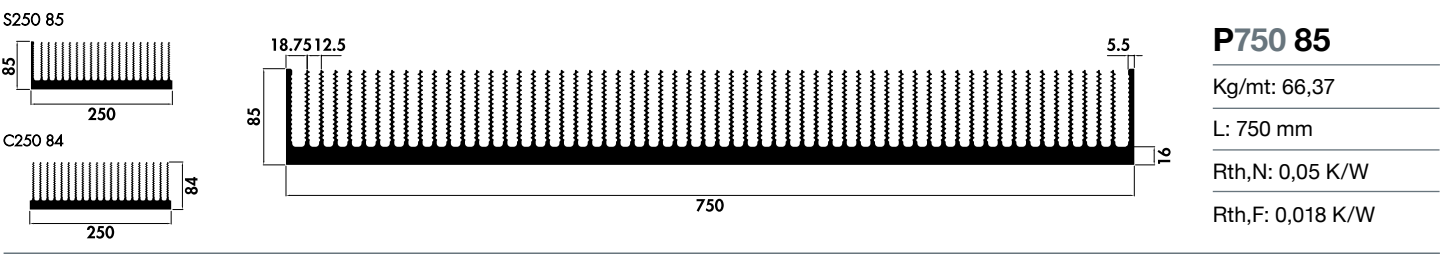
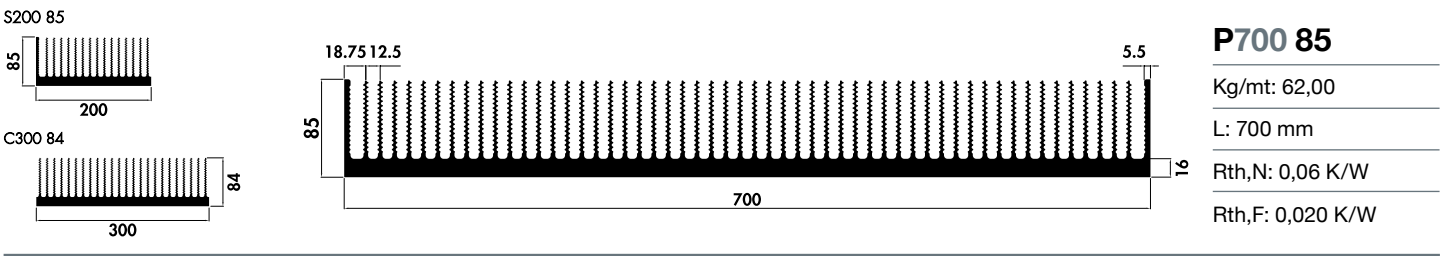
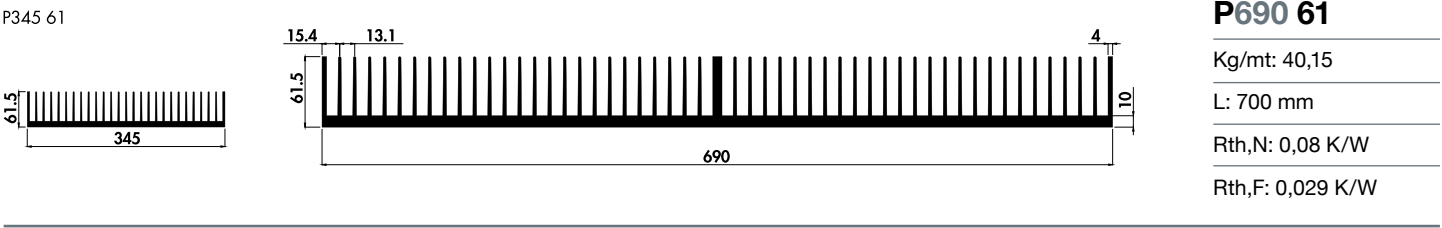
L: 650 mm

Rth,N: 0,07 K/W

Rth,F: 0,022 K/W

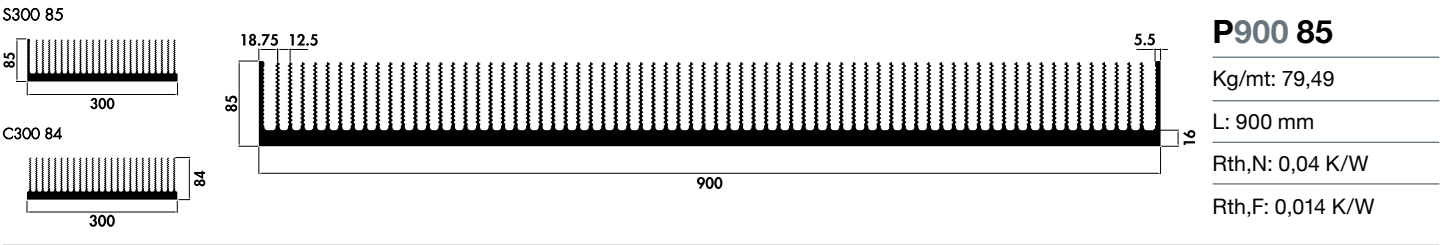
Saldato

Welded heat sink



Saldato

Welded heat sink

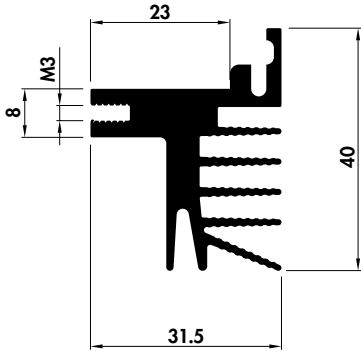




Sistema a molla
Clip system

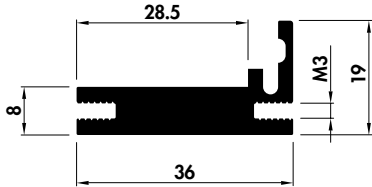
Sistema a molla

Clip system



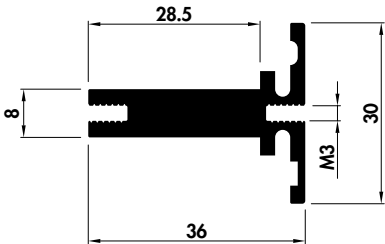
L40 31

Kg/mt: 1,06
L: 50 mm
Rth,N: 4,31 K/W
Rth,F: 1,455 K/W



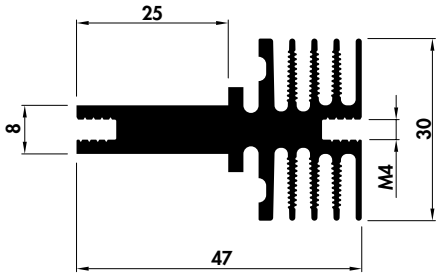
L36 19

Kg/mt: 0,76
L: 50 mm
Rth,N: 7,24 K/W
Rth,F: 2,448 K/W



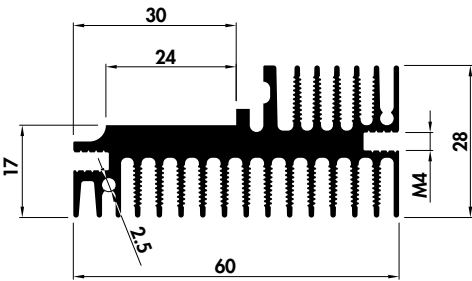
L36 30

Kg/mt: 0,84
L: 50 mm
Rth,N: 6,34 K/W
Rth,F: 2,144 K/W



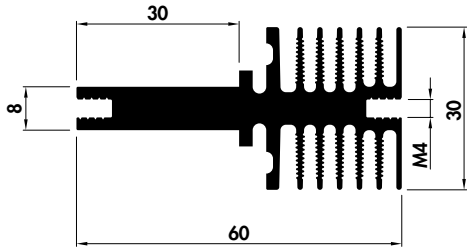
L47 30

Kg/mt: 1,31
L: 50 mm
Rth,N: 3,53 K/W
Rth,F: 1,193 K/W



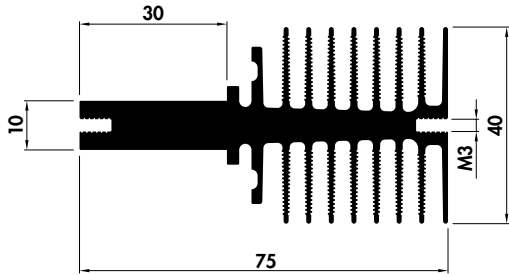
L60 28

Kg/mt: 1,72
L: 50 mm
Rth,N: 2,34 K/W
Rth,F: 0,790 K/W



L60 30

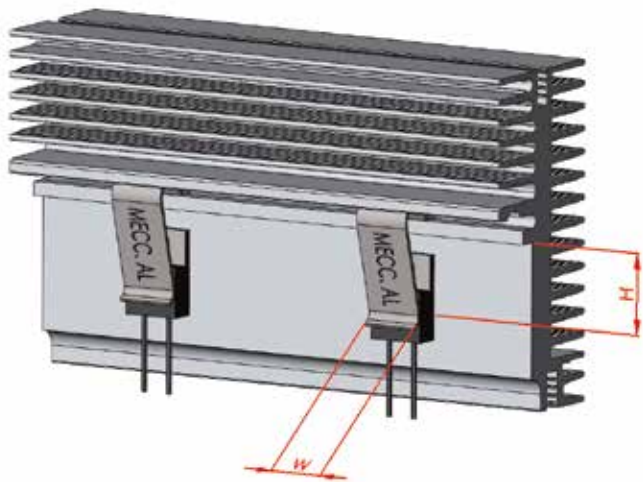
Kg/mt: 1,71
L: 50 mm
Rth,N: 2,86 K/W
Rth,F: 0,966 K/W



L75 40

Kg/mt: 2,61
L: 50 mm
Rth,N: 1,99 K/W
Rth,F: 0,673 K/W

Clip Part Number	H	W	Force	Package	Surface Treatment
M1	13,5 mm	10 mm	20 N	TO220	Zinc/Nikel
M2	13,5 mm	13 mm	60 N	TO220	Zinc/Nikel
M3	13,5 mm	15 mm	45 N	TO218 TO220 TO247	Zinc/Nikel
M4	13,5 mm	20 mm	40 N	TO247	Zinc/Nikel
M10	17,5 mm	12 mm	40 N	TO220	Zinc/Nikel
M12	17,5 mm	6 mm	20 N	TO92	Zinc/Nikel

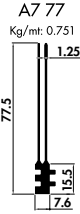




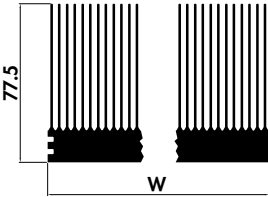
Alta efficienza
High performance
heat sink

Alta efficienza

High performance heat sink



A7 77
Kg/mt: 0.751



77.5
W

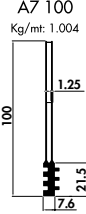
PA7 77

W: 98,8 mm

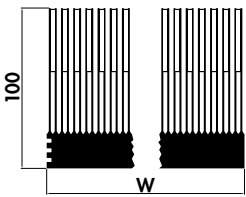
L: 150 mm

Rth,N: 0,37 K/W

Rth,F: 0,123 K/W



A7 100
Kg/mt: 1.004



100
W

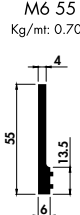
PA7 100

W: 98,8 mm

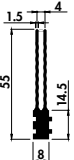
L: 150 mm

Rth,N: 0,31 K/W

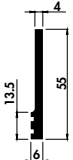
Rth,F: 0,104 K/W



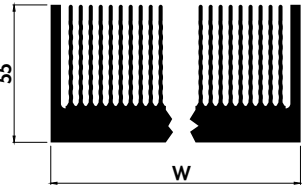
M6 55
Kg/mt: 0.704



A8 55
Kg/mt: 0.650



F6 55
Kg/mt: 0.643



55
W

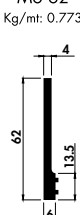
PA8 55

W: 100 mm

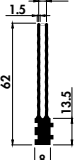
L: 150 mm

Rth,N: 0,48 K/W

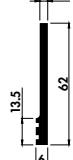
Rth,F: 0,163 K/W



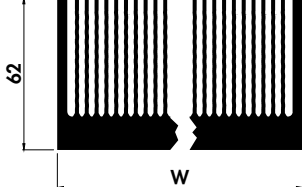
M6 62
Kg/mt: 0.773



A8 62
Kg/mt: 0.692



F6 62
Kg/mt: 0.713



62
W

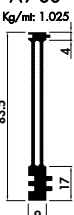
PA8 62

W: 100 mm

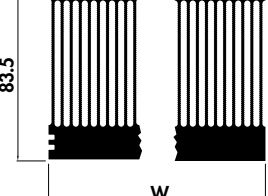
L: 150 mm

Rth,N: 0,43 K/W

Rth,F: 0,146 K/W



A9 83
Kg/mt: 1.025



83.5
W

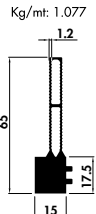
PA9 83

W: 99 mm

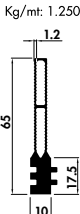
L: 150 mm

Rth,N: 0,42 K/W

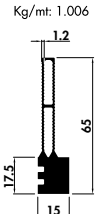
Rth,F: 0,143 K/W



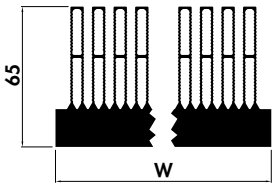
M15 65
Kg/mt: 1.077



A10 65
Kg/mt: 1.250



F15 65
Kg/mt: 1.006



65
W

PA10 65

W: 100 mm

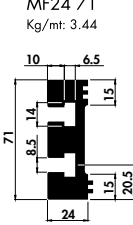
L: 150 mm

Rth,N: 0,48 K/W

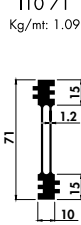
Rth,F: 0,162 K/W

Alta efficienza

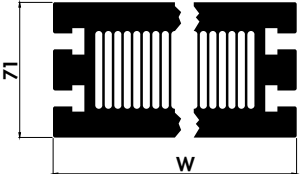
High performance heat sink



MF24 71
Kg/mt: 3.44



I10 71
Kg/mt: 1.09



71
W

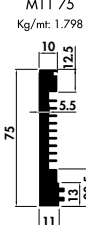
PA10 71

W: 108 mm

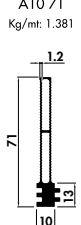
L: 150 mm

Rth,N: 0,53 K/W

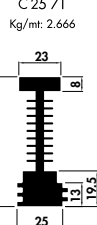
Rth,F: 0,180 K/W



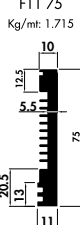
M11 75
Kg/mt: 1.798



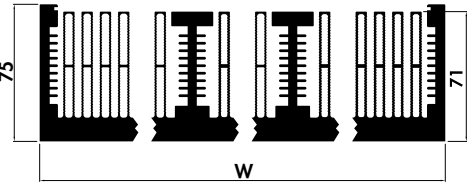
A10 71
Kg/mt: 1.381



C25 71
Kg/mt: 2.666



F11 75
Kg/mt: 1.715



75
W

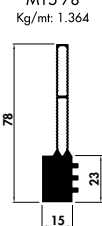
PA10 75

W: 102 mm

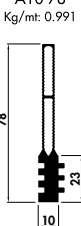
L: 150 mm

Rth,N: 0,41 K/W

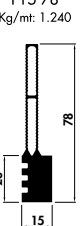
Rth,F: 0,137 K/W



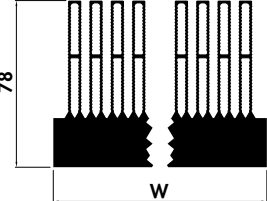
M15 78
Kg/mt: 1.364



A10 78
Kg/mt: 0.991



F15 78
Kg/mt: 1.240



78
W

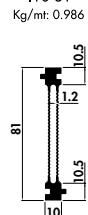
PA10 78

W: 100 mm

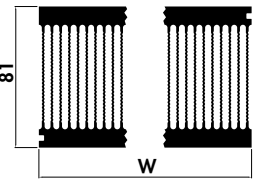
L: 150 mm

Rth,N: 0,43 K/W

Rth,F: 0,145 K/W



I10 81
Kg/mt: 0.986



81
W

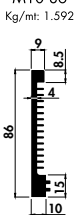
PA10 81

W: 100 mm

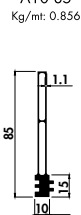
L: 150 mm

Rth,N: 0,39 K/W

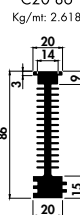
Rth,F: 0,132 K/W



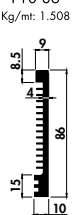
M10 86
Kg/mt: 1.592



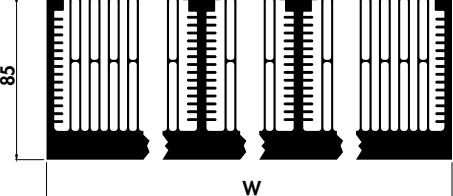
A10 85
Kg/mt: 0.856



C20 86
Kg/mt: 2.618



F10 86
Kg/mt: 1.508



85
W

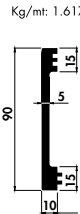
PA10 85

W: 100 mm

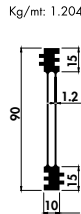
L: 150 mm

Rth,N: 0,37 K/W

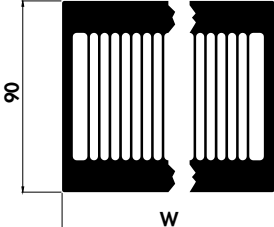
Rth,F: 0,125 K/W



MF10 90
Kg/mt: 1.617



I10 90
Kg/mt: 1.204



90
W

PA10 90

W: 100 mm

L: 150 mm

Rth,N: 0,40 K/W

Rth,F: 0,137 K/W

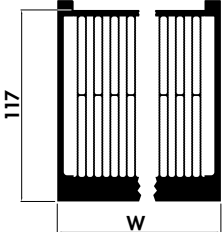
Alta efficienza

High performance heat sink

M10 123
Kg/mt: 1.798

A10 117B
Kg/mt: 1.115

F10 123
Kg/mt: 1.671

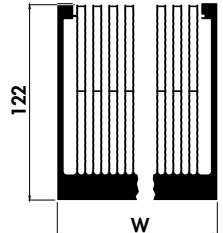

W

PA10 117
W: 100 mm
L: 150 mm
Rth,N: 0,32 K/W
Rth,F: 0,107 K/W

M10 123B
Kg/mt: 1.798

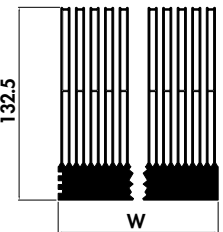
A10 122
Kg/mt: 1.145

F10 123B
Kg/mt: 1.671


W

PA10 122
W: 100 mm
L: 150 mm
Rth,N: 0,31 K/W
Rth,F: 0,104 K/W

A10 132
Kg/mt: 1.434


W

PA10 132
W: 100 mm
L: 150 mm
Rth,N: 0,28 K/W
Rth,F: 0,095 K/W

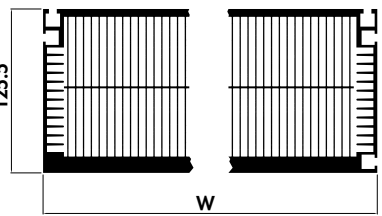
M16 125B
Kg/mt: 2.656

M16 125
Kg/mt: 2.330

I12 125
Kg/mt: 1.220

F18 125
Kg/mt: 2.282

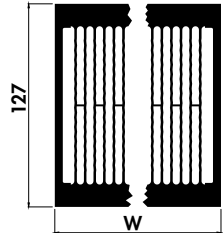
F18 125B
Kg/mt: 2.633


W

PA12 125
W: 106 mm
L: 150 mm
Rth,N: 0,32 K/W
Rth,F: 0,109 K/W

MF10 127
Kg/mt: 2.113

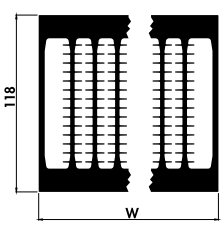
I12 127
Kg/mt: 1.784


W

PA12 127
W: 104 mm
L: 150 mm
Rth,N: 0,33 K/W
Rth,F: 0,112 K/W

MF15 118
Kg/mt: 2.25

I15 118
Kg/mt: 2.55


W

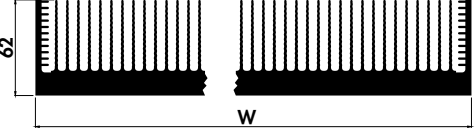
PA15 118
W: 105 mm
L: 150 mm
Rth,N: 0,39 K/W
Rth,F: 0,131 K/W

Alta efficienza

High performance heat sink

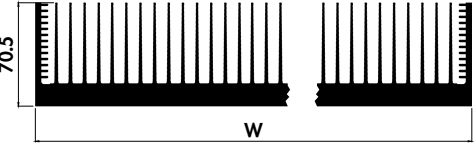
A50 62
Kg/mt: 3.7

A100 62
Kg/mt: 7.41


W

PA50 62 & PA100 62
W: 100 mm
L: 150 mm
Rth,N: 0,62 K/W
Rth,F: 0,209 K/W

A95 70
Kg/mt: 6,63


W

PA95 70
W: 95 mm
L: 150 mm
Rth,N: 0,64 K/W
Rth,F: 0,215 K/W





Profilmecc & ProfilmeccPlus
Profilmecc & ProfilmeccPlus

Profilmecc

Profilmecc

Aluminium Alloy EN AW-1050A (Al99,5) * - Data sheet

Mechanical properties

Tensile strength	0,2-Proof stress	Elongation	Brinell hardness	Module of elasticity
80 N/mm ²	35 N/mm2	38%	21	65 kN/mm ²

*Other aluminium alloys available upon request

Chemical Composition

Si	Fe	Mn	Mg	Cu	Zn	Ti	Others (Each)	Al
0,25	0,40	0,05	0,05	0,05	0,07	0,05	0,03	99,5 (min)

Innovation Profilmecc, una linea di prodotto totalmente innovativa: dissipatori completamente custom con allo stesso tempo tutte le caratteristiche di una soluzione standard. Realizzato tramite l'assemblaggio meccanico di base ed alette con l'utilizzo di una tecnologia esclusiva e brevettata Profilmecc garantisce caratteristiche meccaniche di assoluta eccellenza. Aspect ratio fino a 75:1.

Profilmecc, a completely innovative product: totally custom made heat sinks but at the same time with the standard solutions specifications. Made through mechanical assembling of base and fins, utilising an exclusive and patented technology, Profilmecc guarantees mechanical specifications of unequivocal excellence. Aspect ratio up to 75:1.

Performance Dalla materia prima al prodotto finito: le performance termiche di Profilmecc e ProfilmeccPlus sono uniche e rispetto ai migliori e più efficienti dissipatori concorrenti ad oggi sul mercato garantiscono un decremento medio della resistenza termica tra il 7 ed il 10%.

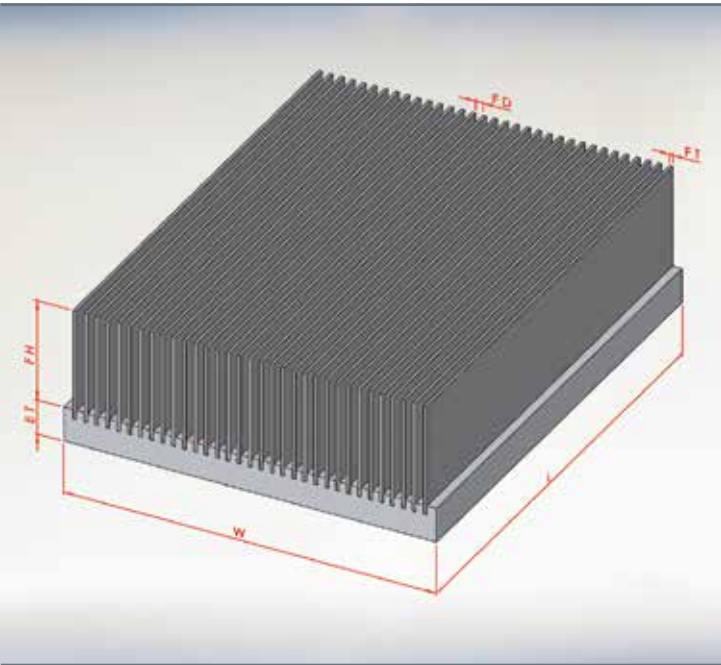
From raw material to finished product: Profilmecc and ProfilmeccPlus thermal performances are unique and, compared to our competitors best and most efficient heat sinks, they guarantee an average decrease in thermal resistance between 7 and 10%.

Exclusivity Nessun concorrente ha il completo controllo dell'intero processo di lavorazione, dalla materia prima al prodotto finito. Ciò permette a MeccAL di essere l'unica azienda sul mercato in grado di proporre questo tipo di soluzione tecnologica. Non esistono alternative alle linee di prodotto Profilmecc e ProfilmeccPlus.

None of our competitors has the complete control of the whole production, from raw material to the finished product. This allows MeccAL to be the only company in the market to launch this kind of technological solution. There are no other alternatives to Profilmecc and ProfilmeccPlus.

Dimensional specifications

Heatsink Width (W)	max 550 mm (single piece, without welding)
Heatsink Length (L)	max 1000 mm
Base Thickness (BT)	8 ÷ 30 mm
Fin Height (FH)	max 150 mm
Fin Thickness (FT)	1 ÷ 3 mm
Fins Distance (FD)	min 2 mm
Aspect Ratio (FH/FD)	max 75:1
Tolerances on dimensions and machining	ISO 2768-mk



ProfilmeccPlus

ProfilmeccPlus

Aluminium Alloy EN AW-1050A (Al99,5) * - Data sheet

Physical properties

Thermal conductivity	Electrical conductivity	Linear thermal expansion coeff.
229 W/mK	35,4 m/Ωmm ²	23,6 1/Kx10 ⁶

Application Properties

*Other aluminium alloys available upon request

Machinability	Weldability	Corrosion Resistance	Formability	Anodizing Response
Medium	Good	Optimal	Good	Good

Innovation Oltre i limiti! ProfilmeccPlus ridefinisce completamente tutti i limiti dimensionali sino ad oggi raggiunti con altre tecnologie. ProfilmeccPlus è un dissipatore monolitico completamente flessibile e dimensionabile in base alle specifiche esigenze di ogni singolo progetto: larghezza, lunghezza, spessore del piano base, spessore e passo delle alette, aspect ratio fino a 43:1. Libertà di progettare soluzioni completamente custom e senza vincoli utilizzando una linea di prodotto standard.

Beyond any limits! ProfilmeccPlus completely redefines all dimensional limits currently available today with other technologies. ProfilmeccPlus is a monolithic heatsink completely flexible with regards to each individual design requirement: base width, length and base thickness; fin thickness and distance between fins. Aspect ratio up to 43:1. Freedom to design completely customised solutions without any ties, utilising a standard product.

Performance Dalla materia prima al prodotto finito: le performance termiche di Profilmecc e ProfilmeccPlus sono uniche e rispetto ai migliori e più efficienti dissipatori concorrenti ad oggi sul mercato garantiscono un decremento medio della resistenza termica tra il 7 ed il 10%.

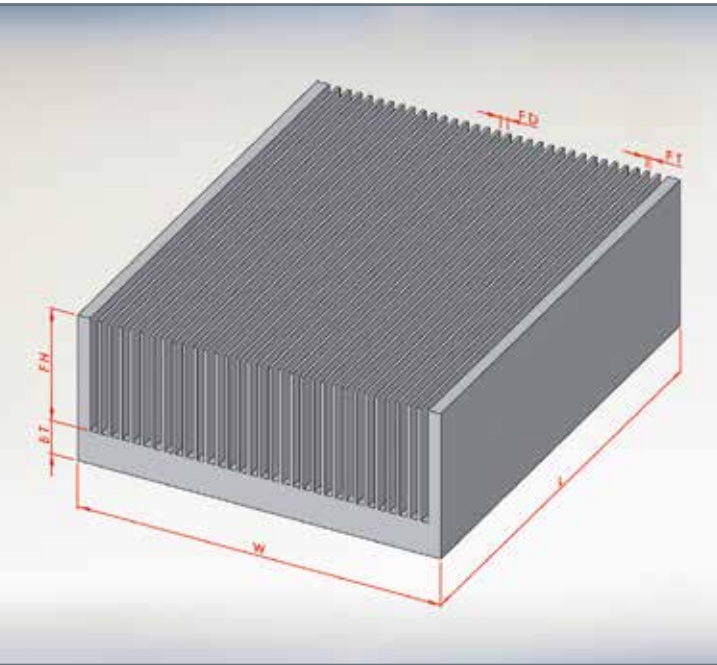
From raw material to finished product: Profillmecc and ProfilmeccPlus thermal performances are unique and, compared to our competitors best and most efficient heat sinks, they guarantee an average decrease in thermal resistance between 7 and 10%.

Exclusivity Nessun concorrente ha il completo controllo dell'intero processo di lavorazione, dalla materia prima al prodotto finito. Ciò permette a MeccAL di essere l'unica azienda sul mercato in grado di proporre questo tipo di soluzione tecnologica. Non esistono alternative alle linee di prodotto Profilmecc e ProfilmeccPlus.

None of our competitors has the complete control of the whole production, from raw material to the finished product. This allows MeccAL to be the only company on the market to launch this kind of technological solution. There are no other alternatives to Profilmecc and ProfilmeccPlus.

Dimensional specifications

Heatsink Width (W)	max 800 mm (single piece, without welding)
Heatsink Length (L)	max 3000 mm
Base Thickness (BT)	5 ÷ 50 mm
Fin Height (FH)	max 150 mm
Fin Thickness (FT)	min 0,8 mm
Fins Distance (FD)	min 2 mm
Aspect Ratio (FH/FD)	max 43:1
Tolerances on dimensions and machining	ISO 2768-mk

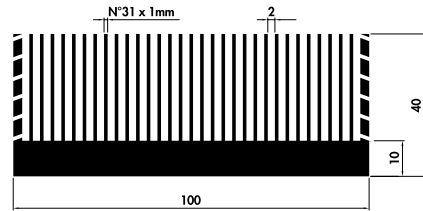


Profilmecce & ProfilmeccePlus

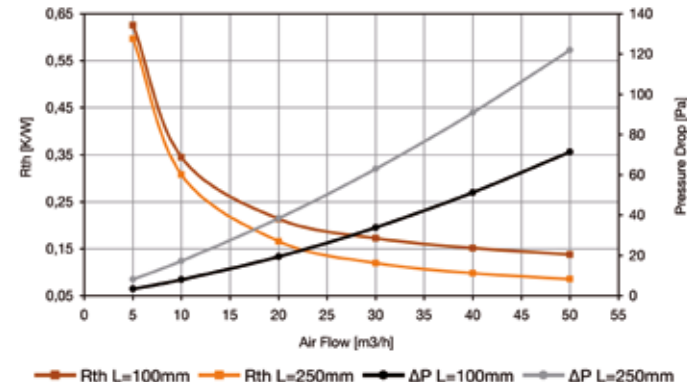
Profilmecce & ProfilmeccePlus

I profili presentati sono solo alcune delle innumerevoli soluzioni possibili
The presented profiles are just a few of the possible heat sink configurations

Meccal
h e a t s i n k s

**Pm100 40**

Weight: 5,21 Kg/m

**Pm+100 40**

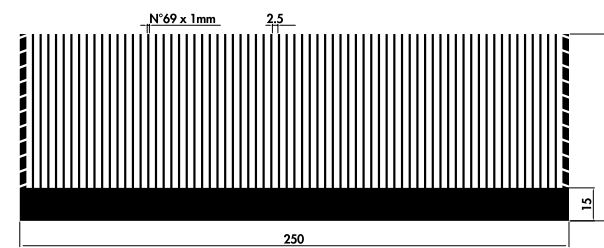
Weight: 5,62 Kg/m

Meccal
h e a t s i n k s

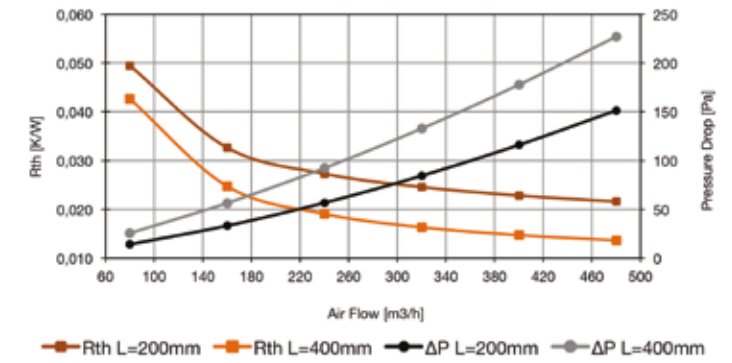
Profilmecce & ProfilmeccePlus

Profilmecce & ProfilmeccePlus

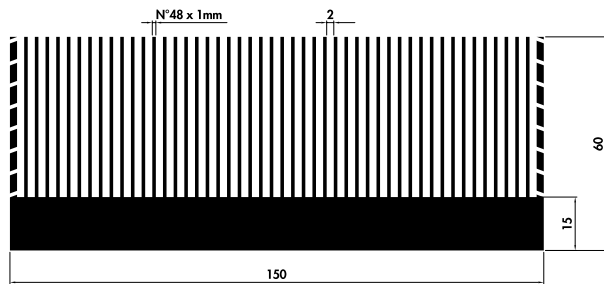
I profili presentati sono solo alcune delle innumerevoli soluzioni possibili
The presented profiles are just a few of the possible heat sink configurations

**Pm250 85**

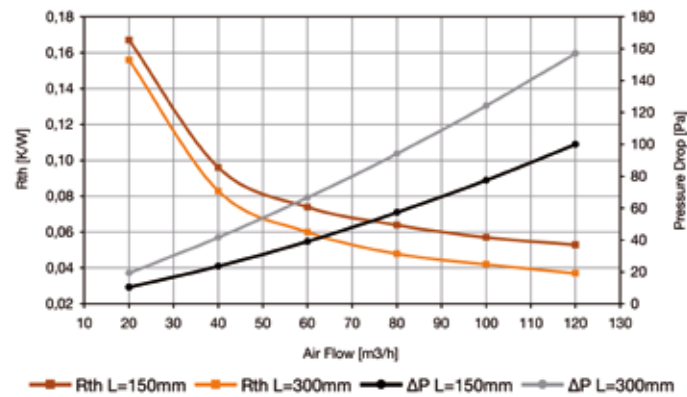
Weight: 23,17 Kg/m

**Pm+250 85**

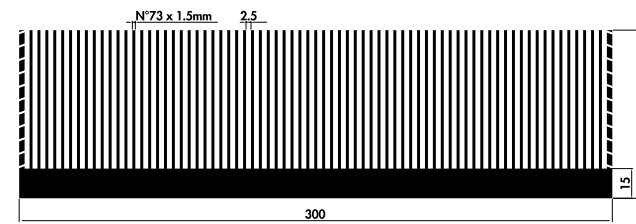
Weight: 24,30 Kg/m

**Pm150 60**

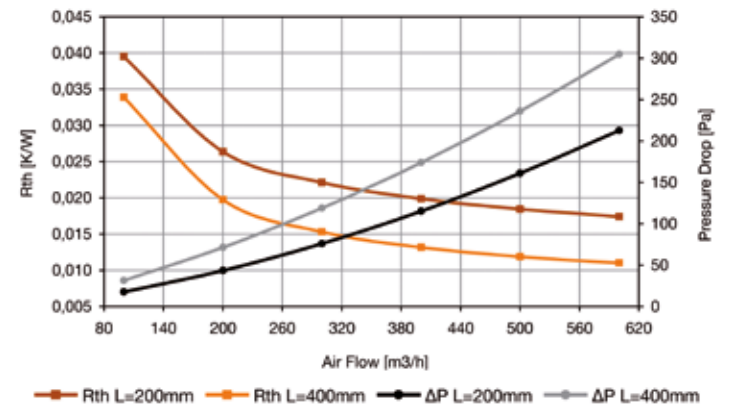
Weight: 11,18 Kg/m

**Pm+150 60**

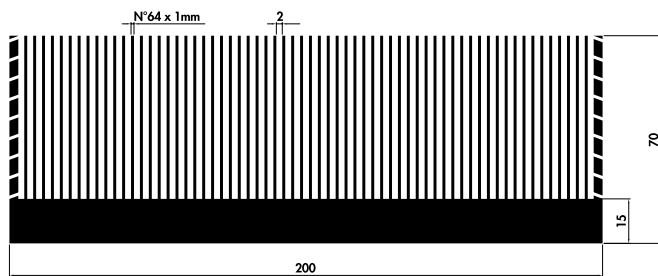
Weight: 12,39 Kg/m

**Pm300 85**

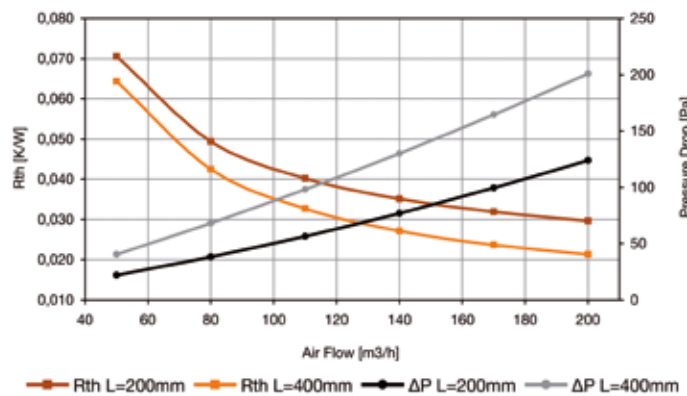
Weight: 32,85 Kg/m

**Pm+300 85**

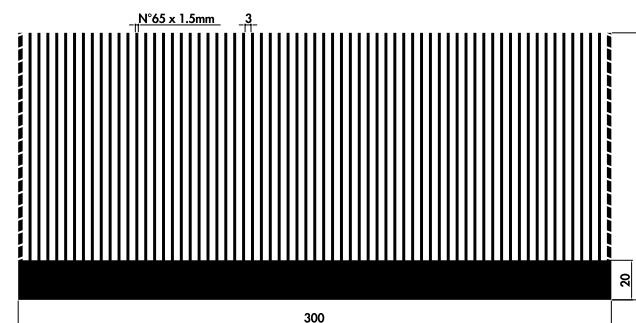
Weight: 33,89 Kg/m

**Pm200 70**

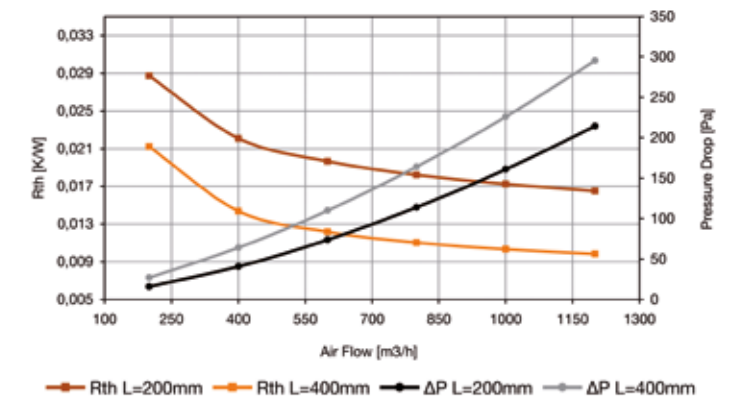
Weight: 17,60 Kg/m

**Pm+200 70**

Weight: 18,50 Kg/m

**Pm300 135**

Weight: 17,60 Kg/m

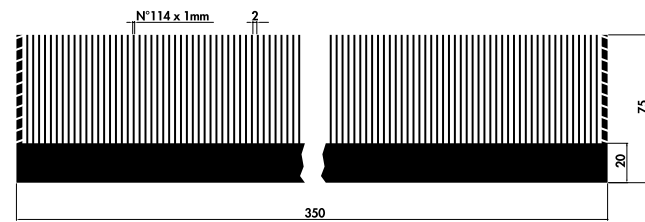
**Pm+300 135**

Weight: 47,87 Kg/m

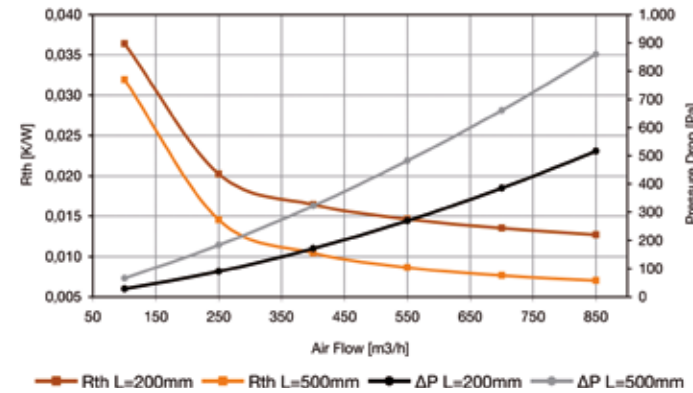
Profilmecc & ProfilmeccPlus

Profilmecc & ProfilmeccPlus

I profili presentati sono solo alcune delle innumerevoli soluzioni possibili
The presented profiles are just a few of the possible heat sink configurations

**Pm350 75**

Weight: 35,83 Kg/m

**Pm+350 75**

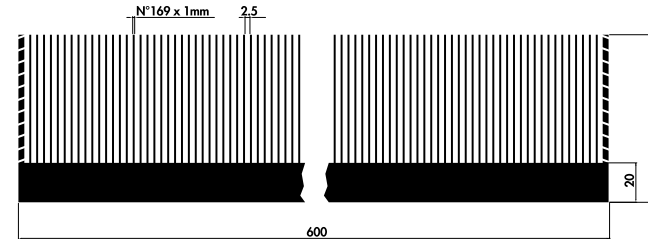
Weight: 36,72 Kg/m



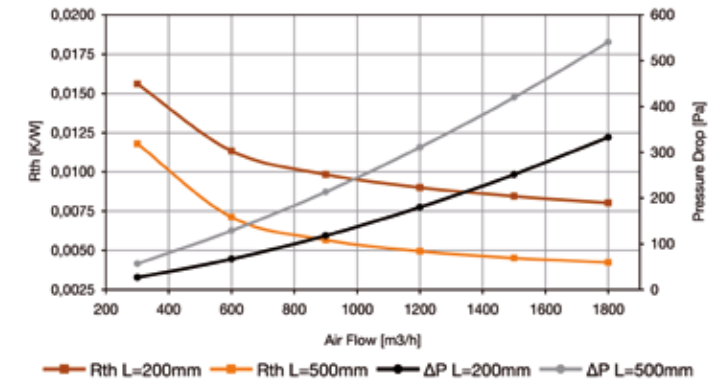
Profilmecc & ProfilmeccPlus

Profilmecc & ProfilmeccPlus

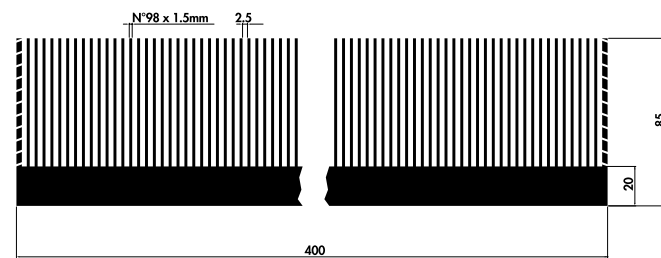
I profili presentati sono solo alcune delle innumerevoli soluzioni possibili
The presented profiles are just a few of the possible heat sink configurations

**Pm600 85**

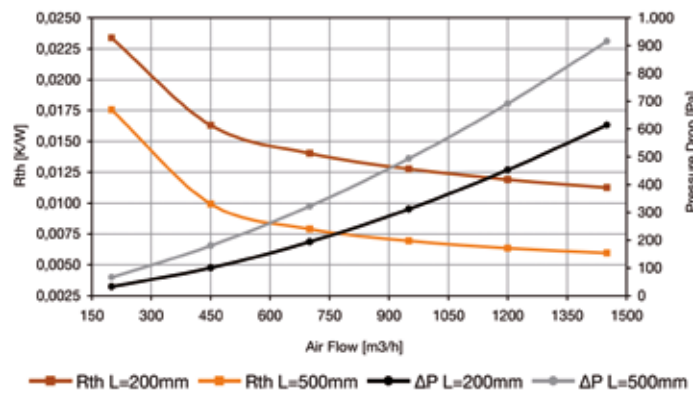
Weight: 62,06 Kg/m

**Pm+600 85**

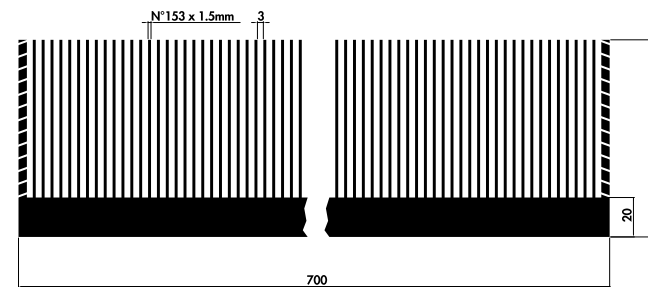
Weight: 63,11 Kg/m

**Pm400 85**

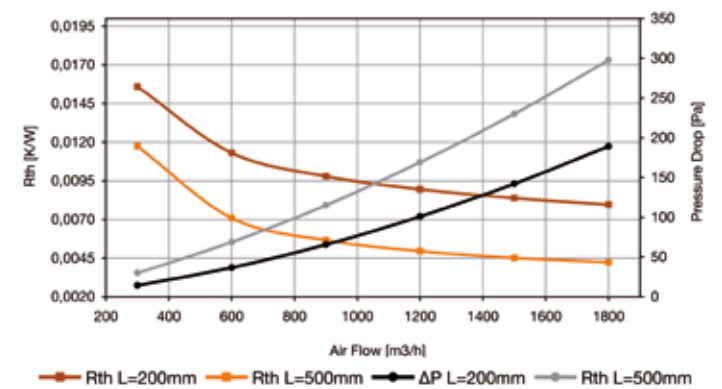
Weight: 47,40 Kg/m

**Pm+400 85**

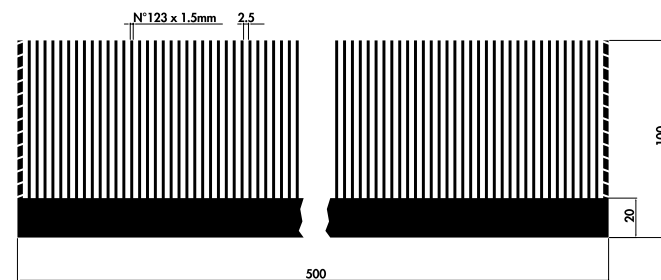
Weight: 48,36 Kg/m

**Pm700 100**

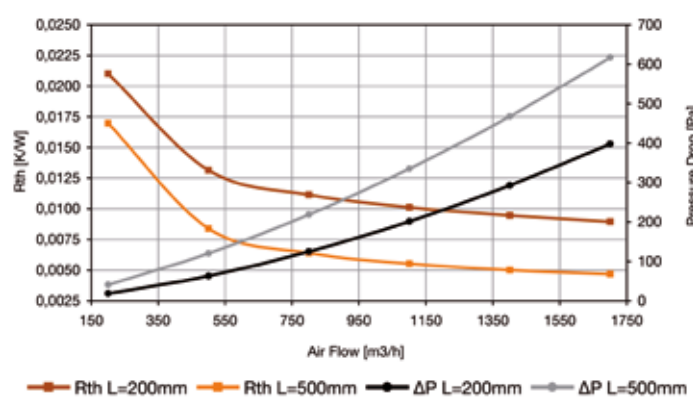
Weight: 87,37 Kg/m

**Pm+700 100**

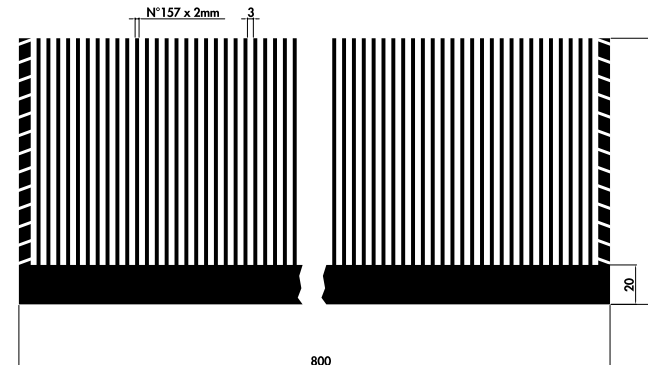
Weight: 89,21 Kg/m

**Pm500 100**

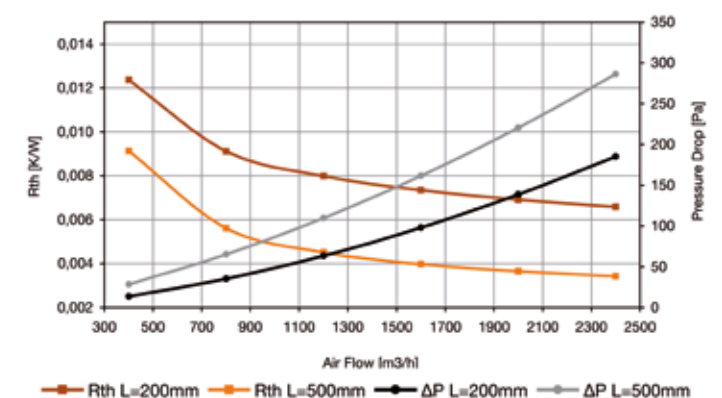
Weight: 66,85 Kg/m

**Pm+500 100**

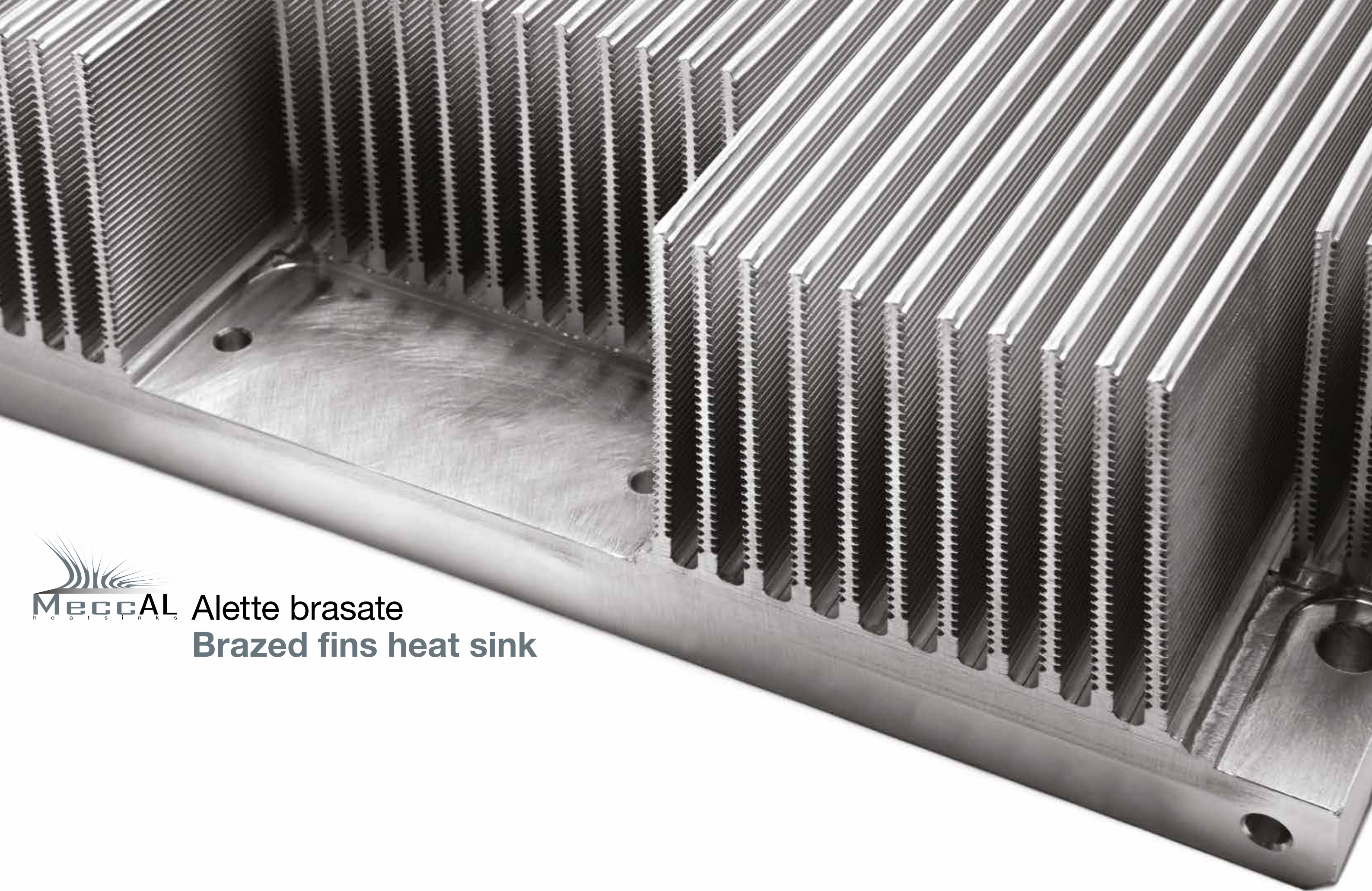
Weight: 68,04 Kg/m

**Pm800 135**

Weight: 140,70 Kg/m

**Pm+800 135**

Weight: 144,42 Kg/m



Alette brasate
Brazed fins heat sink

Alette brasate

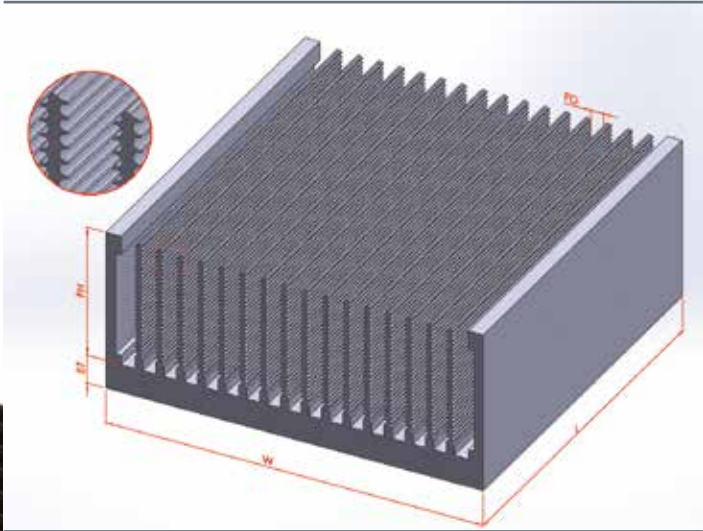
Brazed fins heat sink

Dimensional specifications

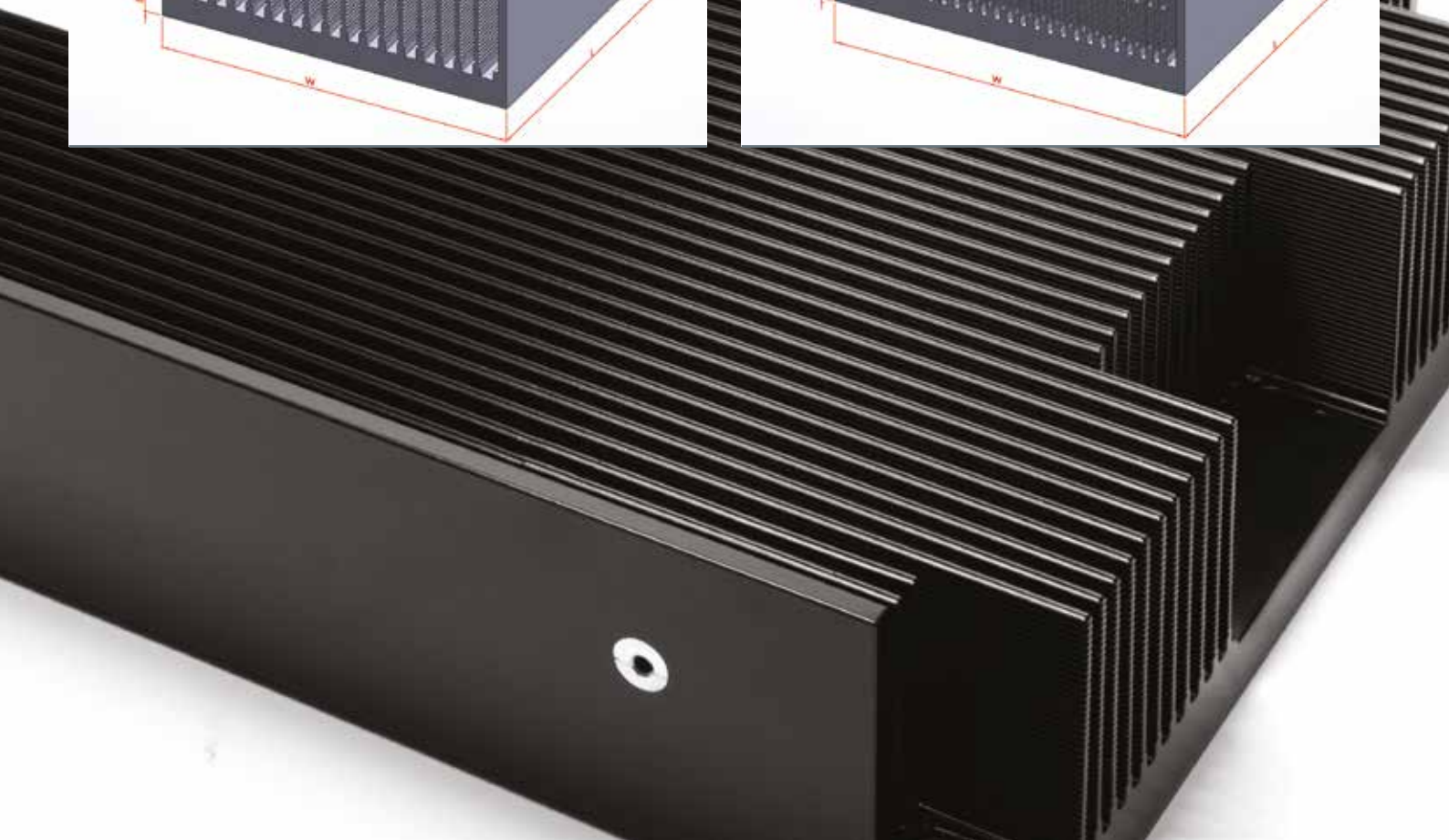
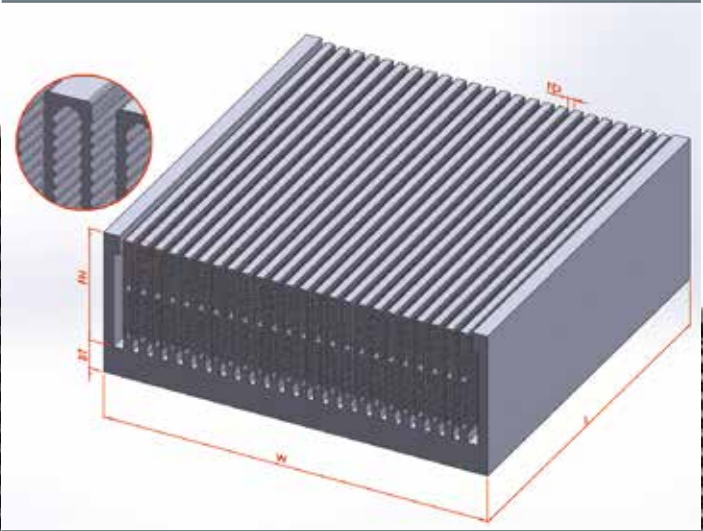
Heatsink Width (W)	max 1000 mm (single piece, without welding)
Heatsink Length (L)	max 1000 mm
Base Thickness (BT)	5 ÷ 35 mm
Fin Height (FH)	max 150 mm
Fins Distance (FD)	min 2 mm

Aspect Ratio (FH/FD)	max 75:1
Tolerances on dimensions and machining	ISO 2768-mK
Fins Material	EN AW-1050A
Side Fins Material	EN AW-6060
Base Material	EN AW-1050A or EN AW-6060

serie **PBS**



serie **PBH**



Alette brasate

Brazed fins heat sink

Alette Ondulate
Corrugated Fins

S68.5

Kg/mt: 0.476



Alette Ondulate
Corrugated Fins

S78.5

Kg/mt: 0.541



Alette Ondulate
Corrugated Fins

S98.5

Kg/mt: 0.671



Alette Ondulate
Corrugated Fins

S110.5

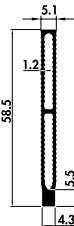
Kg/mt: 0.754



Alette Scatolate
Hollow Fins

H58.5

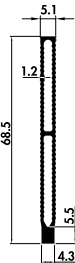
Kg/mt: 0.424



Alette Scatolate
Hollow Fins

H68.5

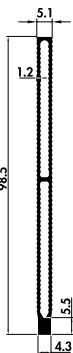
Kg/mt: 0.485



Alette Scatolate
Hollow Fins

H98.5

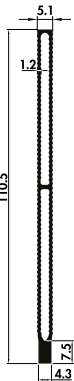
Kg/mt: 0.677



Alette Scatolate
Hollow Fins

H110.5

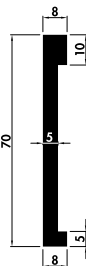
Kg/mt: 0.764



Fianchi
Side Fins

SF70

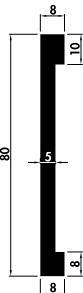
Kg/mt: 1.066



Fianchi
Side Fins

SF80

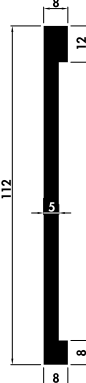
Kg/mt: 1.226



Fianchi
Side Fins

SF112

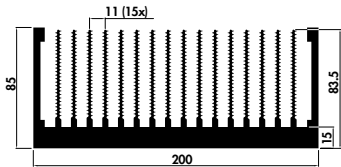
Kg/mt: 1.674



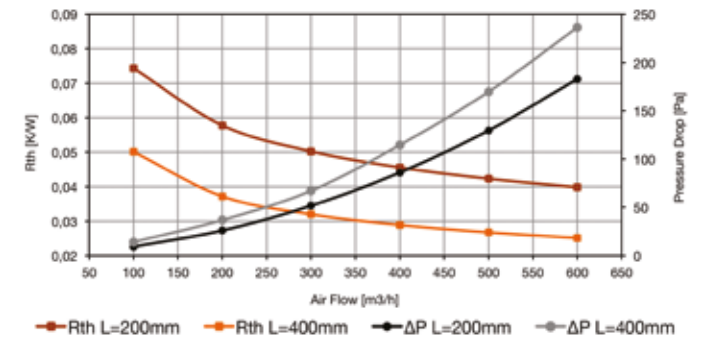
Alette brasate

Brazed fins heat sink

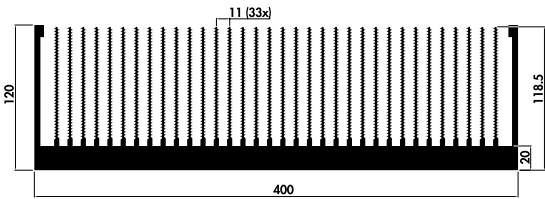
PBS200 85
Weight: 17,85 Kg/m



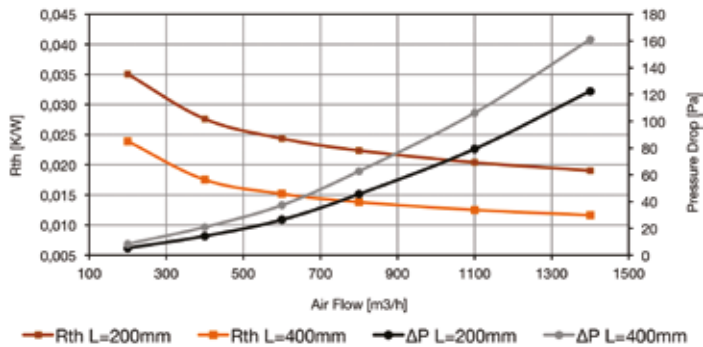
L [mm]	100	200	300	400
Rth,N (K/W)	0,449	0,278	0,210	0,172



PBS400 120
Weight: 47,31 Kg/m



L [mm]	200	300	400	500
Rth,N (K/W)	0,134	0,101	0,083	0,071

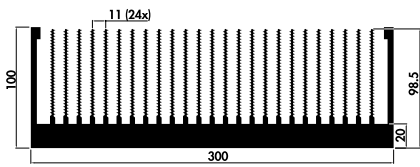


serie **PBS**

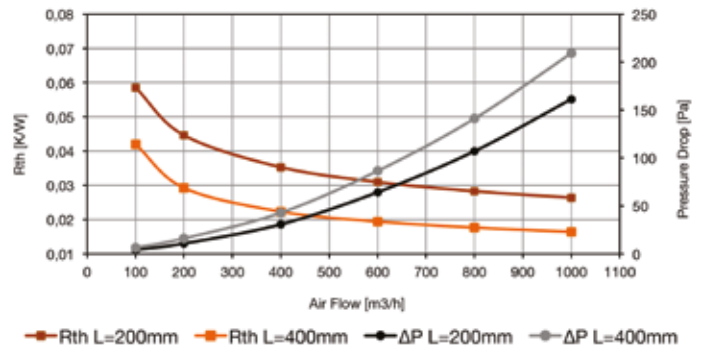
I profili presentati sono solo alcune delle innumerevoli soluzioni possibili
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h e a t s i n k s

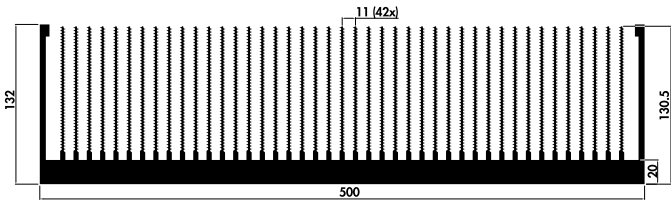
PBS300 100
Weight: 32,18 Kg/m



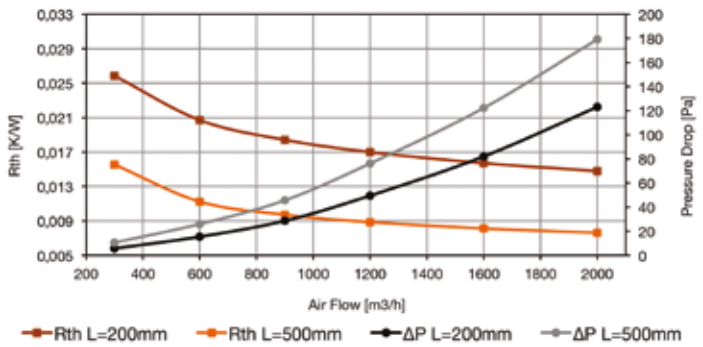
L [mm]	200	300	400	500
Rth,N (K/W)	0,191	0,144	0,118	0,101



PBS500 132
Weight: 62,79 Kg/m



L [mm]	200	300	400	500
Rth,N (K/W)	0,107	0,081	0,066	0,057

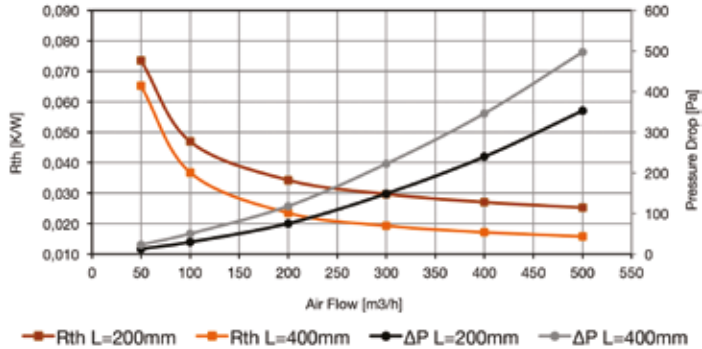
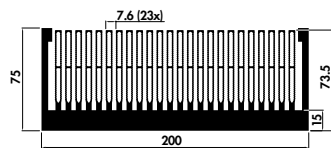


serie **PBH**

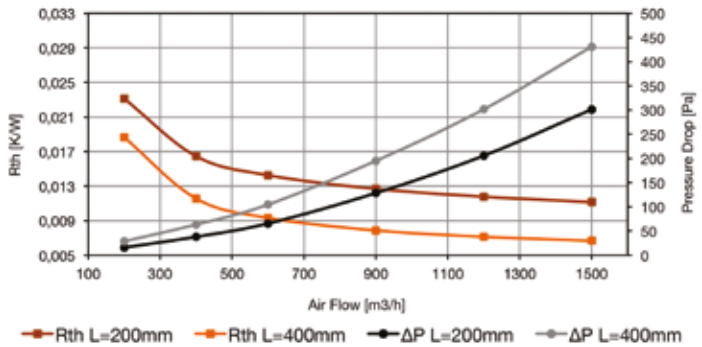
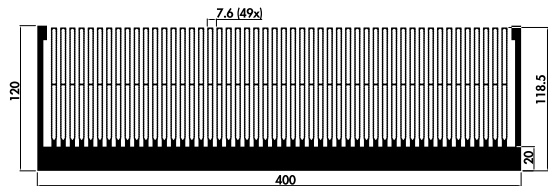
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h e a t s i n k s

PBH200 75
Weight: 20,07 Kg/m



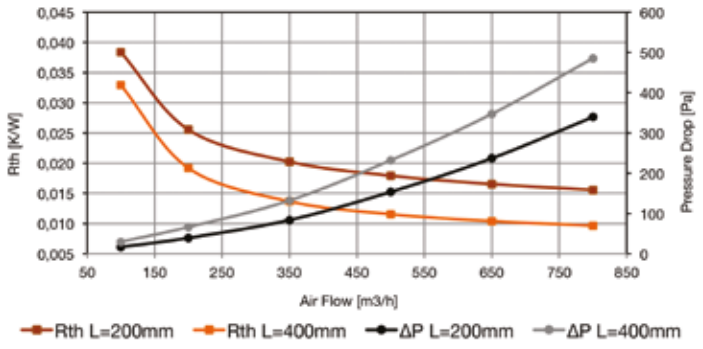
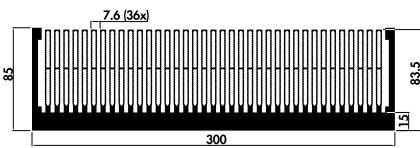
PBH400 120
Weight: 58,36 Kg/m



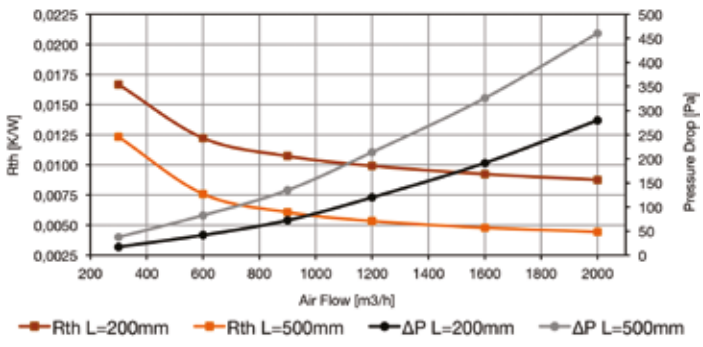
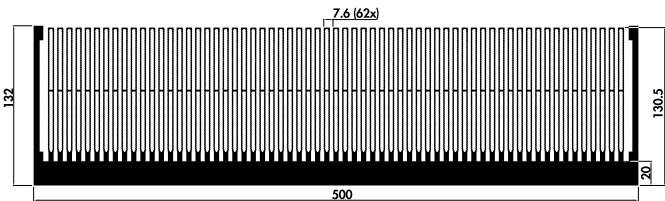
Alette brasate

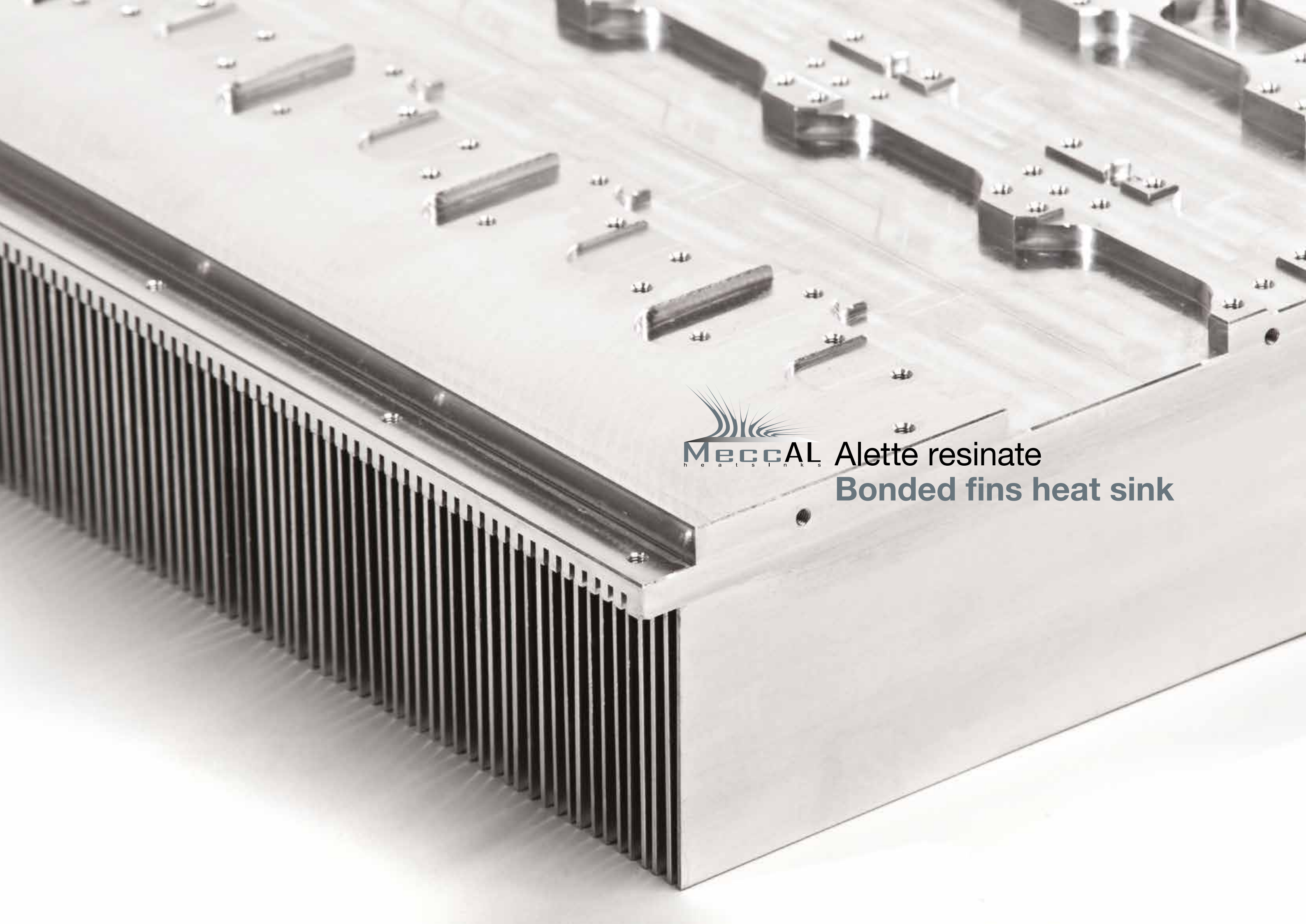
Brazed fins heat sink

PBH300 85
Weight: 32,24 Kg/m



PBH500 132
Weight: 78,51 Kg/m



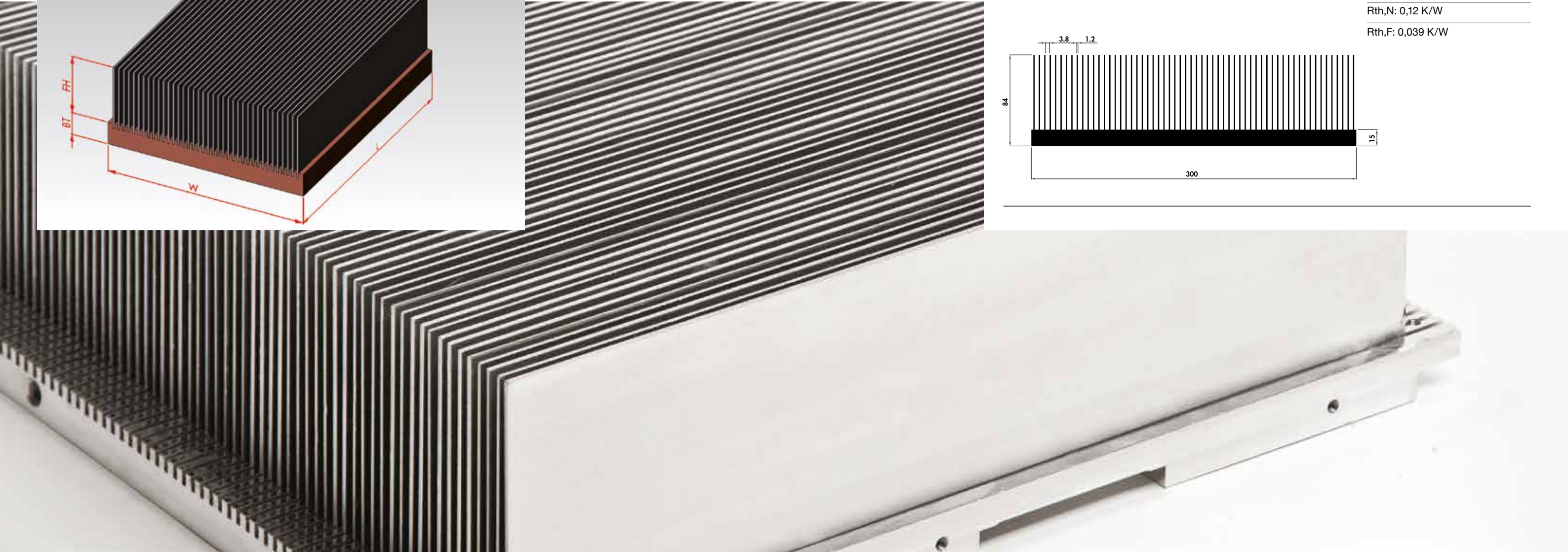
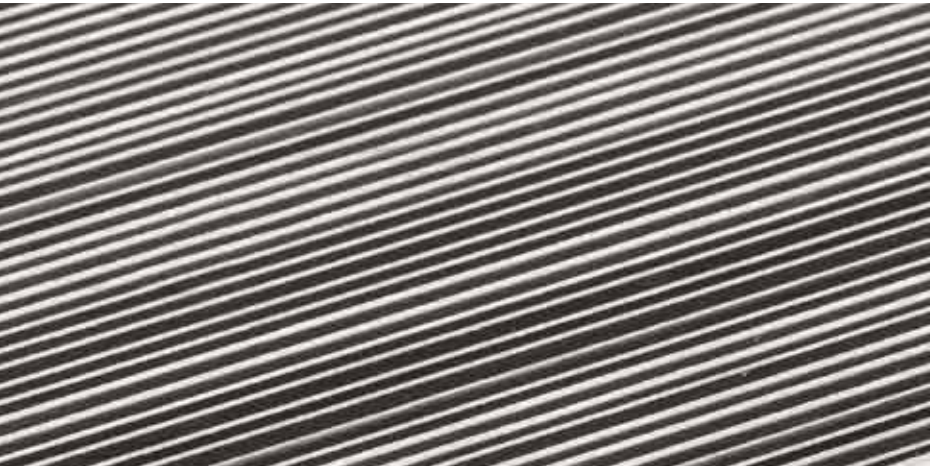
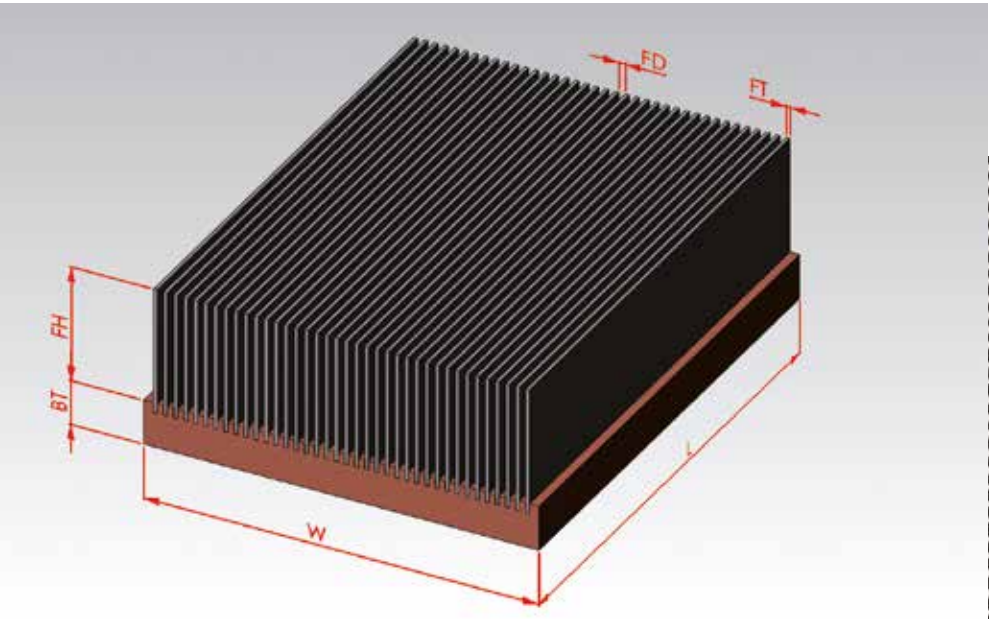


Alette resinate
Bonded fins heat sink

Alette resinate

Bonded fins heat sink

Heat sink Width (W)	<= 500 mm (Single piece, without welding)
Heat sink Lenght (L)	<= 700 mm
Base Thickness (BT)	>= 8 mm
Fins Height (FH)	<= 150 mm
Fins Thickness (FT)	<= 3 mm
Fins Distance (FD)	>= 3 mm
Material Base-Fin	Aluminium-Aluminium Copper-Aluminium Copper-Copper

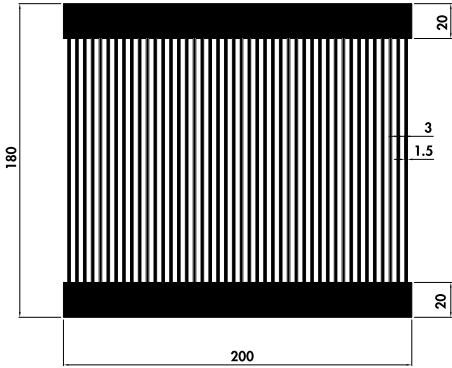


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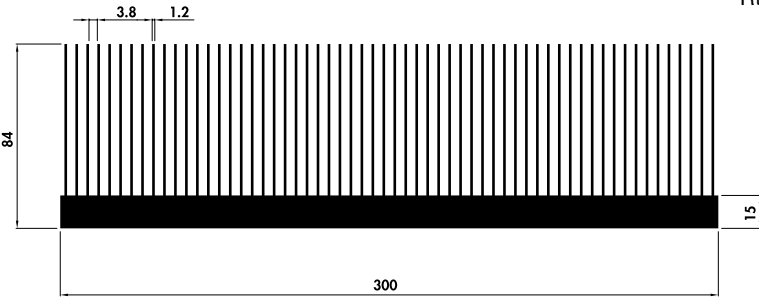
Alette resinate

Bonded fins heat sink



PR200 180

Kg/mt: 46,55
L: 200 mm
Rth,N: 0,12 K/W
Rth,F: 0,040 K/W



PR300 84

Kg/mt: 25,55
L: 300 mm
Rth,N: 0,12 K/W
Rth,F: 0,039 K/W

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qb comunicazione, Fano

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Photo
Foto Art, Fano

Stampa
Print
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