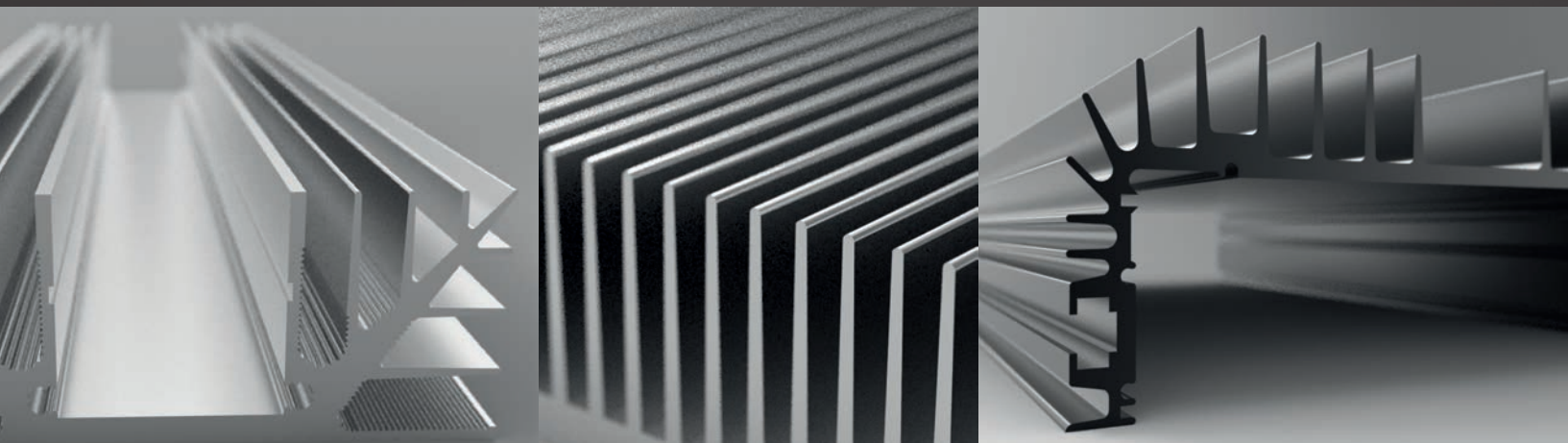




HLINÍKOVÉ CHLADIČE

ALUMINIUM HEATSINKS



PRODUCT CATALOGUE

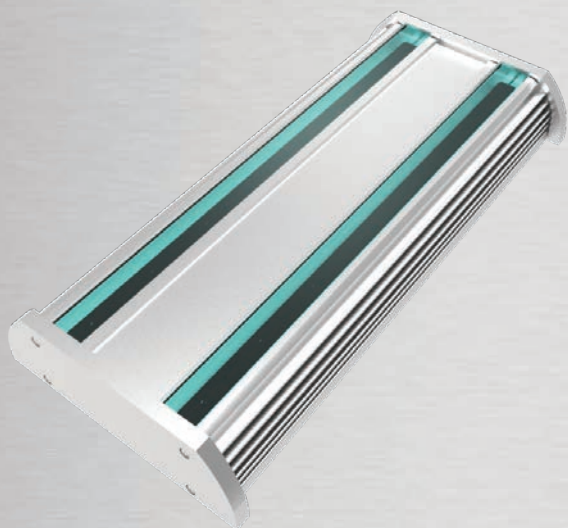
KATALÓG PRODUKTOV

Company ISO 9001, 14001 and OHSAS 18001 certified.

PRETVÁRAME HLINÍKOVÝ PROFIL NA DOKONALÝ PRODUKT

STREETIT

Uličné LED svietidlo vyniká
svojim jedinečným dizajnom.
Funkčné teleso svietidla
dokonale chladí zdroje LED
OSRAM, ktoré "distribujú"
svetlo pomocou stredne
uličnej optiky vhodnej pre
cesty 1. triedy, ulice, chodníky
a parkoviská,



GAMAEKO profil HY 25511

Downlight GAMAEKO svojou
"anti-vandal" koštrukciou a nízkou
energetickou náročnosťou, osvetlí
priestory chodieb, telocviční,
podchodov alebo pracovných
priestorov.

GAMAE^T profil HY 25785

Interiérové svietidlo GAMAE^T
so širokou ponukou
príslušenstva štýlovo nasvieti
schodiská, showroom alebo
dokonale zvýrazní vaše
exponáty.



Rastieme s Vami...

tak možno hodnotiť vývoj našej spoločnosti za rok 2014. Áno narástli sme. Tak do objemu investícií, technológii a samozrejme aj personálne. Verím, že v tomto duchu budeme pokračovať aj v roku 2015.

Dostáva sa Vám do rúk katalóg chladičov a hliníkových profilov, ktorých sortiment v rubrike štandardných profilov narástol. V objeme zákazoch sme zaznamenali progres v zavedení nových zákazníckych profilov, čo potvrdzuje naše kvality, spoľahlivosť a stabilitu na trhu. Narástli sme aj v množstve spracovaných profilov, pribudli noví zákazníci a perspektívne zahraničné trhy. Ako novinku uvádzame rad LED svietidiel GAMABay. Aj v tomto vydaní katalógu chladičov sa o nich zmieňujeme. „Lightingu“ sa už venujeme nejaký čas, a práve teraz uvádzame na trh LED svietidlá, ktoré rovnakou „filozofiou“ konštrukcie pokrývajú ponuku uličného osvetlenia a priemyselných aplikácií. Teleso svietidiel ako aj celý koncept je z dielne GAMAaluminium. Pri vývoji intenzívne spolupracujeme so spoločnosťou OSRAM, pričom sú svietidlá osadené modernými LED zdrojmi OSRAM. Svietidlá dosahujú vysoký úroveň kvality, či už po dizajnovej stránke, stránke mechanickej ako aj po stránke elektronickej výbavy.

Naším cieľom je aj v roku 2015 pokračovať v nastúpenom trende rastu. Pripravujeme výstavbu nového skladu materiálu, ďalší nákup CNC stroja a ostatnej podpornej technológie. Toho roku finalizujeme a spúšťame vývojové pracovisko merania tepelnej charakteristiky chladičov. Personálne posilníme aj oblasť výroby LED svietidiel, kde chceme priniesť na trh nové, vlastné svietidlá určené do exteriéru ako aj do interiéru. Samozrejmosťou je kvalita. Sme držiteľmi certifikátu kvality, ktorý neustále udržiavame a prispôbujeme požiadavkám zákazníkov. Pre skvalitnenie služieb zdokonaľujeme a integrujeme informačný systém GAMA.

Verím, že úsilie namierené na podporu služieb a vývoj nových produktov zužitkujeme tak, aby aj rok 2015 bol rastom nášho partnerstva s Vami.

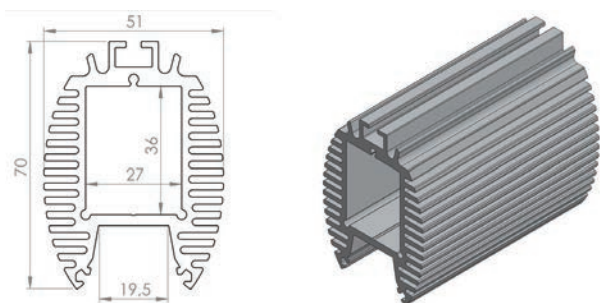
Marián Gahír
majiteľ spoločnosti

Od hliníkového profilu po finálny výrobok

Disponujeme modernými strojnými zariadeniami, automatickými pilami, flotilou CNC obrábacích centier, zvaracím robotom, gravírovačkou až po zariadenia na anodickú oxidáciu hliníka (elox). To znamená, že Vám vieme sprostredkovať kompletnú zákazku od pílenia až po povrchovú úpravu.

Profily na sklade

GAMAaluminium disponuje viac ako stovkou vlastných lisovacích foriem po celej Európe. Medzi nimi nájdete veľký výber z chladičových, krabicových alebo konštrukčných profilov. Stačí si len vybrať.



Zákaznícke profily

Nenašli ste vhodný profil? Dokážeme Vám sprostredkovať vlastný profil bez podmienky minimálneho odberného množstva. Jednoducho, navrhnete profil a pošlite výkres.

Pílenie hliníkových profilov

Pílenie ako najjednoduchšiu a zároveň najčastejšiu požiadavku na výrobu, obslúžia na našom pracovisku 3 kotúčové píly. Zabezpečíme tak pílenie profilov zo štandardných dĺžok 2, 4 a 6m priamo s nášho skladu na množstvo, ktoré potrebujete.

CNC opracovanie

CNC opracovanie je najvhodnejší spôsob ako s presnosťou opracovať hliníkové chladiče podľa Vašich požiadaviek. Našich 8 CNC centier v prevádzke uspokojí zákazky včas a v požadovanej kvalite.

Robotizované zváranie

Potrebujete veľkoformátový chladič alebo výrobok nadrozmerných tvarov? Nie je problém. Disponujeme automatickým zvaracím robotom ktorý dokáže spojiť viac kusov chladičov a tým vytvoriť jeden veľký. Máme zákazky na veľké chladiče, používané v trakčných systémoch elektrických vozidiel. Jednoducho na veľkosti skutočne nezáleží.

Eloxovanie a titanovanie

Je dôležitou súčasťou finálnych výrobkov. Zabráni prirodzenému oxidovaniu hliníka vplyvom atmosférického kyslíka na hliník, ktorá je závislá od vplyvu prostredia a času. Podľa toho sa mení vrstva oxidu, vzhľad hliníkového materiálu jeho tepelná vodivosť a farebná stálosť. Okrem funkčnej stránky spĺňa aj estetické požiadavky po aplikácií vhodnej povrchovej úpravy. Realizujeme povrchovú úpravu v odtieňoch prírodná, čierna, zlatá, modrá, červená ...



Kvalita

Neustále sa rozvíjame a rastieme v oblasti technického rozvoja v oblasti personálnej, ako aj v oblasti zlepšovania kvality poskytovaných služieb, čo dokazuje aj získanie a udržiavanie systému kvality. Sme držiteľmi certifikátov ISO 9001:2008, ISO 14001:2004, ISO 18001:2007.

Editorial

We grow with you ...

By these words we can evaluate the development of our company for the year 2014. Yes, our structures have extended. Especially in area of investment, technology and of course the staff. I believe that we will continue to develop in this spirit in the year 2015.

You get into your hands the catalog of of coolers and aluminum profiles, which range in the section of the standard profiles has risen. In the area of orders we have seen a progress in the introduction of new customer profiles, which confirms our quality, reliability, and stability on the market. We have also increased in quantity of processed profiles, we gained new customers and new promising foreign markets have been achieved. As a novelty, we introduce a series of GAMABay LED lamps . Also in this edition of the coolers catalog we mention them. We are dealing with "Lighting" for some time, and right now we are launching the LED lighting, which with the same "philosophy" of construction cover an offer of street lighting and industrial applications. The body of the lamps as well as the whole concept is consists of GAMA aluminum. Our development is based on an intensive cooperation with the company OSRAM, however the lightnings are equipped with modern LED resources OSRAM. The lightning achieve a high level of quality fixtures, whether from the design aspect or mechanical as well as from an electronic equipment aspect.

Our goal in the year 2015 is to continue the growth trend. We are preparing to build a new store, further purchase of CNC machine and other supporting material technology. This year, we are finishing and launching a development workplace for a measurement of thermal coolers characteristics. We also engage more stuff also in the LED lamps production area, where we want to bring to the market new, custom lighting fixtures for exterior as well as interior design. The quality is a certainty. We hold a certificate of quality, that we constantly maintain and adapt to the customers' requirements. For the improvement of services and we are improving the information GAMA system.

I believe that the efforts made to promote the development of new products and services will be used so that the year 2015 would be the year of our partnership growth.

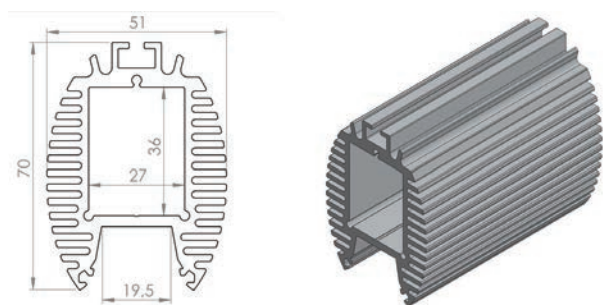
Marián Gahr
owner of the company

From aluminum profile to the final product.

We dispose with the modern machinery, automatic saws, a fleet of CNC machining centers, welding robot, engraving equipment to the anodic oxidation of aluminum (anodized). This means that we can arrange a complete order from sawing to surface treatment finish.

Large selection of profiles available at stock

GAMAaluminium owns more than a hundred of custom extrusion tools over Europe. Among them you will find a great selection of heatsink, boxed or structural profiles. Just choose.



Customers profile

Haven't you found a suitable one? Don't worry. We can, as one of the few companies, mediate your own profile with no conditions for the minimum order amount.

Al Profile sawings

Three circular cutters provide for sawing as the easiest and most frequent production request. We offer sawing of profiles from standard 2,4 and 6 m length directly taken from our warehouse in required amount.

CNC machining

CNC machining refers to the most suitable way of precise Al-heatsinks machining as required. Our eight CNC centers can satisfy your orders in a timely manner and required quality.

Robotic welding

Need large format heatsink or product oversized shapes? There is no problem. We dispose of an automatic welding robot that can combine multiple pieces of heatsinks and thereby create one large. We have a contract for a large cooler, used for traction systems of electric vehicles. Simply, the size really does not matter.

Aluminum surface treatment

This procedure is an important part of finished products, eliminating natural oxidation of Aluminum caused by atmospheric Al, depending on the product's environment. The oxide layer and Al-material image changes with time upon environmental effects, causing change also to thermal conductivity and color stability of Al-materials. Along with functional aspect, Al-treatment meets also esthetic requirements after application of suitable surface treatment. We usually provide for natural and black surface treatment but also golden, blue or red, based on customer needs.



Quality

We develop and grow up constantly whether in technological development, in human resources field as well as in field of improving the quality of services. The proof of this is the maintenance of a quality system. We hold ISO 9001:2008, ISO 14001:2004, ISO 18001:2007.

Všeobecný popis

General description

Hliníkové chladiče

sa vyrábajú z lisovaných profilov, ktoré nakupujeme od rôznych domácich a zahraničných výrobcov. Profily nakupujeme a skladujeme v dĺžkach 2000 – 4000 mm.

Niektoré typy chladičov v aktuálnej ponuke sa môžu mierne líšiť od profilu uvedeného v katalógu, jedná sa hlavne o tvar rebier, môžu byť rovné alebo mierne zvlnené, hrúbka rebier a pod. Túto skutočnosť zo zákazníkom konzultujeme pred dodávkou.

Špecifická hmotnosť hliníka je 2,7 kg/dm³

Dodávané profily sú v súlade so smernicou RoHS

Normy

Hliníkové profily sú lisované podľa noriem EN 755-5 až 9. Tieto normy hovoria o prípustných odchýlkach skutočných profilov od menovitých hodnôt.

Materiál použitý na chladiče je AW6060 (Al Mg 0,7 Si) (ZH profily), príp. AW6063 (Al Mg Si) (ostatné profily), ktorých chemické zloženie zodpovedá hodnotám stanovených v norme EN 573-3.

Povrch profilov je podľa normy EN 755-1.

Pri opracovaní, pokiaľ nie sú vo výkresovej dokumentácii uvedené tolerancie a iné požiadavky, sa riadime všeobecnými toleranciami STN ISO 2768-1 triedy m, ktoré sa týkajú dĺžok , uhlov , rovinnosti ,zrazení hrán , povrchu a pod.

Ponúkame ...

Profily dodávame napílené na požadované dĺžky, môžeme ich opracovať na CNC strojoch podľa dodanej dokumentácie, chladiče v prípade potreby zvárame na robotizovanom pracovisku a ponúkame aj povrchovú úpravu eloxovaním (elox prírodný, čierny, žltý, červený, modrý) alebo titanovaním .

Na požiadanie vieme zabezpečiť v spolupráci so SAV Bratislava meranie tepelného odporu pre konkrétny chladič.

V prípade že si z našej ponuky nevyberiete žiadny chladič, vieme zabezpečiť výrobu nového profilu podľa vašej požiadavky, prípadne zabezpečiť Vám profil od iných dodávateľov.

Aluminium Heatsinks

are manufacturing from pressed profiles, which we buy from various domestic and foreign producers. The profiles we buy and store in lengths 2000 – 4000 mm.

Some types of heatsinks in the current offer may be slightly different from the profile specified in the catalog, mostly on the shape of the ribs - may be straight or slightly wavy, the thickness of the ribs and etc. This fact we consult with the customer before delivery.

A specific weight of aluminium is 2,7 kg/dm³

Supplied profiles are in accordance with the RoHS Directive

Standards

AL profiles are pressed according to a standard EN755-5 to 9. These standards speak about a tolerance of the actual profiles from the nominal values.

A material used for heatsinks is AW6060 (Al Mg 0,7 Si) (ZH profiles) or AW6060 (Al Mg Si) (other profiles) whose chemical composition corresponds to the values set down in standard EN 573-3.

A surface of the profiles is according to a standard EN 755-1.

Regarding to a machining, if the tolerance and other requirements are not mentioned in drawing documentation we follow the general tolerances STN ISO 2768 – 1 class m, concerning to a lengths, angles, flatness, deducting the edge, surface and etc.

We offered ...

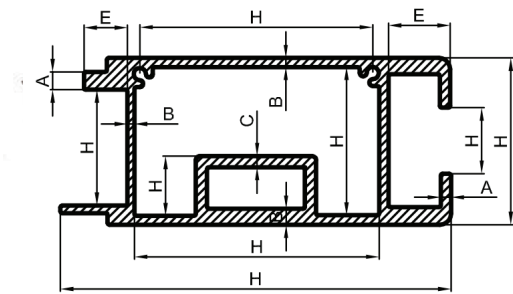
We deliver a profiles cutted with required lengths, they can be machined by CNC machines according to a received documentation, in case of need we weld a heatsink at welding robotic workstation and we offer the surface treatment as well (natural, black, yellow, red, blue) or titan.

On request we provide in cooperation with SAS Bratislava measurement of thermal resistance for a particular heatsinks.

In case you do not choose any heatsink from our offer, we are able to provide a produce of new profile according to your requirements or provide a profile from another suppliers.

Výpis z normy EN 755-9 – Profily, odchýlky rozmerov a tvaru
Extract of EN 755-9 – Profiles, tolerances of dimensions and shape

Odchýlky rozmerov / Allowance of dimensions



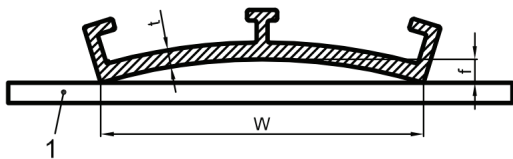
H – všetky rozmery okrem hrúbky steny
H – all dimensions except of the wall thickness

Rozmery v mm / Dimensions in mm

Rozmer H Dimension H		Odchýlky H pre opísanú kružnicu CD Allowance H for described circle CD				
nad over	do a vrátane to and inclusive	CD ≤ 100	100 < CD ≤ 200	200 < CD ≤ 300	300 < CD ≤ 500	500 < CD ≤ 800
-	10	± 0,25	± 0,30	± 0,35	± 0,40	± 0,50
10	25	± 0,30	± 0,40	± 0,50	± 0,60	± 0,70
25	50	± 0,50	± 0,60	± 0,80	± 0,90	± 1,0
50	100	± 0,70	± 0,90	± 1,1	± 1,3	± 1,5
100	150	-	± 1,1	± 1,3	± 1,5	± 1,7
150	200	-	± 1,3	± 1,5	± 1,8	± 2,0
200	300	-	-	± 1,7	± 2,1	± 2,4
300	450	-	-	-	± 2,8	± 3,0
450	600	-	-	-	± 3,8	± 4,2
600	800	-	-	-	-	± 5,0

Odchýlky vypuklosti – vydutosti / Allowance of convexity

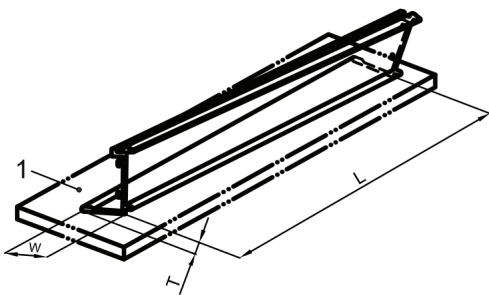
Rozmery v mm / Dimensions in mm



Šírka W Width W		Odchýlka f / Offset f		
		duté profily / tubular profiles		Plné profily
		Hrúbka steny t ≤ 5 Wall thickness t ≤ 5	Hrúbka steny t > 5 Wall thickness t > 5	Full profiles
nad over	do a vrátane to and inclusive			
-	30	0,30	0,20	0,20
30	60	0,40	0,30	0,30
60	100	0,60	0,40	0,40
100	150	0,90	0,60	0,60
150	200	1,20	0,80	0,80
200	300	1,80	1,20	1,20
300	400	2,40	1,60	1,60
400	500	3,00	2,00	2,00
500	600	3,60	2,40	2,40
600	800	4,00	3,00	3,00

Odchýlky skrútenia / Allowance of twist

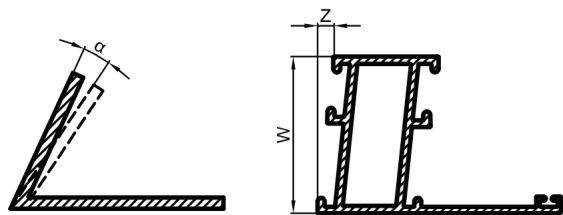
Rozmery v mm / Dimensions in mm



Šírka W Width W		Odchýlka f / Offset f		
		na 1 000 z dĺžky for 1000 of lenght	Na celkovej dĺžke L profilu Of total lenght L of profile	
			nad 1000 a vrátane 6000 over 1000 and inclusive 6000	nad 6000 over 6000
nad over	do a vrátane to and inclusive			
-	30	1,2	2,5	3,0
30	50	1,5	3,0	4,0
50	100	2,0	3,5	5,0
100	200	2,5	5,0	7,0
200	300	2,5	6,0	8,0
300	450	3,0	8,0	1,5 x L (L v metroch / in meter)
450	600	3,5	9,5	
600	800	4,5	10,0	

Odchýlky kolmosti / Allowance of perpendicularity

Rozmery v mm / Dimensions in mm



Šírka W Width W		Maximálna povolená odchýlka Z od pravého uhla Maximum allowable deviation Z from the right angle
nad over	do a vrátane to and inclusive	
-	30	0,4
30	50	0,7
50	80	1,0
80	120	1,4
120	180	2,0
180	240	2,6
240	300	3,1
300	400	3,5

allowance at an angle α other than the right is $\pm 1^\circ$

Meranie tepelného odporu chladičov (R_{th})

Tepelný odpor chladičov elektronických súčiastok je dôležitý údaj pre konštruktérov elektronických zariadení, ktorý umožňuje optimálne navrhnuť odvod stratového tepla súčiastky pri dodržaní jej maximálnej dovolenej pracovnej teploty a to pri minimalizácii rozmerov chladiča. Pri jednoduchších geometrických tvaroch je možné stanoviť tepelný odpor chladiča s dostatočnou presnosťou aj výpočtom, no pre komplexnejšie tvary so zložitým obtekaním vzduchu okolo chladiča je často potrebné uskutočniť meranie tepelného odporu.

Definícia tepelného odporu

Tepelný odpor chladiča R_{th} je definovaný ako podiel rozdielu maximálnej teploty chladiča T_{ch} a teploty okolitého vzduchu T_v k tepelnému výkonu P rozptyľovaného chladičom do okolia v rovnovážnom stave:

$$R_{th} = \frac{T_{ch} - T_v}{P}$$

Rovnovážny stav je stav, kedy dodávaný výkon do chladiča je rovný tepelnému výkonu rozptyľovaného chladičom do okolia. Z toho tiež vyplýva, že pri konštantnej teplote okolitého vzduchu sa teplota chladiča v rovnovážnom stave nemení. Ak tepelný výkon dodávaný chladiču je generovaný ako Joule-Lenzovo teplo vznikajúce ako tepelná strata na odpore R výhrevného telesa, ktorým preteká jednosmerný prúd I a vzniká na ňom úbytok napätia U , potom tepelný výkon dodávaný chladiču je rovný elektrickému výkonu dodávaného do výhrevného telesa:

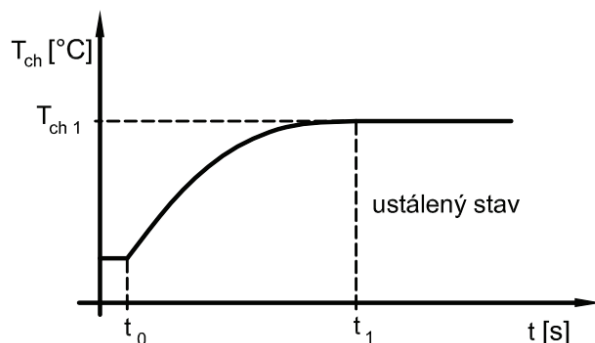
$$P = U \cdot I$$

Metóda merania

Do chladiča je pomocou elektrického výhrevného telesa počiňajúc časom t_0 dodávaný zvolený elektrický výkon, ktorý je so 100% účinnosťou transformovaný ako Joule-Lenzovo teplo na tepelný výkon. Teplota chladiča postupne narastá až dosiahne plató, ktoré signalizuje dosiahnutie rovnovážneho stavu.

Za tohto stavu je dodávaný elektrický výkon do výhrevného telesa rovný tepelnému výkonu, ktorý je rozptyľovaný chladičom do okolia. Za ustáleného stavu sú odmerané všetky veličiny potrebné pre výpočet tepelného odporu a následne je tepelný odpor chladiča vypočítaný podľa vzorca:

$$R_{th} = \frac{T_{ch} - T_v}{U \cdot I}$$



Grafické znázornenie priebehu nárastu teploty chladiča v čase

Pre jednoduchosť sa často v katalógoch s chladičmi udáva len jedna hodnota tepelného odporu R_{th} , zmeraná pri takom stratovom výkone, pri ktorom teplota chladiča za danej teploty okolitého vzduchu 20 °C dosiahne zvolenú hodnotu. Ak je chladič určený na chladenie bežných elektronických súčiastok, zvolenou hodnotou teploty býva najčastejšie teplota 75 °C.

Podmienky merania

- teplota chladiča 75 °C
- teplota okolitého vzduchu v rozsahu 20 až 22 °C
- tlak vzduchu v rozsahu 980 až 1020 hPa
- relatívna vlhkosť vzduchu 20 až 80 %
- normálne zloženie vzduchu (D 78%, O 21%, Ar 0,9%, CO₂ 0,03%)
- meranie R_{th} bolo uskutočnené bez umelej akcelerácie prúdenia vzduchu v okolí chladiča
- teplota vzduchu bola meraná vo vzdialenosti 50 mm pod spodným okrajom chladiča
- pri meraní tepelného odporu boli chladiče umiestnené tak aby bolo zabezpečené maximálne samovoľné prúdenie zohriateho vzduchu

Namerané výsledky tepelného odporu sú platné za spomenutých podmienok merania !!!

Tepelné odpory uvádzané v katalógu sú len informatívne.

Measurement of heatsinks thermal resistance (R_{th})

Thermal resistance of electronic parts heatsinks represents important information for electronic equipment constructors that allows for optimum design of the part thermal loss outlet upon maintaining the maximum working temperature limit of the part and minimized heatsink dimensions. In case of simpler geometric dimensions, it is possible to determine the heatsink thermal resistance with accurate calculation but it is often required to measure thermal resistance in case of more complex shapes with complicated air flow around the heatsink.

Definition of thermal resistance

Thermal resistance of heatsink R_{th} is defined as a proportion of difference of maximum heatsink temperature T_{ch} and ambient temperature T_v to thermal output P dispersed by the heatsink to surrounding area in the state of equilibrium:

$$R_{th} = \frac{T_{ch} - T_v}{P}$$

The state of equilibrium is a condition when power input in the heatsink equals to thermal output dispersed by the heatsink in surrounding area. Accordingly, heatsink temperature in the equilibrium status doesn't change at constant ambient temperature.

If thermal output supplied to the heatsink is generated as the Joule-Lenz heat generated as a thermal loss of heating body resistance R that DC current passes through/ voltage drop U occurs thereon, then thermal output supplied to the heatsink equals to electric output supplied to the heating body:

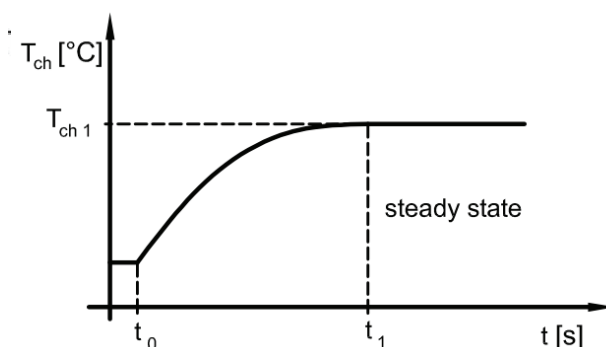
$$P = U \cdot I$$

Measurement method

Selected electric output is supplied to the heatsink beginning at the time t_0 , that is transformed as a Joule-Lenz heat to thermal output with 100% efficiency. The heatsink temperature gradually increases up to the level that signalizes reached equilibrium status..

In this condition, electric output supplied to heating body equals thermal output dispersed by the heatsink to the surrounding area. All parameters required to calculation of thermal resistance are measured at the status of equilibrium and subsequently, the heatsink thermal resistance is calculated according to the following formula:

$$R_{th} = \frac{T_{ch} - T_v}{U \cdot I}$$



Graphical illustration of heatsink temperature increase in real time.

For simplification purposes, the catalogue with heatsink often specify only one value of thermal resistance R_{th} , measured at such output loss when the heatsink temperature at ambient temperature 20 °C reaches the selected value. If a heatsink is intended to cool down common electronic parts, chosen temperature usually refers to 75 °C.

Measurement terms

- Heatsink temperature 75 °C
- Ambient temperature variance within 20 - 22 °C
- Air pressure within 980 - 1020 hPa
- Relative air humidity within 20 - 80 %
- Standard air composition (D 78%, O 21%, Ar 0,9%, CO₂ 0,03%)
- Measurement of R_{th} was conducted without artificial air flow acceleration around the heatsink
- Air temperature was measured at distance 50 mm under the bottom heatsink edge
- During thermal resistance measurement, the heatsinks were located so as maximum self-flowing of heated air was ensured.

Measured values of thermal resistance are valid upon the above-mentioned measurement conditions.

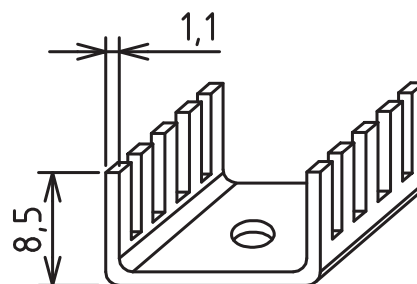
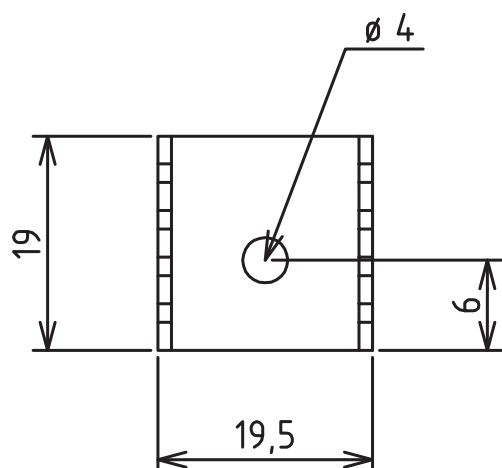
Thermal resistance values stated in the catalogue are only of information nature.

Currently, new measurements are conducted and the measurement values will be gradually completed.

ST-TE19

Povrchová úprava / Surface treatment : čierny / black elox

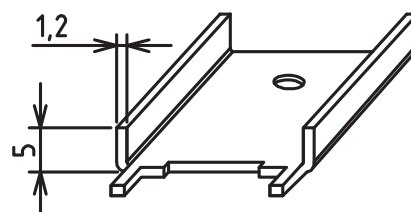
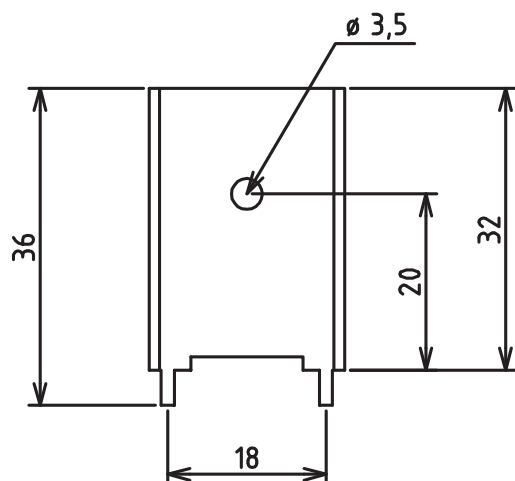
Rth: 55,0 °C/W



ST-T22

Povrchová úprava / Surface treatment : čierny / black elox

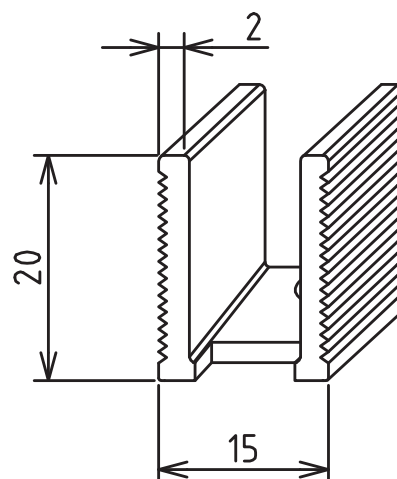
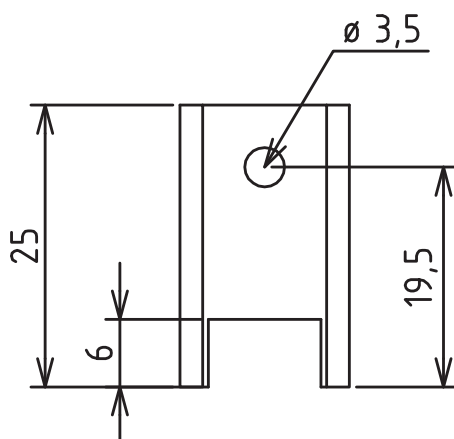
Rth: 22,0 °C/W



ST-T25A

Povrchová úprava / Surface treatment : čierny / black elox

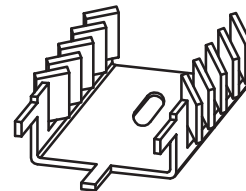
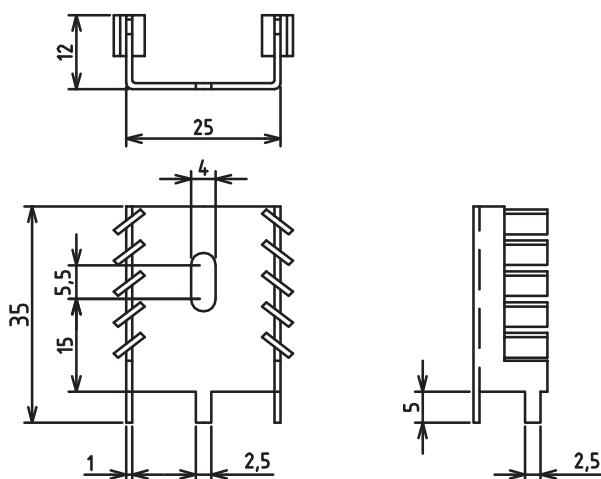
Rth: 18,0 °C/W



ST-TE28

Povrchová úprava / Surface treatment : čierny / black elox

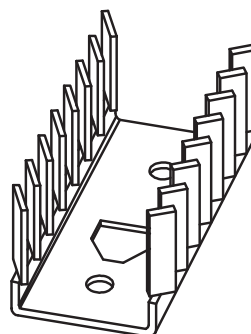
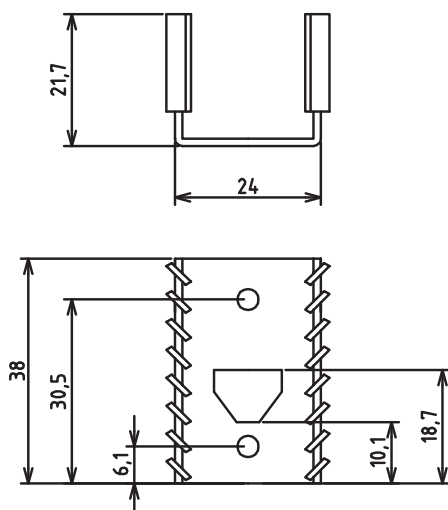
Rth: 14,0 °C/W



ST-TEA28

Povrchová úprava / Surface treatment : čierny / black elox

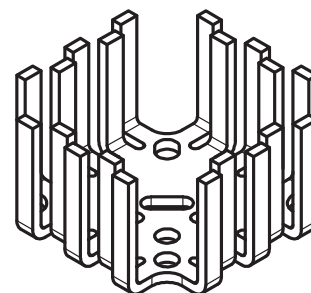
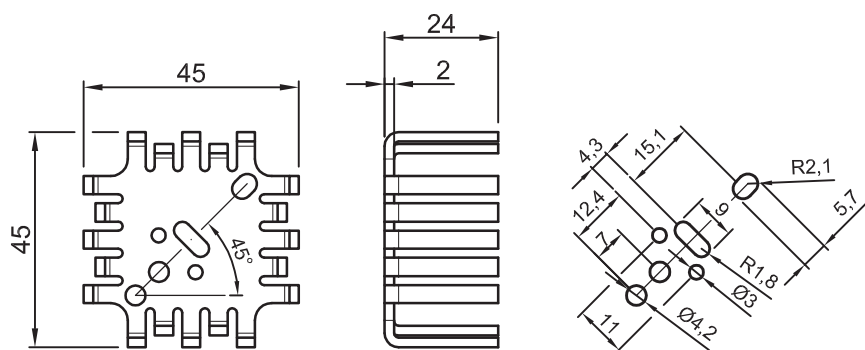
Rth: 15,0 °C/W



ST- 45FM

Povrchová úprava / Surface treatment : čierny / black elox

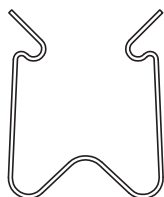
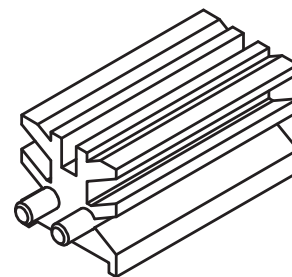
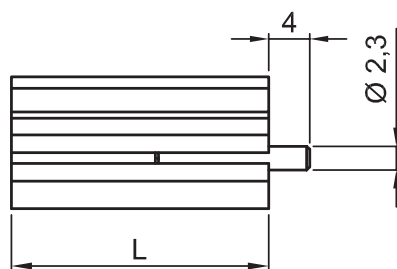
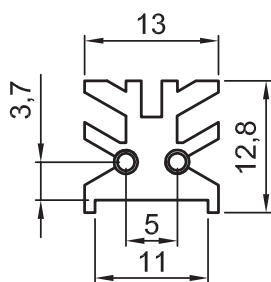
Rth: 7,7 °C/W



ST-T13/typ

Povrchová úprava / Surface treatment : čierny / black elox

Rth: 8,2 °C/W



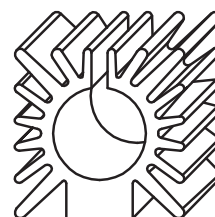
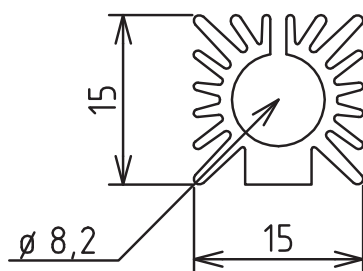
MOLLA T13

typ	L
25N	25
32N	32

ST-T19

Povrchová úprava / Surface treatment : čierny / black elox

Rth: 55,0 °C/W



Povrchová úprava / Surface treatment : čierny / black elox

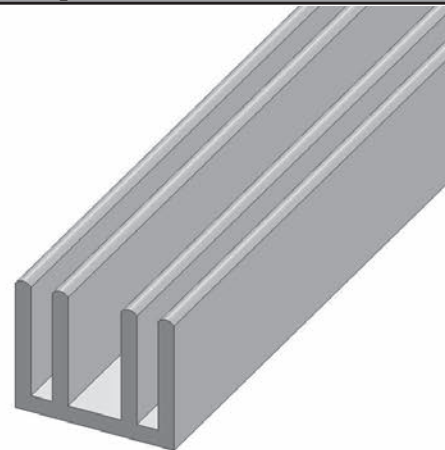
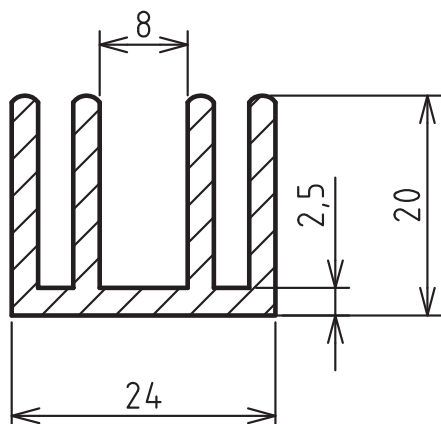
Rth: °C/W

HY 25417

hmotnosť / weight: 0,54 kg/m

obvod / perimeter: 190 mm

Rth (pre/for 100 mm): 4,8 °C/W

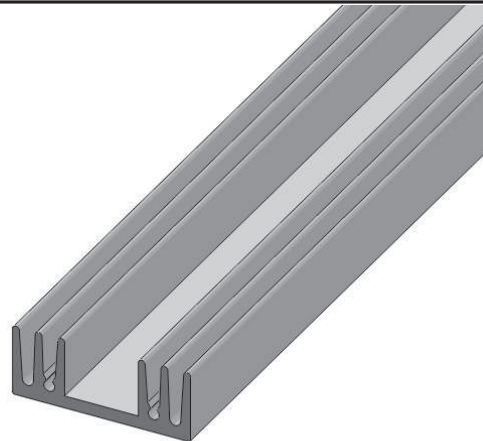
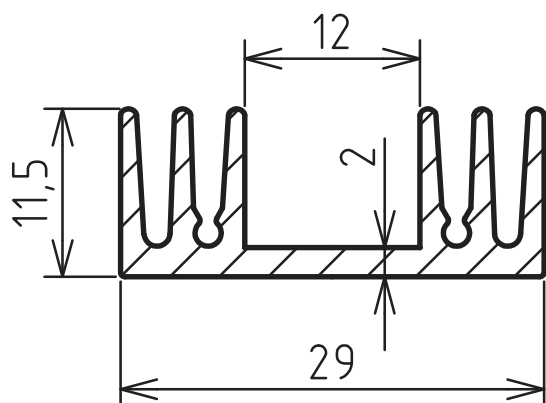


ZH 9025

hmotnosť / weight: 0,38 kg/m

obvod / perimeter: 167 mm

Rth (pre/for 100 mm): 6,3 °C/W

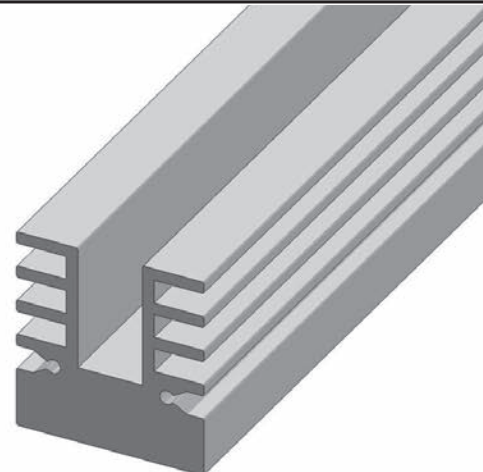
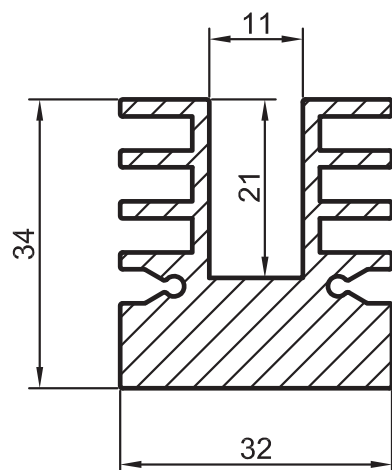


ZH 7503

hmotnosť / weight: 1,65 kg/m

obvod / perimeter: 300 mm

Rth (pre/for 100 mm): 4,0 °C/W

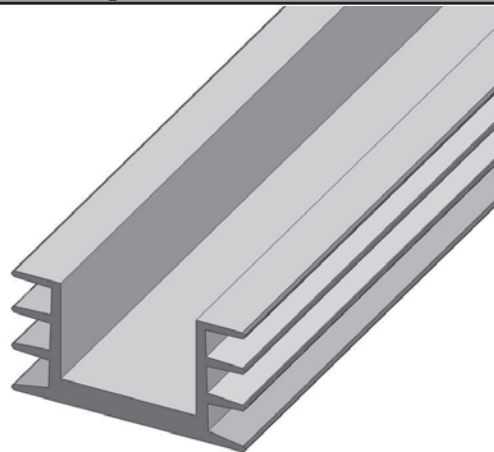
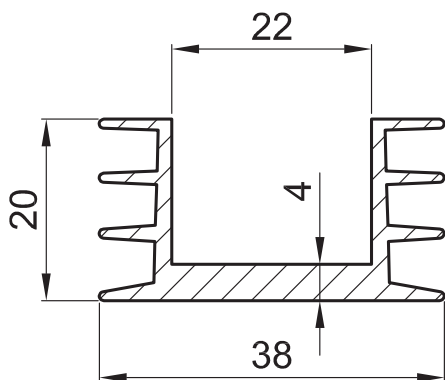


T 38

hmotnosť / weight: 0,62 kg/m

obvod / perimeter: 216 mm

Rth (pre/for 100 mm): 4,6 °C/W

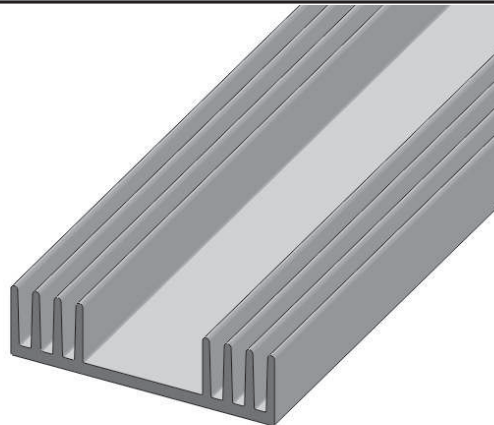
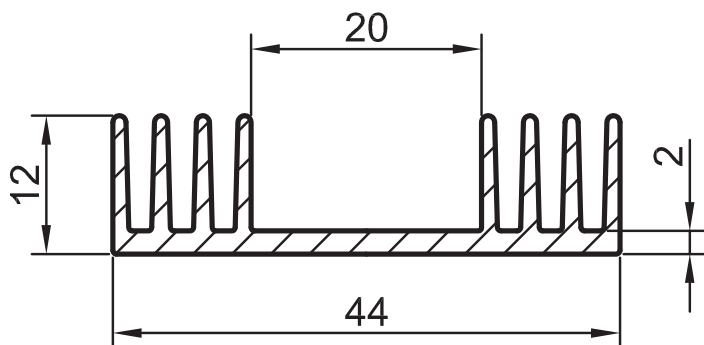


ZH 8662

hmotnosť / weight: 0,52 kg/m

obvod / perimeter: 243 mm

Rth (pre/for 100 mm): 5,0 °C/W

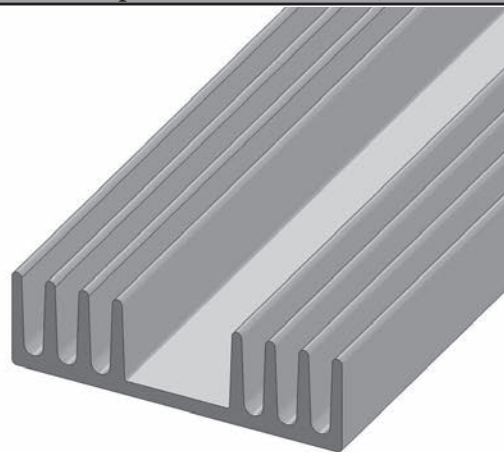
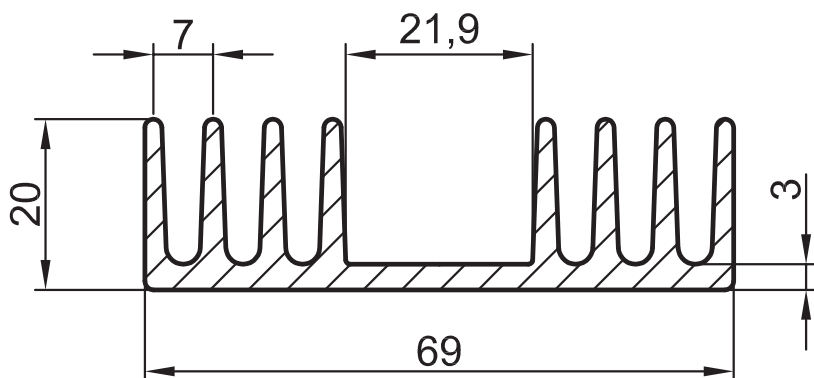


ZH 1136

hmotnosť / weight: 1,49 kg/m

obvod / perimeter: 389 mm

Rth (pre/for 100 mm): 3,9 °C/W

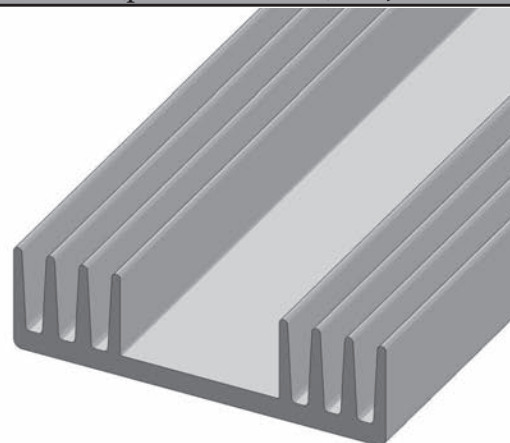
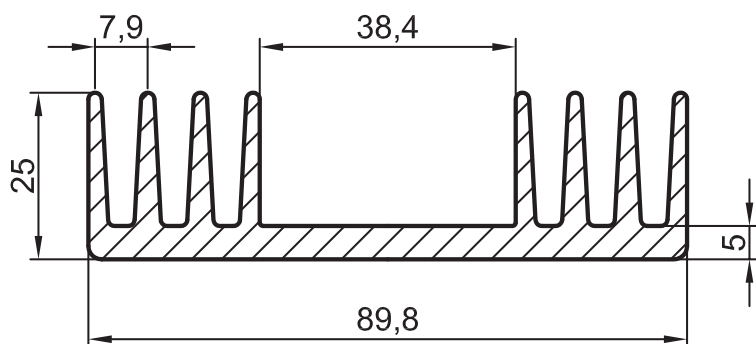


ZH 1910

hmotnosť / weight: 2,38 kg/m

obvod / perimeter: 494 mm

Rth (pre/for 100 mm): 3,2 °C/W

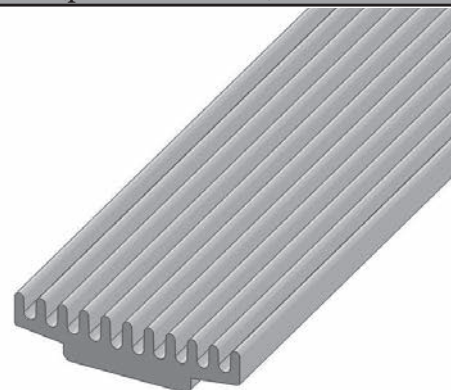
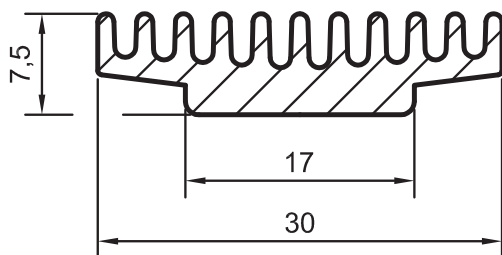


ZH 6681

hmotnosť / weight: 0,36 kg/m

obvod / perimeter: 129 mm

Rth (pre/for 100 mm): -- °C/W

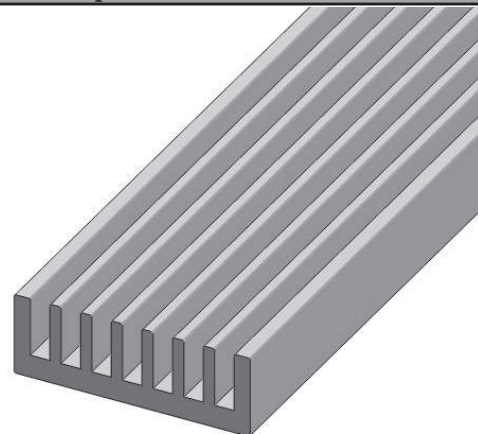
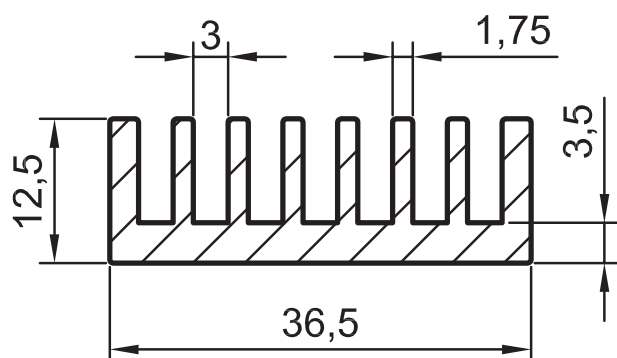


ZH 8889

hmotnosť / weight: 0,72 kg/m

obvod / perimeter: 222 mm

Rth (pre/for 100 mm): -- °C/W

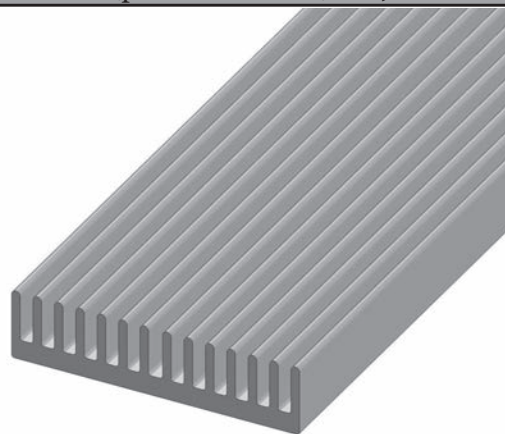
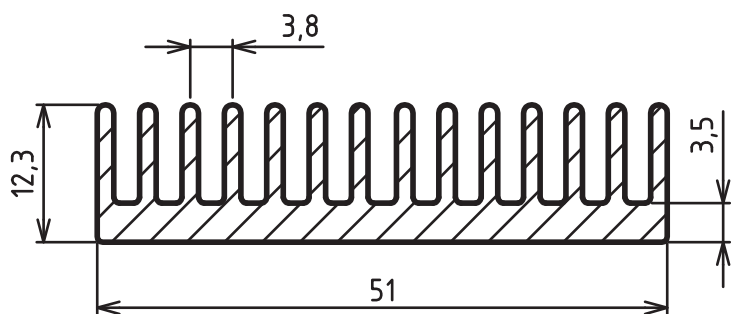


ZH 9152

hmotnosť / weight: 0,98 kg/m

obvod / perimeter: 340 mm

Rth (pre/for 100 mm): 4,1 °C/W

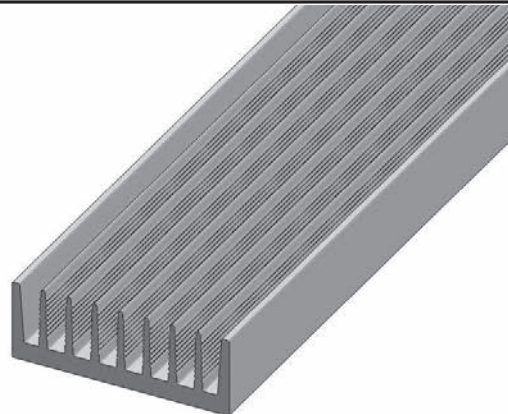
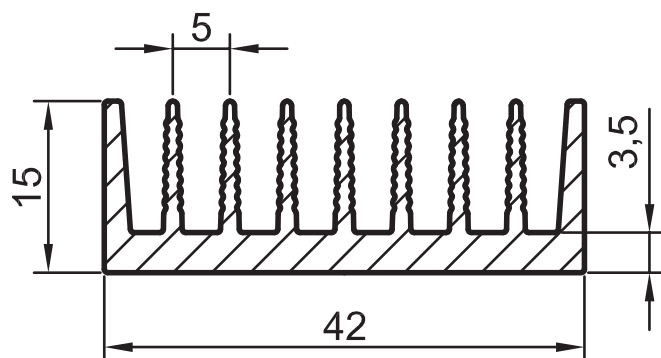


ZH 8624

hmotnosť / weight: 0,79 kg/m

obvod / perimeter: 298 mm

Rth (pre/for 100 mm): 4,2 °C/W

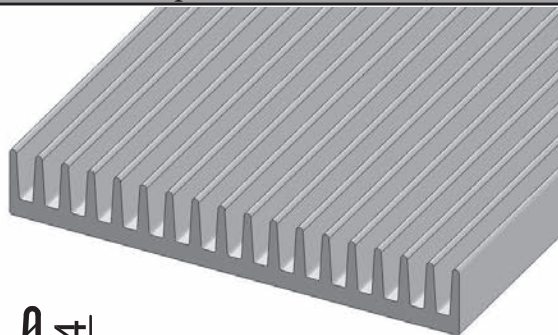
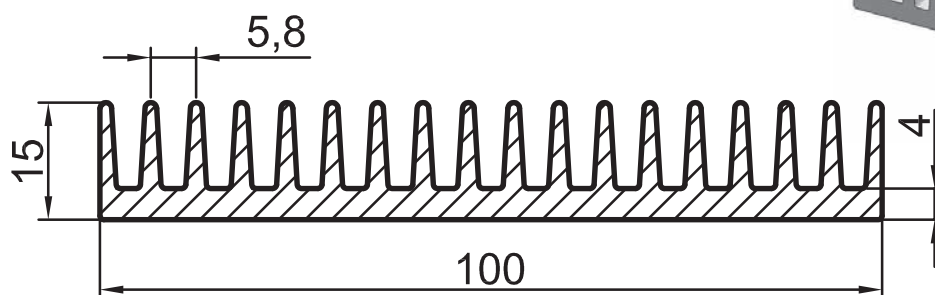


ZH 8501

hmotnosť / weight: 2,17 kg/m

obvod / perimeter: 566 mm

Rth (pre/for 100 mm): 3,16 °C/W

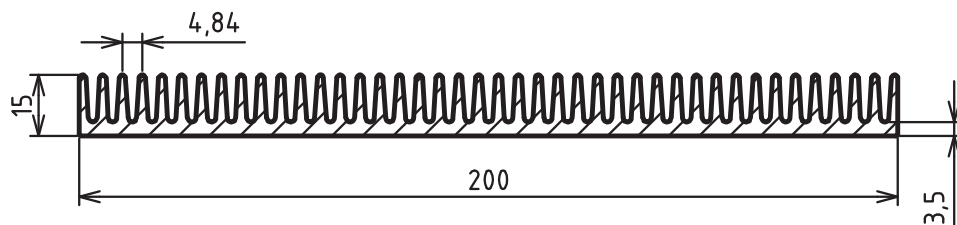


KK 200

hmotnosť / weight: 4,73 kg/m

obvod / perimeter: 1 265 mm

Rth (pre/for 150 mm): 0,85 °C/W

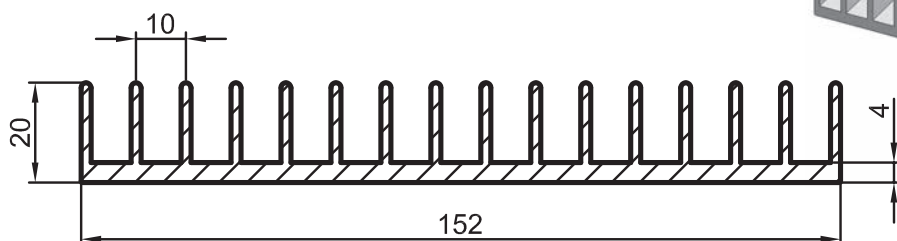


ZH 6465

hmotnosť / weight: 3,01 kg/m

obvod / perimeter: 809 mm

Rth (pre/for 100 mm): 1,20 °C/W

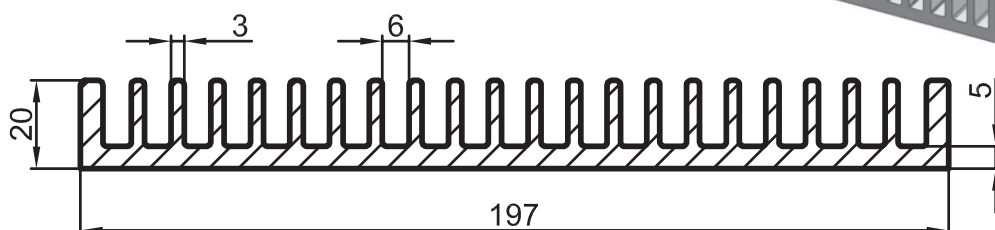


K 197

hmotnosť / weight: 5,80 kg/m

obvod / perimeter: 1 027 mm

Rth (pre/for 150 mm): 0,75 °C/W



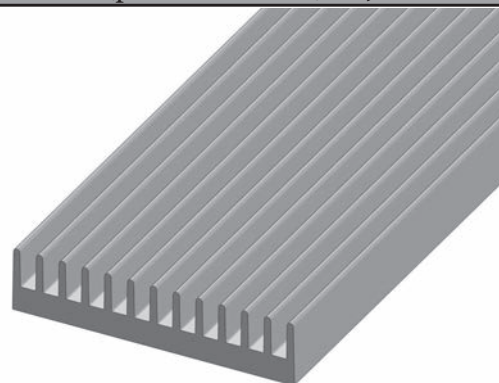
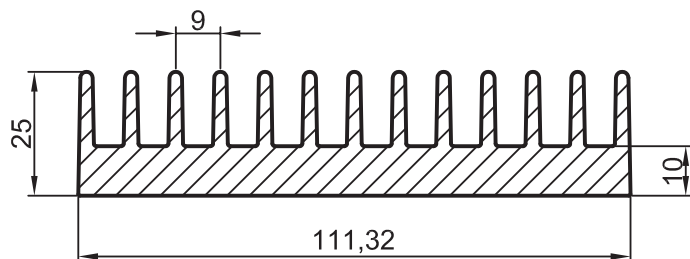
*
Profilý môžu mať iný vzhľad rebier, rozostupy rebier, prípadne hrúbku základne. Informujte sa prosím o aktuálnom stave pred objednaním.
The profiles can have a different visage of ribs, spacing of the ribs or thickness of the base. Please, inquire about the current state before ordering.

ZH 0610

hmotnosť / weight: 4,43 kg/m

obvod / perimeter: 607 mm

Rth (pre/for 100 mm): 1,15 °C/W

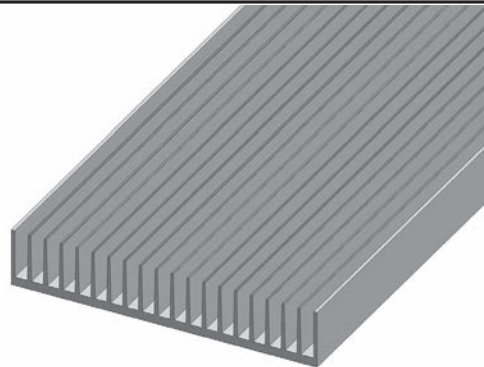
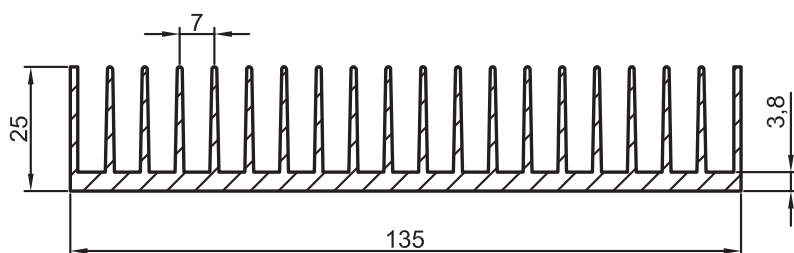


HY 28339

hmotnosť / weight: 3,10 kg/m

obvod / perimeter: 1 104 mm

Rth (pre/for 100 mm): 1,15 °C/W

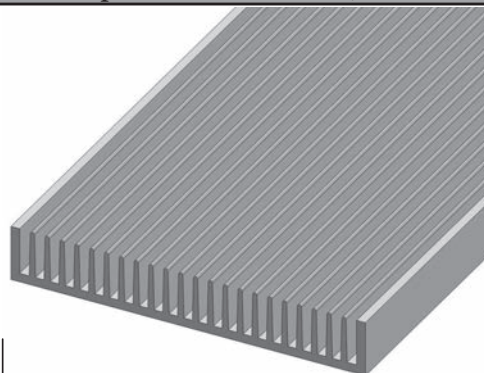
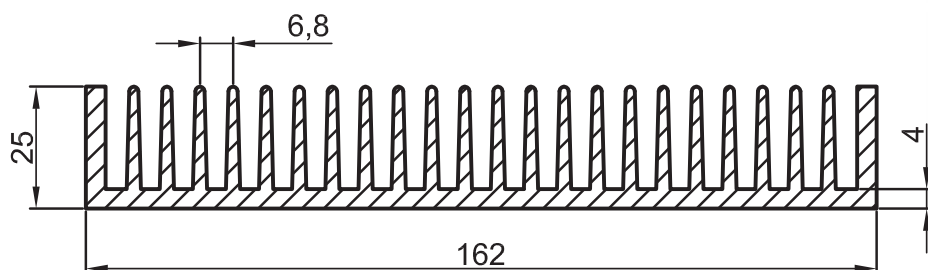


K 163

hmotnosť / weight: 5,20 kg/m

obvod / perimeter: 1 300 mm

Rth (pre/for 150 mm): 0,85 °C/W

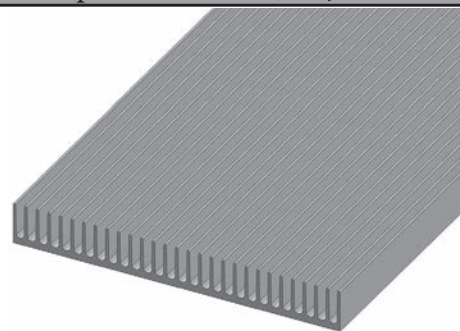
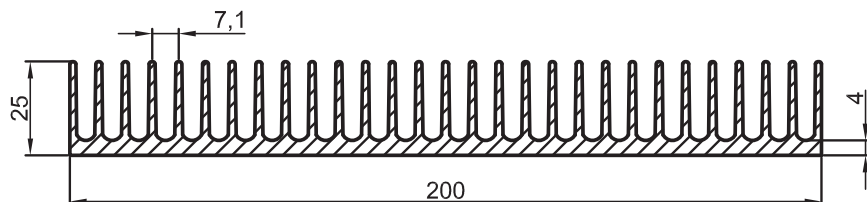


KEAH 200

hmotnosť / weight: 5,50 kg/m

obvod / perimeter: 1 542 mm

R_{th} (pre/for 150 mm): 0,64 °C/W

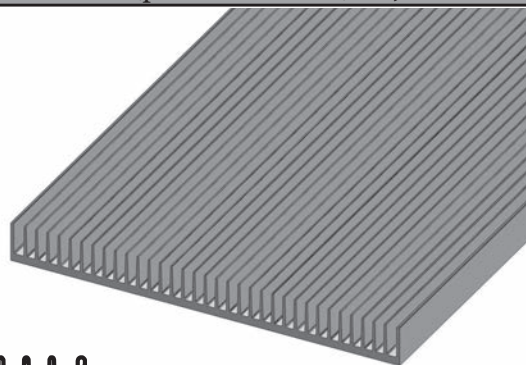
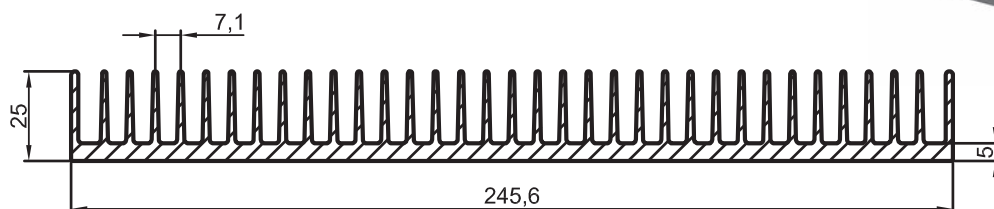


K 245

hmotnosť / weight: 6,60 kg/m

obvod / perimeter: 1 831 mm

R_{th} (pre/for 150 mm): 0,43 °C/W

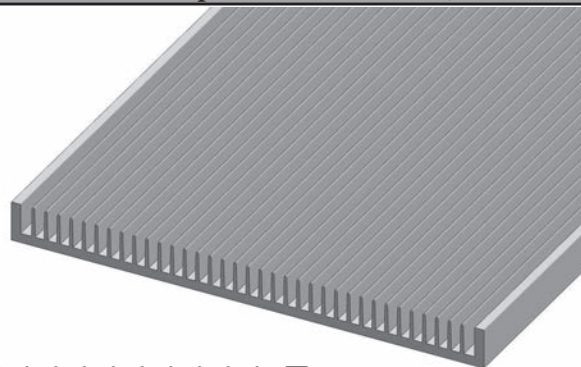
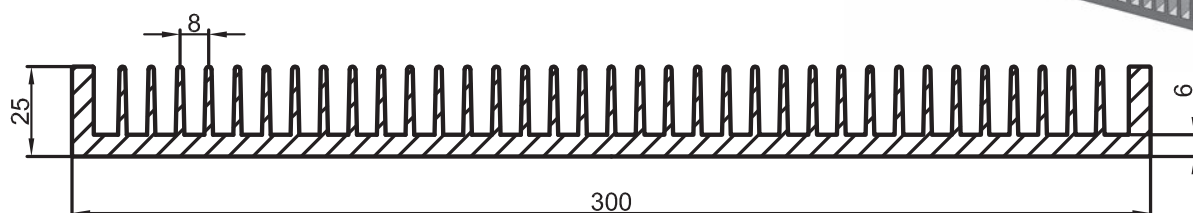


KEA 300

hmotnosť / weight: 9,10 kg/m

obvod / perimeter: 1 968 mm

R_{th} (pre/for 150 mm): 0,44 °C/W

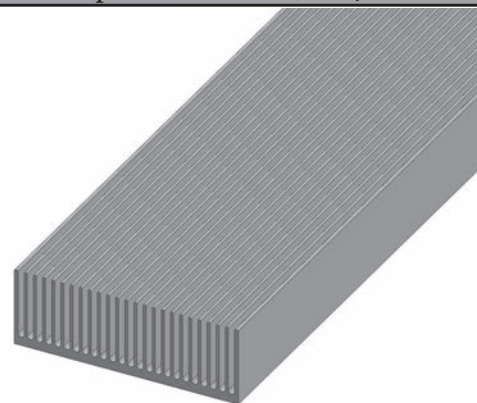
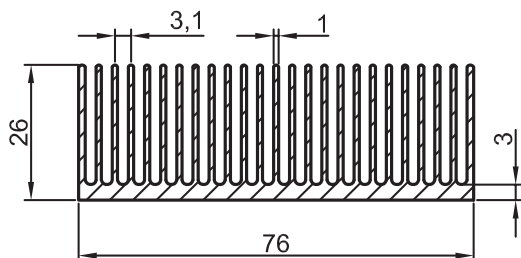


K 76

hmotnosť / weight: 2,23 kg/m

obvod / perimeter: 1 277 mm

Rth (pre/for 100 mm): 2,2 °C/W

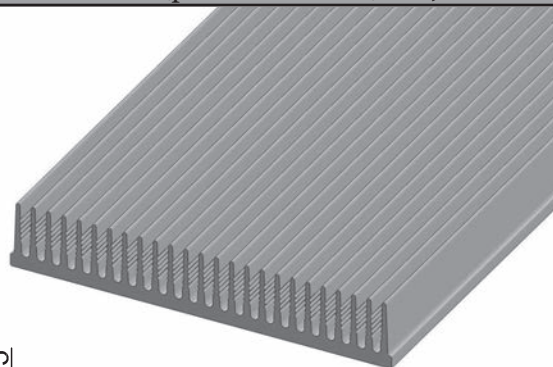
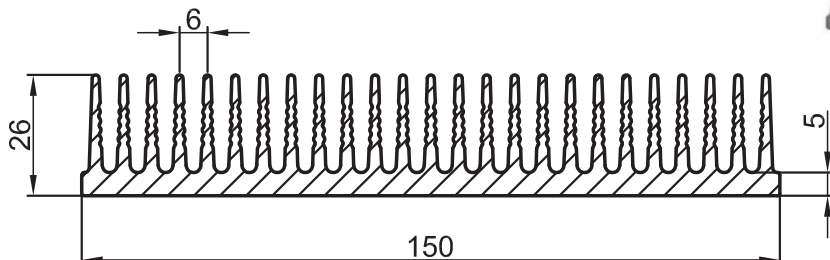


ZH 8001

hmotnosť / weight: 4,96 kg/m

obvod / perimeter: 1 328 mm

Rth (pre/for 100 mm): 1,3 °C/W

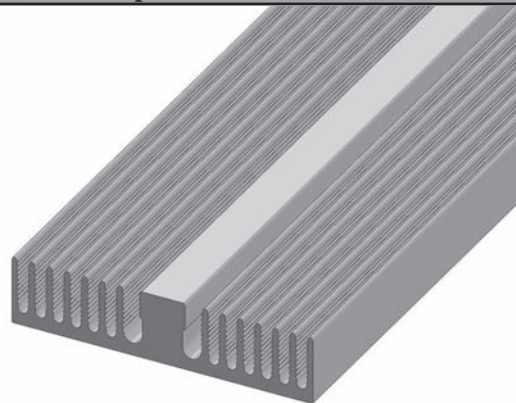
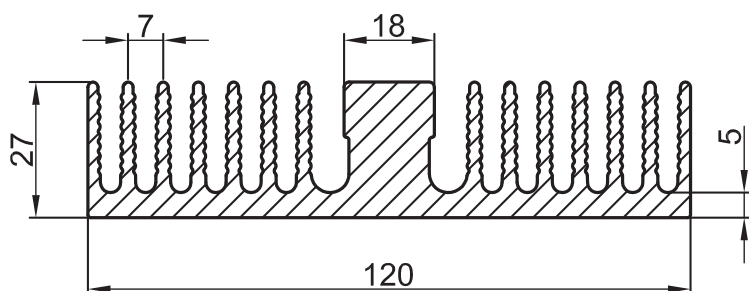


ZH 7771

hmotnosť / weight: 4,81 kg/m

obvod / perimeter: 953 mm

Rth (pre/for 100 mm): -- °C/W

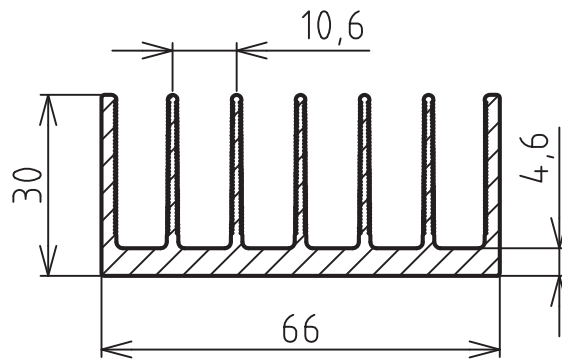


ZH 9250

hmotnosť / weight: 1,70 kg/m

obvod / perimeter: 629 mm

Rth (pre/for 100 mm): 2,7 °C/W

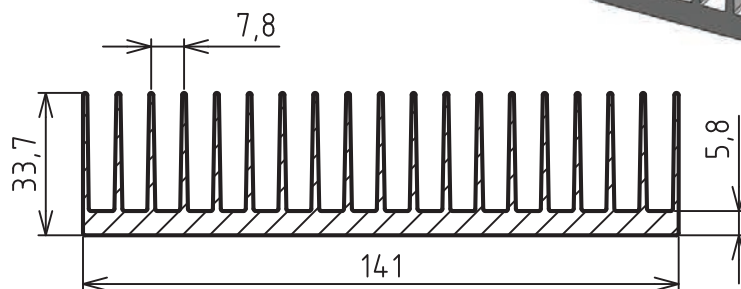


ZH 9481

hmotnosť / weight: 4,17 kg/m

obvod / perimeter: 1 324 mm

Rth (pre/for 100 mm): 1,05 °C/W



hmotnosť / weight:

kg/m

obvod / perimeter:

mm

Rth (pre/for

mm):

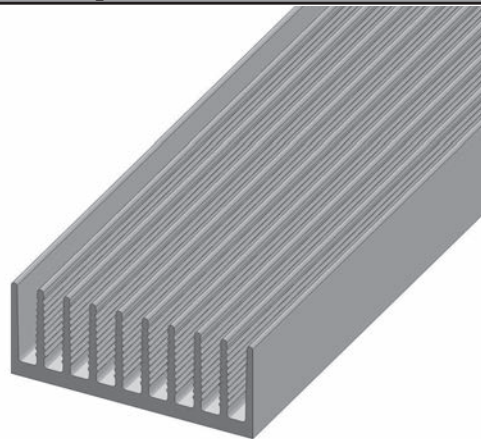
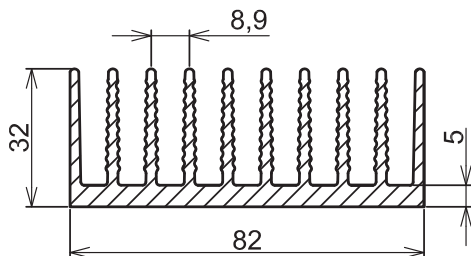
°C/W

HY 25346

hmotnosť / weight: 2,87 kg/m

obvod / perimeter: 806 mm

Rth (pre/for 100 mm): 1,5 °C/W

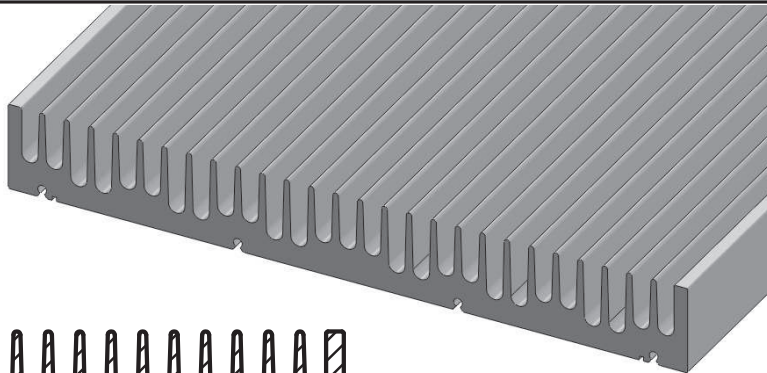
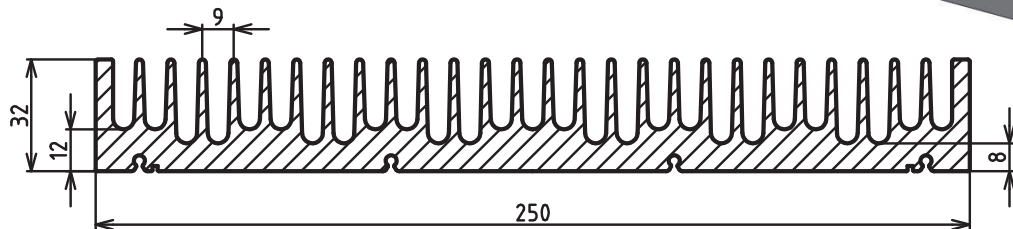


ZH 4185

hmotnosť / weight: 11,53 kg/m

obvod / perimeter: 1 660 mm

Rth (pre/for 100 mm): 0,58 °C/W

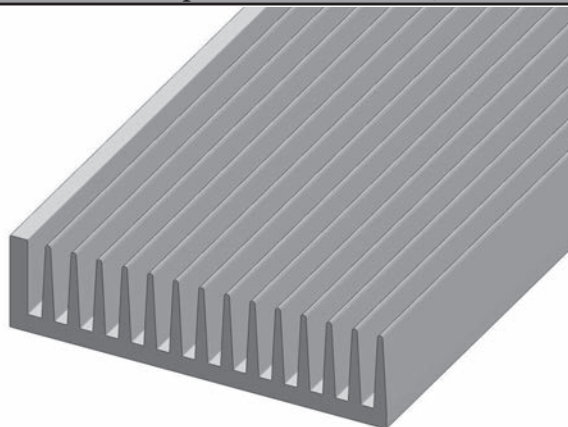
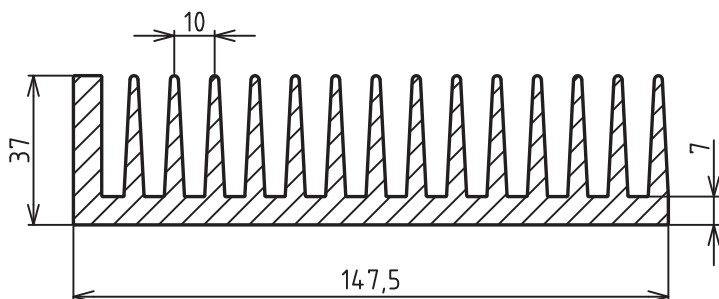


ZH 5073

hmotnosť / weight: 7,28 kg/m

obvod / perimeter: 1 152 mm

Rth (pre/for 100 mm): 0,65 °C/W



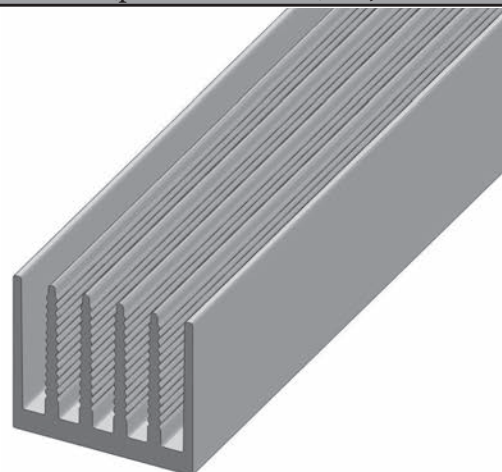
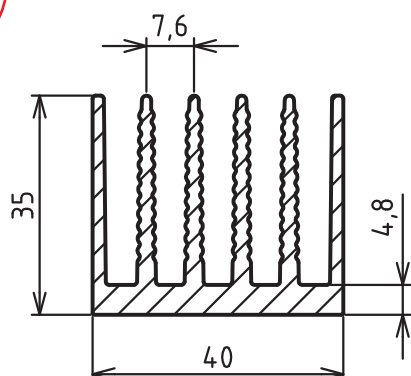
ZH 7485

hmotnosť / weight: 1,59 kg/m

obvod / perimeter: 458 mm

Rth (pre/for 100 mm): 2,79 °C/W

Dopredaj
Bargain Sale

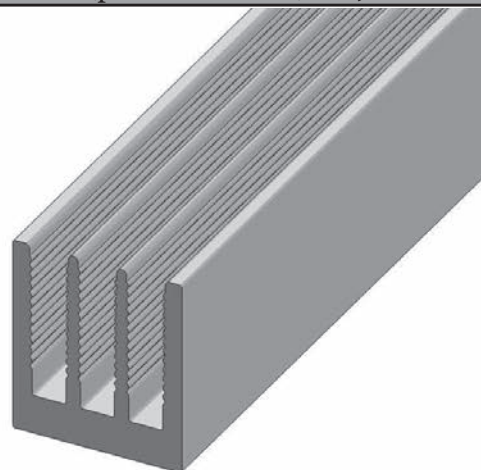
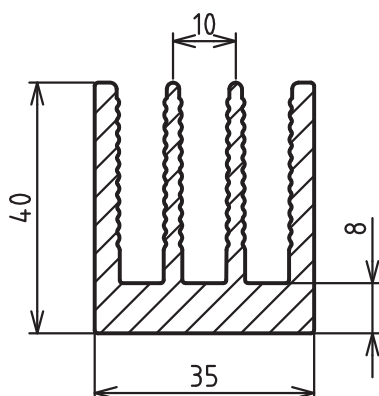


ZH 7770

hmotnosť / weight: 1,85 kg/m

obvod / perimeter: 352 mm

Rth (pre/for 100 mm): 3,0 °C/W

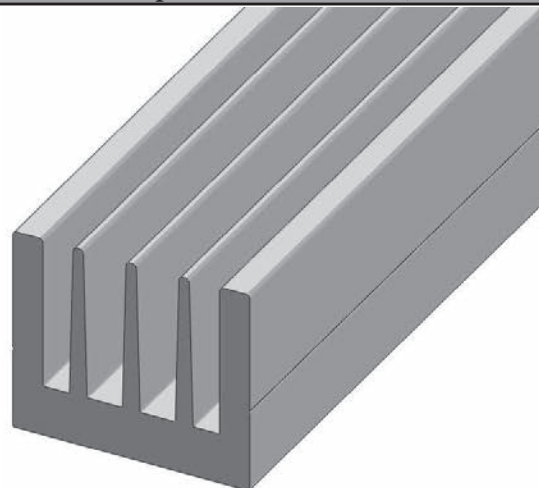
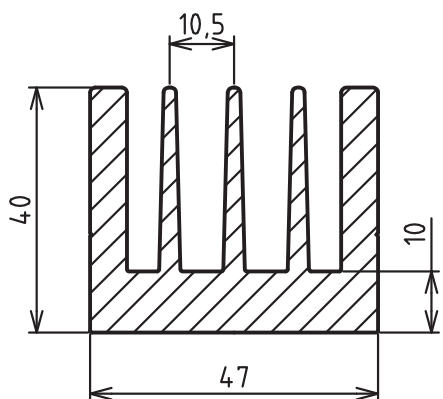


ZH 6789

hmotnosť / weight: 2,91 kg/m

obvod / perimeter: 405 mm

Rth (pre/for 100 mm): 2,93 °C/W

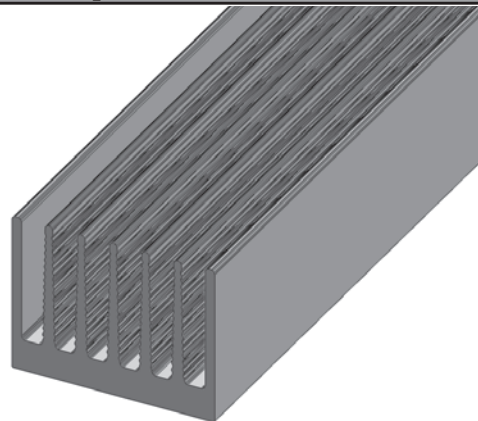
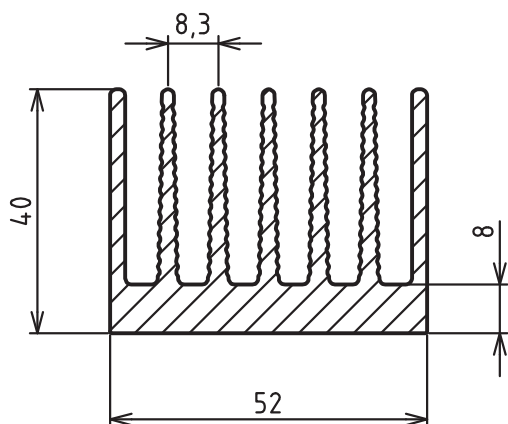


HY 25345

hmotnosť / weight: 2,50 kg/m

obvod / perimeter: 571 mm

Rth (pre/for 100 mm): 2,0 °C/W

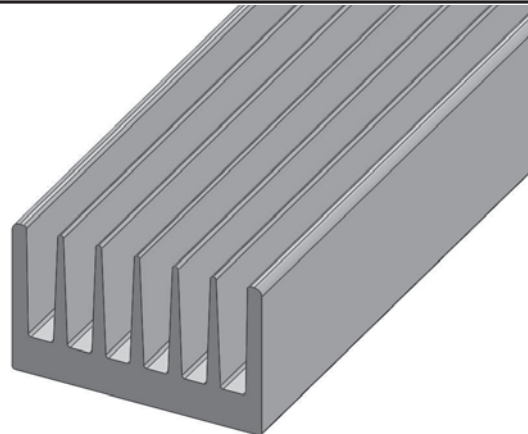
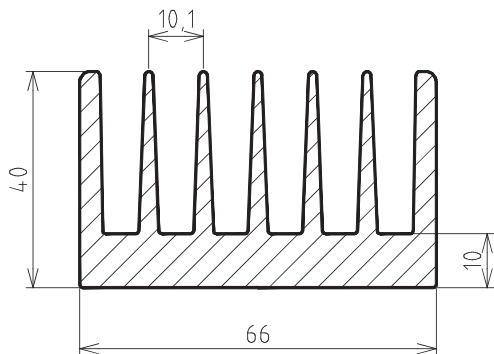


K 66

hmotnosť / weight: 3,48 kg/m

obvod / perimeter: 550 mm

Rth (pre/for 100 mm): 1,7 °C/W

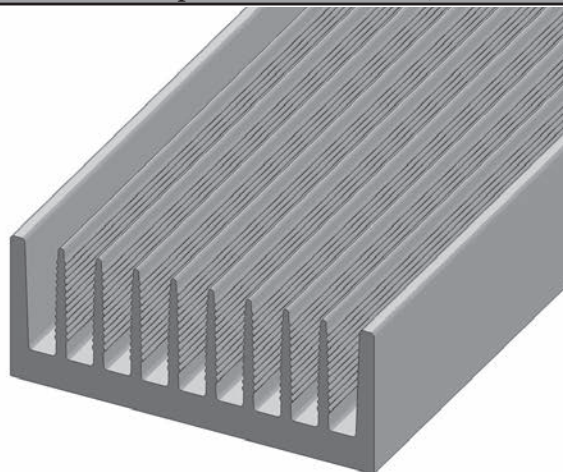
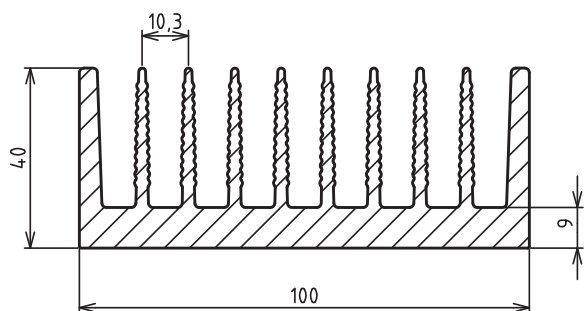


ZH 7484

hmotnosť / weight: 4,86 kg/m

obvod / perimeter: 846 mm

Rth (pre/for 100 mm): 1,18 °C/W

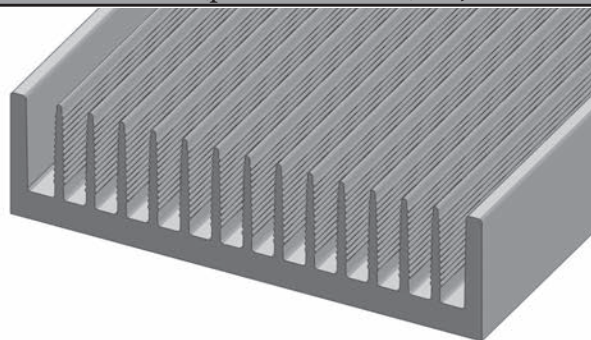
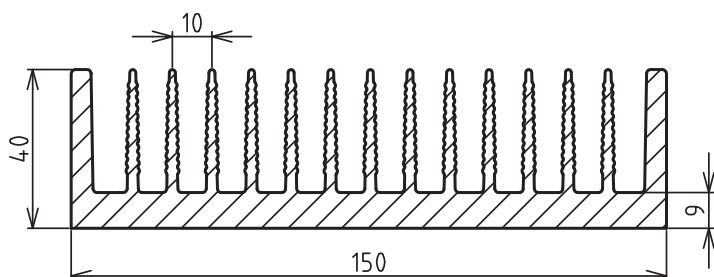


IT 5498

hmotnosť / weight: 7,85 kg/m

obvod / perimeter: 1 261 mm

Rth (pre/for 150 mm): 0,62 °C/W

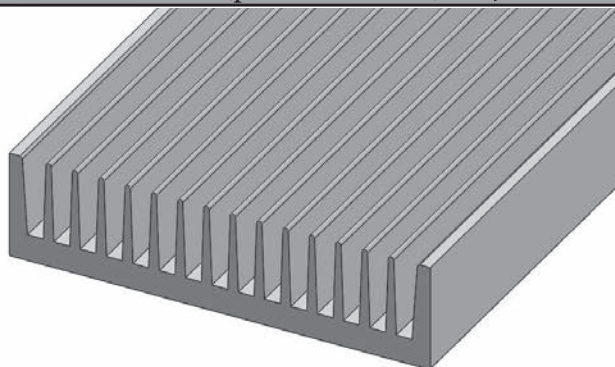
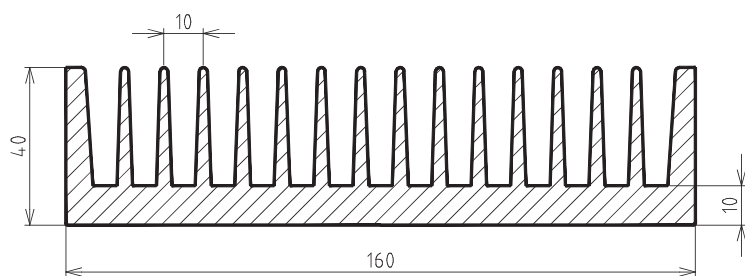


IT 5303

hmotnosť / weight: 9,32 kg/m

obvod / perimeter: 1 250 mm

Rth (pre/for 100 mm): 0,9 °C/W

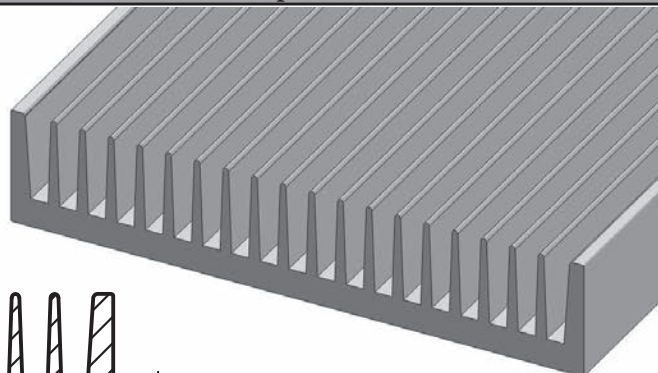
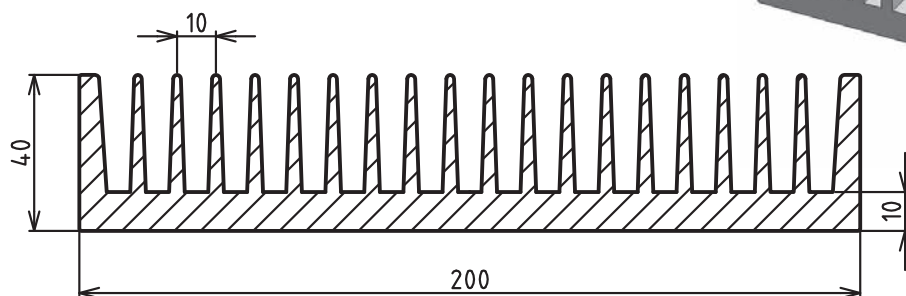


K 200

hmotnosť / weight: 10,68 kg/m

obvod / perimeter: 1 565 mm

Rth (pre/for 150 mm): 0,52 °C/W

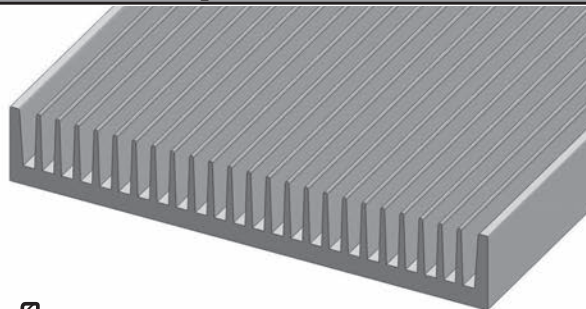
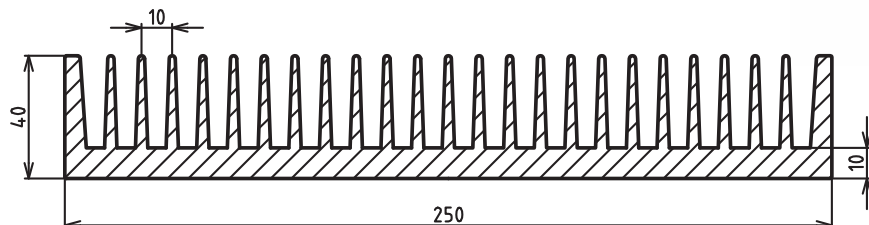


K 250

hmotnosť / weight: 13,23 kg/m

obvod / perimeter: 1 951 mm

Rth (pre/for 150 mm): 0,41 °C/W

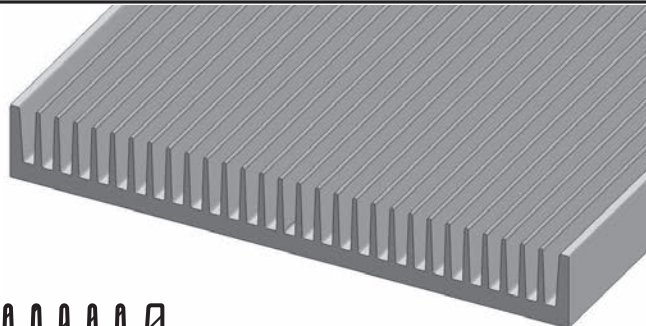
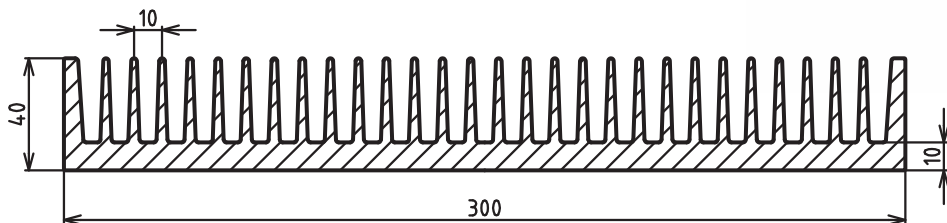


K 300

hmotnosť / weight: 15,73 kg/m

obvod / perimeter: 2 315 mm

Rth (pre/for 150 mm): 0,32 °C/W

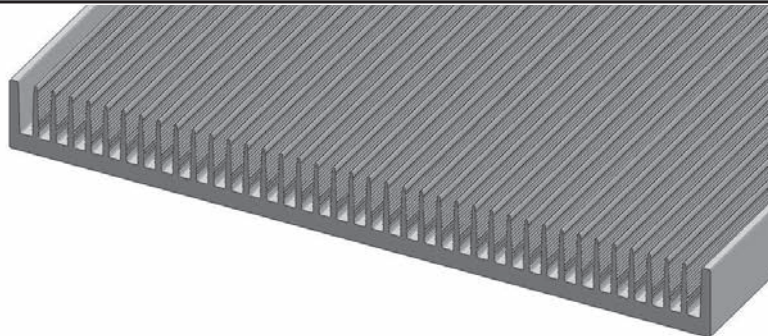
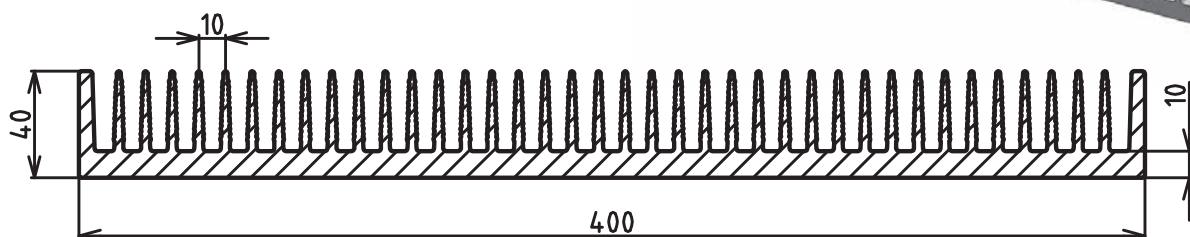


K 400

hmotnosť / weight: 21,03 kg/m

obvod / perimeter: 3 108 mm

Rth (pre/for 150 mm): 0,25 °C/W

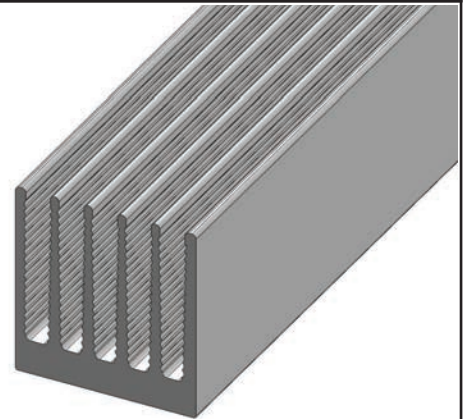
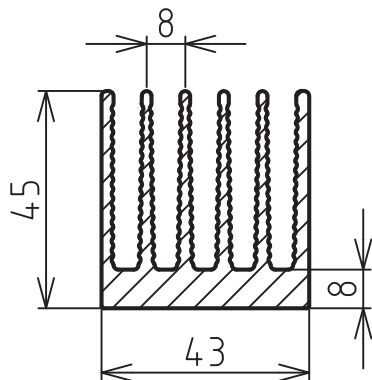


ZH 9238

hmotnosť / weight: 2,34 kg/m

obvod / perimeter: 566 mm

Rth (pre/for 100 mm): -- °C/W

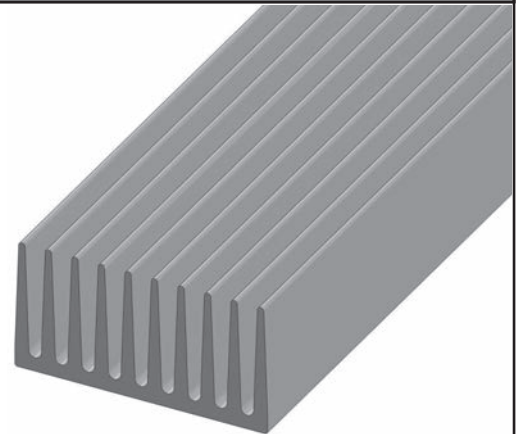
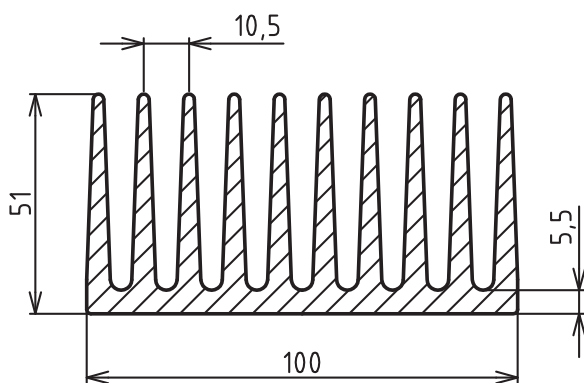


ZH 2533

hmotnosť / weight: 6,52 kg/m

obvod / perimeter: 1 060 mm

Rth (pre/for 100 mm): 1,4 °C/W

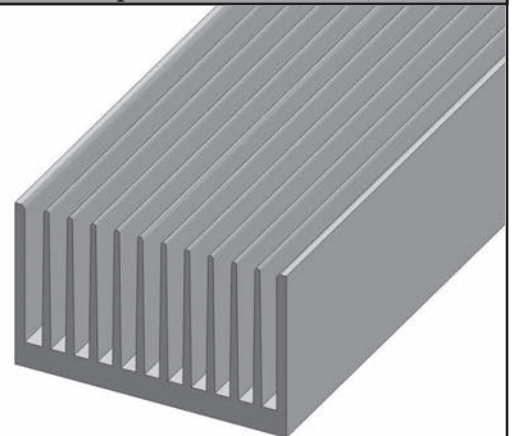
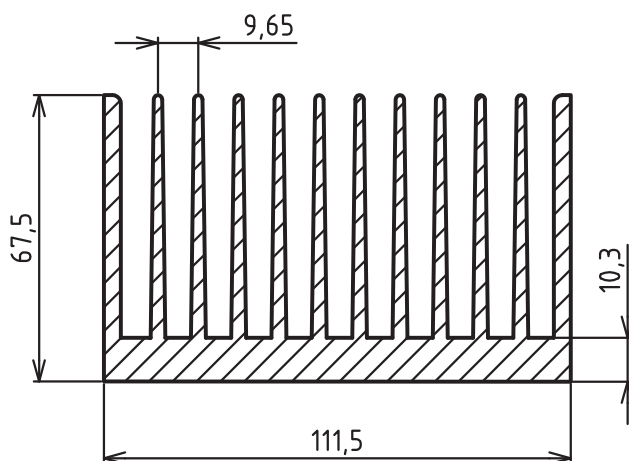


K 112

hmotnosť / weight: 8,70 kg/m

obvod / perimeter: 1 588 mm

Rth (pre/for 100 mm): 0,90 °C/W

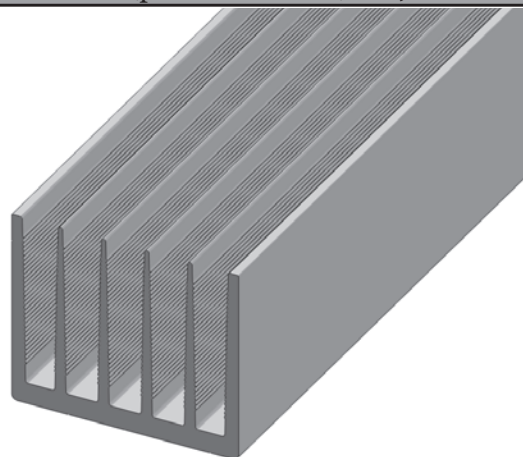
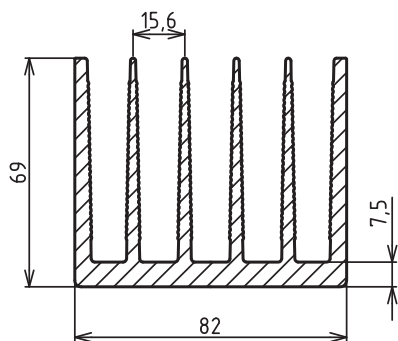


ZH 8708

hmotnosť / weight: 5,20 kg/m

obvod / perimeter: 937 mm

Rth (pre/for 100 mm): 1,1 °C/W

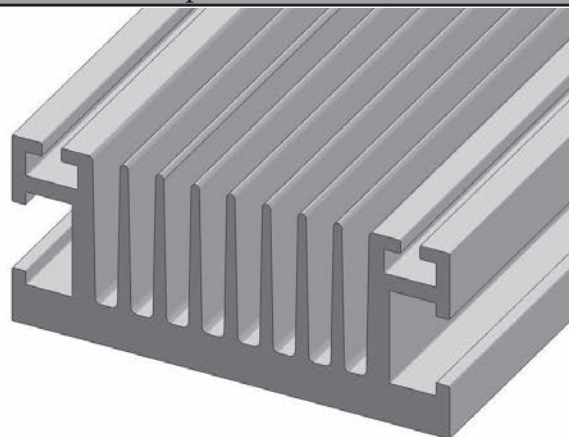
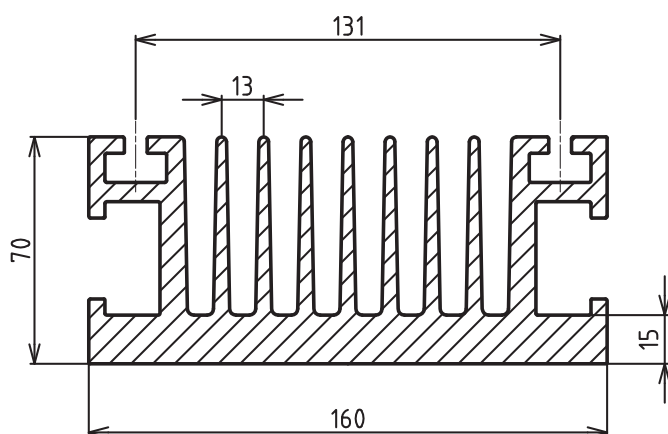


ZH 3197

hmotnosť / weight: 14,59 kg/m

obvod / perimeter: 1 526 mm

Rth (pre/for 100 mm): -- °C/W

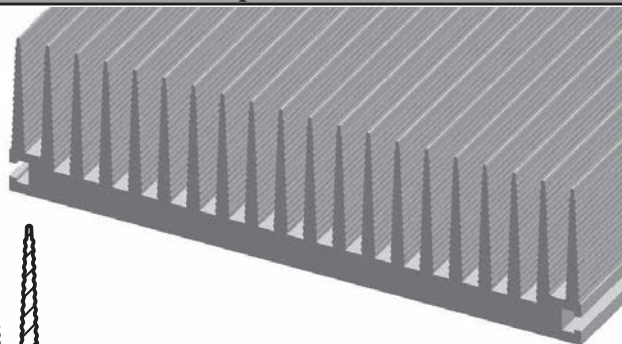
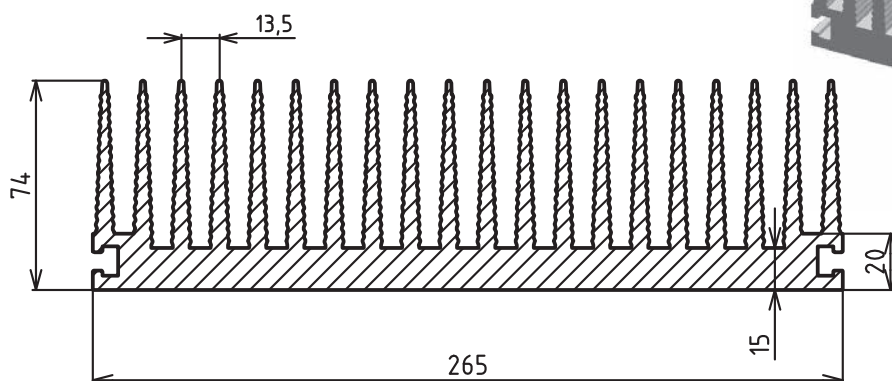


IT 0265

hmotnosť / weight: 24,13 kg/m

obvod / perimeter: 3 006 mm

Rth (pre/for 150 mm): 0,45 °C/W

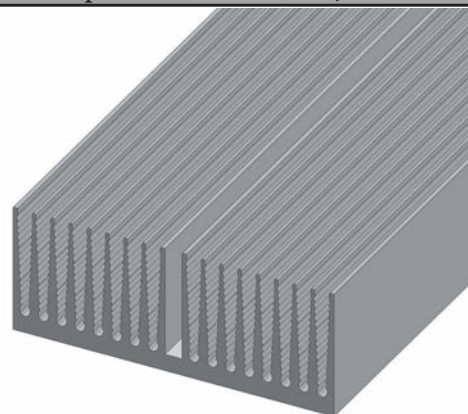
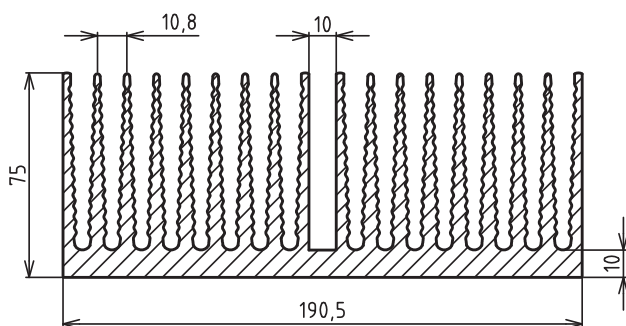


KE 190

hmotnosť / weight: 17,89 kg/m

obvod / perimeter: 2 887 mm

Rth (pre/for 150 mm): 0,36 °C/W

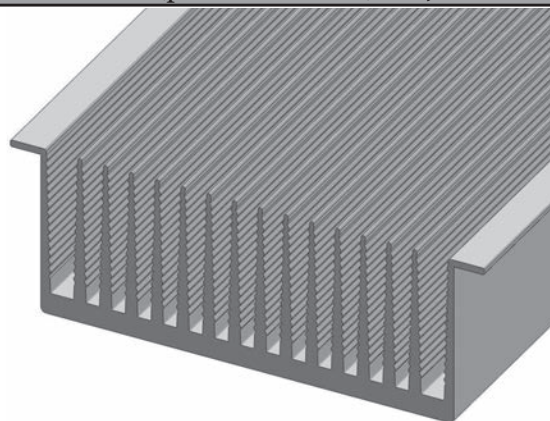
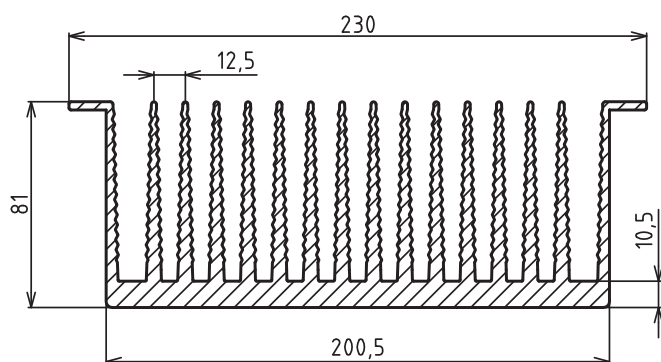


K 230

hmotnosť / weight: 17,50 kg/m

obvod / perimeter: 2 895 mm

Rth (pre/for 150 mm): 0,3 °C/W

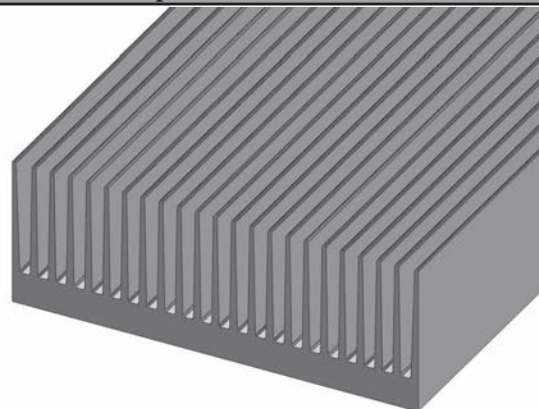
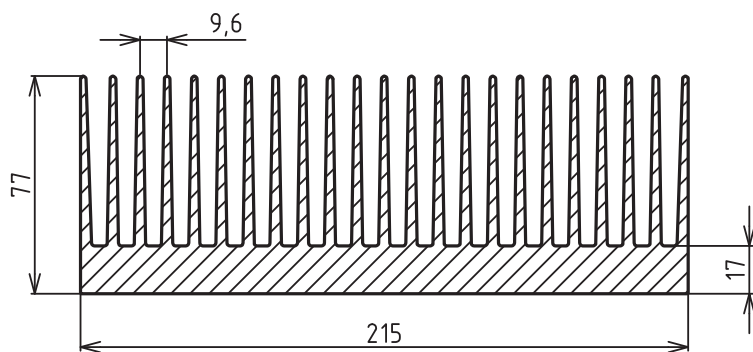


KE 215

hmotnosť / weight: 20,90 kg/m

obvod / perimeter: 3 125 mm

Rth (pre/for 150 mm): 0,36 °C/W

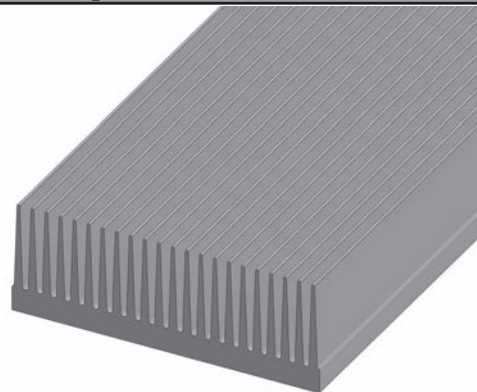
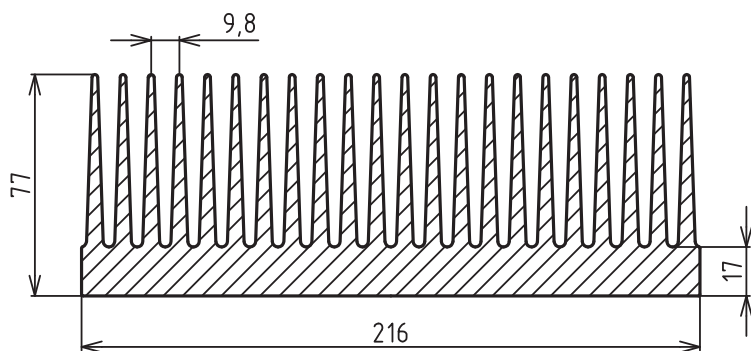


K 216

hmotnosť / weight: 24,00 kg/m

obvod / perimeter: 2 966 mm

Rth (pre/for 150 mm): 0,35 °C/W

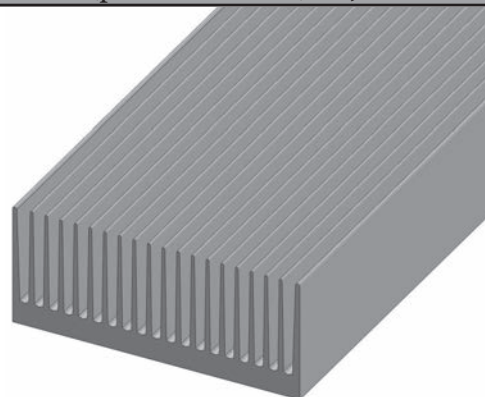
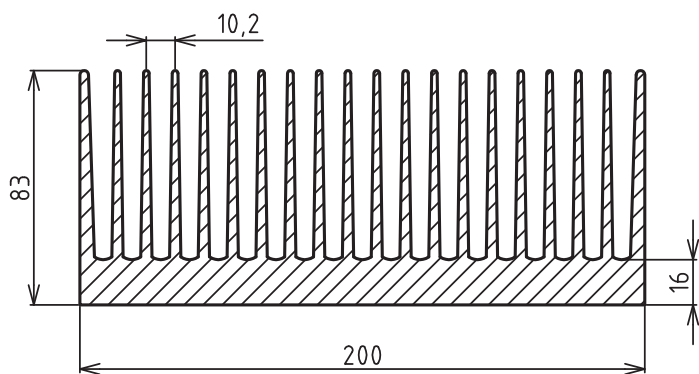


KA 200

hmotnosť / weight: 19,90 kg/m

obvod / perimeter: 3 025 mm

Rth (pre/for 150 mm): 0,34 °C/W

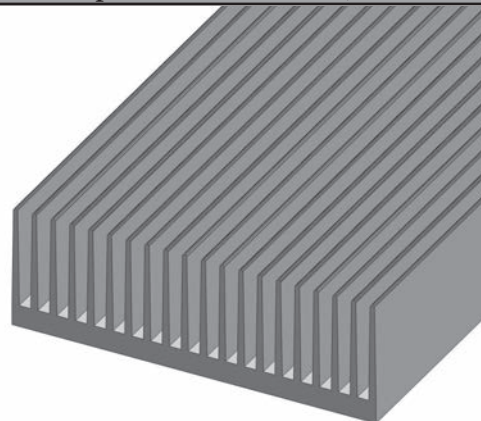
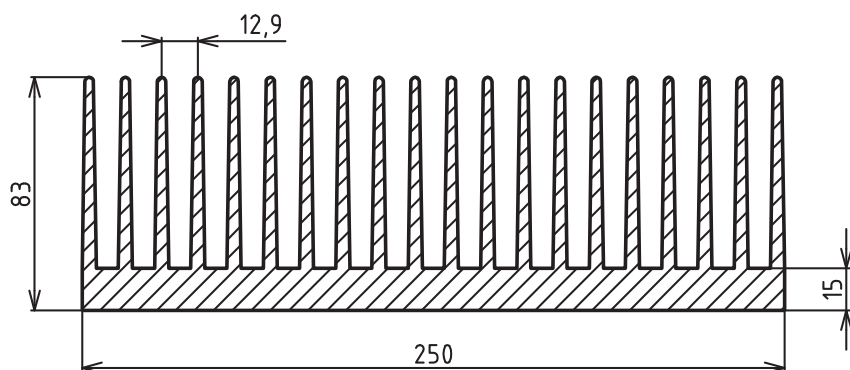


KX 250

hmotnosť / weight: 25,10 kg/m

obvod / perimeter: 3 186 mm

Rth (pre/for 150 mm): 0,23 °C/W

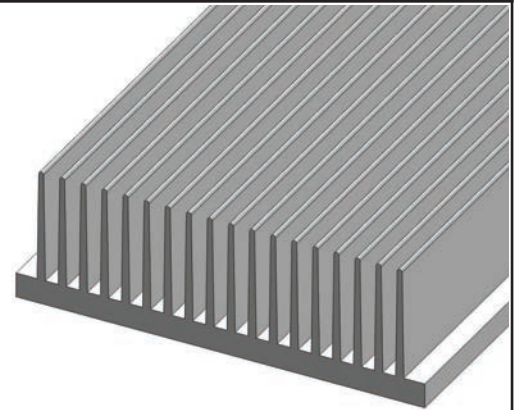
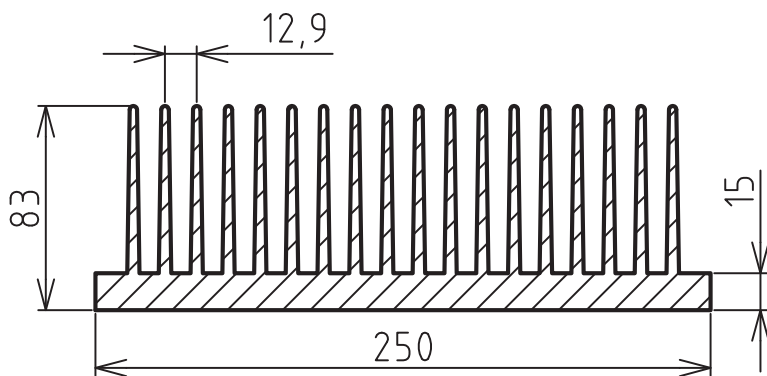


KY 250

hmotnosť / weight: 23,23 kg/m

obvod / perimeter: 2 919 mm

Rth (pre/for 150 mm): -- °C/W



hmotnosť / weight:

kg/m

obvod / perimeter:

mm

Rth (pre/for

mm):

°C/W

hmotnosť / weight:

kg/m

obvod / perimeter:

mm

Rth (pre/for

mm):

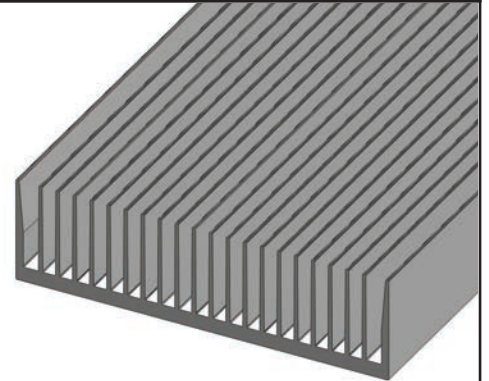
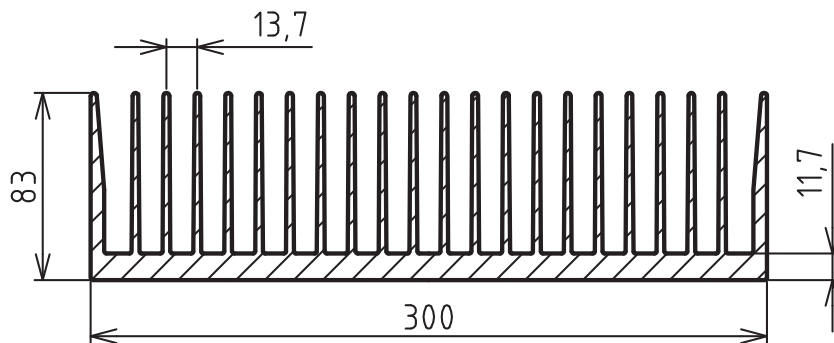
°C/W

KE 300

hmotnosť / weight: 23,08 kg/m

obvod / perimeter: 3 695 mm

Rth (pre/for 150 mm): 0,23 °C/W

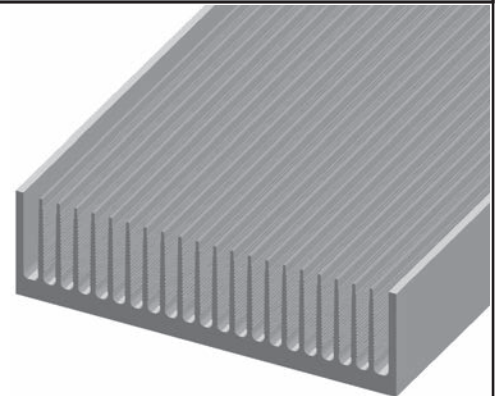
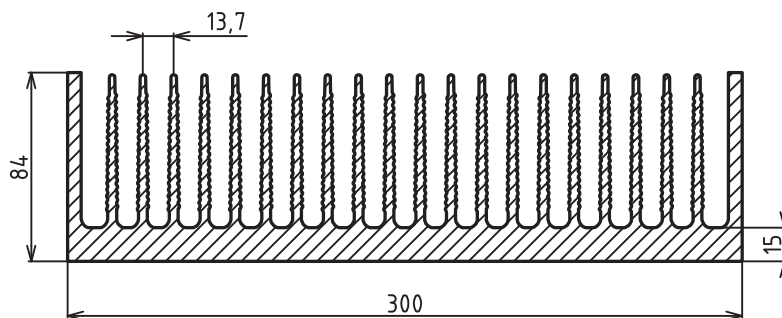


KX 300

hmotnosť / weight: 28,45 kg/m

obvod / perimeter: 3 745 mm

Rth (pre/for 150 mm): 0,2 °C/W



zváraný chladič / welded heatsink

hmotnosť / weight:

kg/m

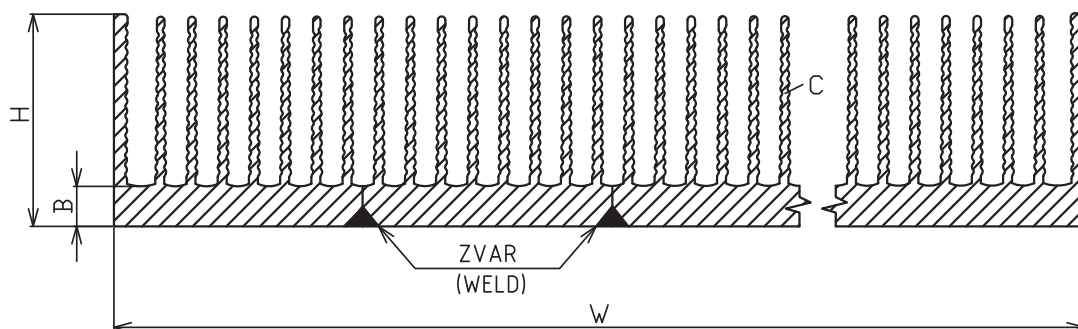
obvod / perimeter:

mm

Rth (pre/for

mm):

°C/W



W - šírka podľa požiadavky / width as required

B, C, H - podľa typu použitého chladiča / according to a type of used heatsink

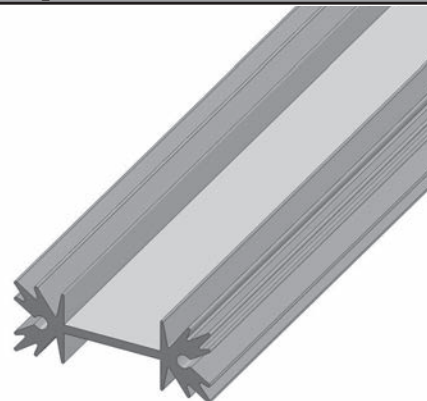
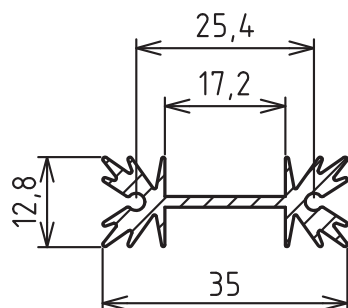
Chladiče sú zvárané na robotizovanom pracovisku / Heatsinks are welded at robotic workstation

TEA 35

hmotnosť / weight: 0,40 kg/m

obvod / perimeter: 185 mm

Rth (pre/for 50 mm): 8,5 °C/W



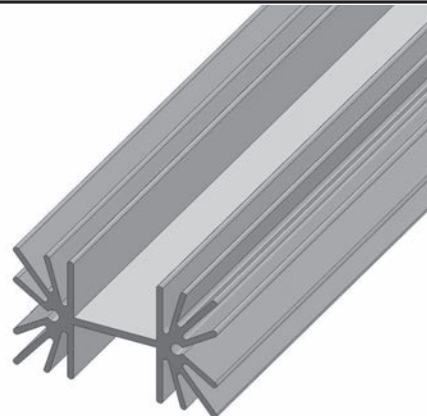
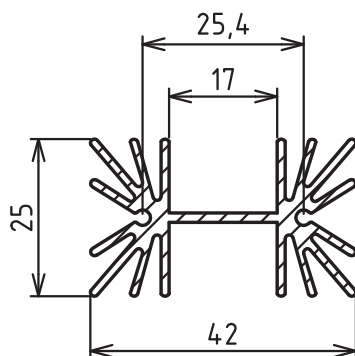
CLIP TEA 35

TEA 40

hmotnosť / weight: 0,74 kg/m

obvod / perimeter: 377 mm

Rth (pre/for 50 mm): 6,0 °C/W



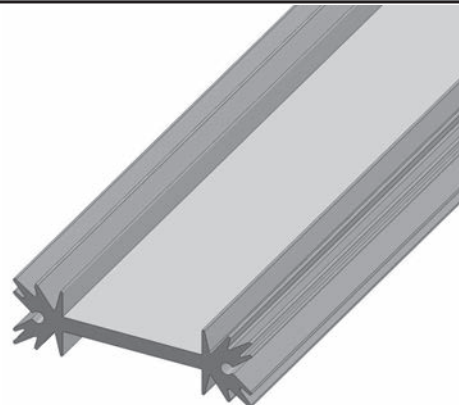
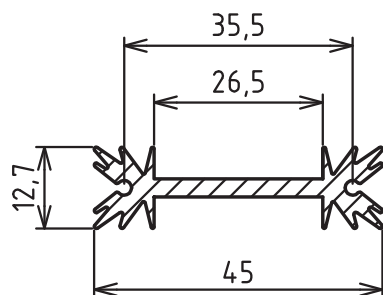
CLIP TEA40

TEA 45

hmotnosť / weight: 0,55 kg/m

obvod / perimeter: 201 mm

Rth (pre/for 50 mm): 6,2 °C/W



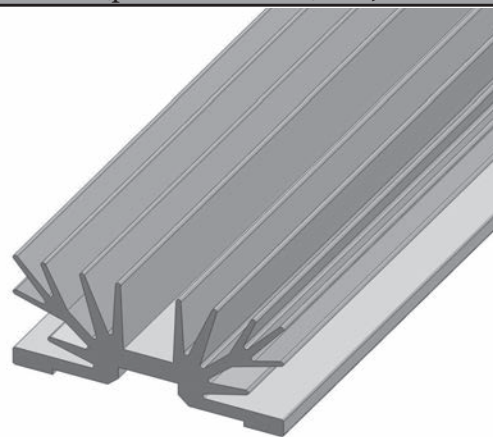
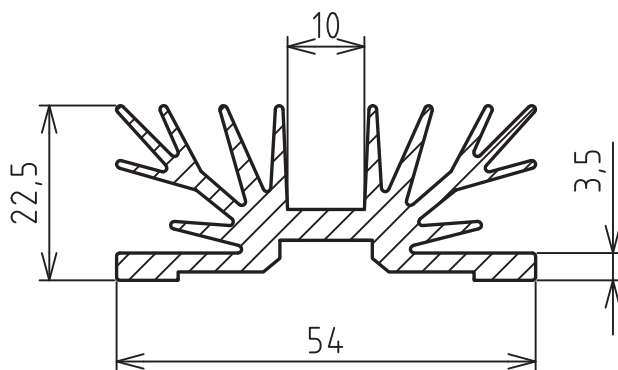
CLIP TEA45

T 54

hmotnosť / weight: 1,24 kg/m

obvod / perimeter: 394 mm

Rth (pre/for 100 mm): 3,3 °C/W

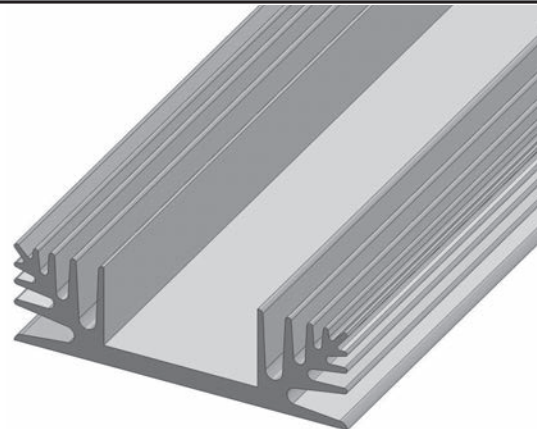
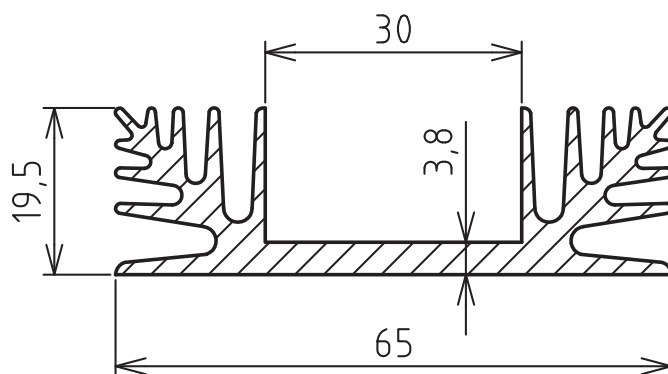


TE 65

hmotnosť / weight: 1,30 kg/m

obvod / perimeter: 382 mm

Rth (pre/for 100 mm): 3,0 °C/W

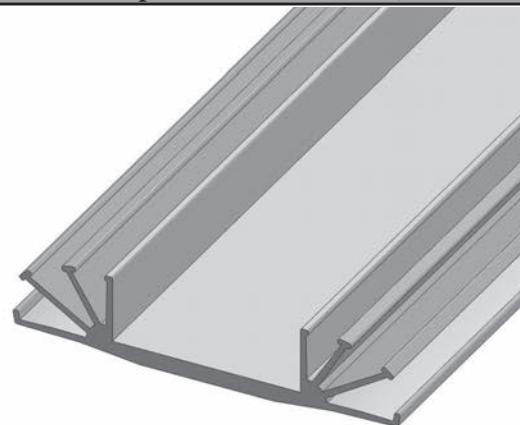
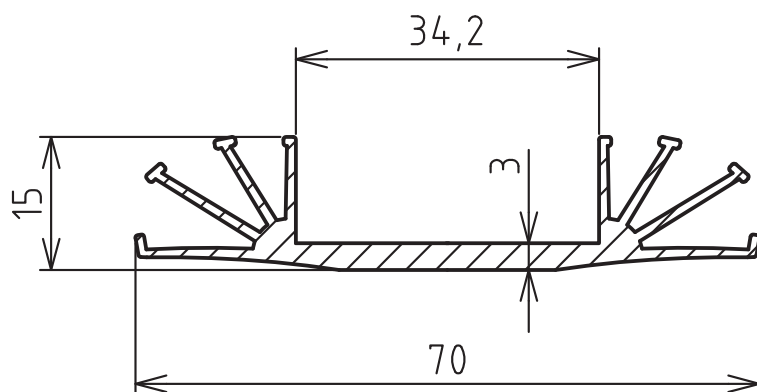


T 70

hmotnosť / weight: 0,71 kg/m

obvod / perimeter: 303 mm

Rth (pre/for 100 mm): 3,8 °C/W

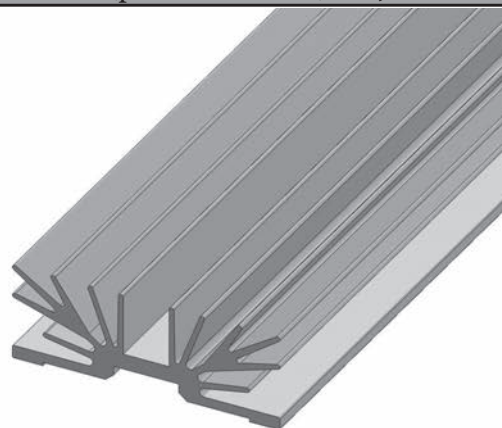
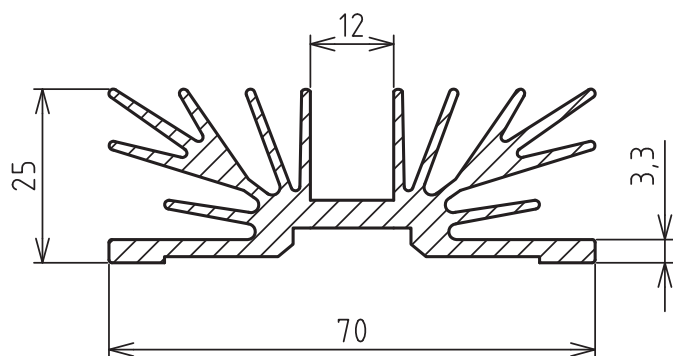


HY 28194

hmotnosť / weight: 1,84 kg/m

obvod / perimeter: 518 mm

Rth (pre/for 100 mm): 2,7 °C/W

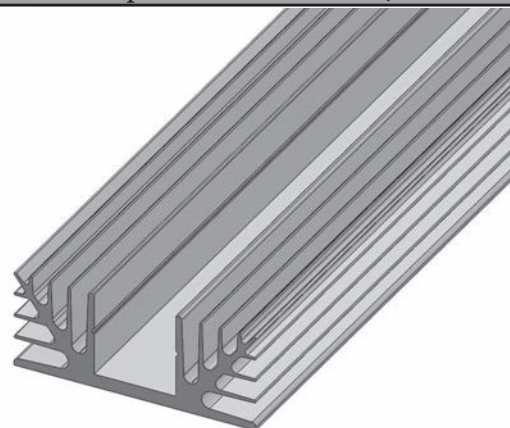
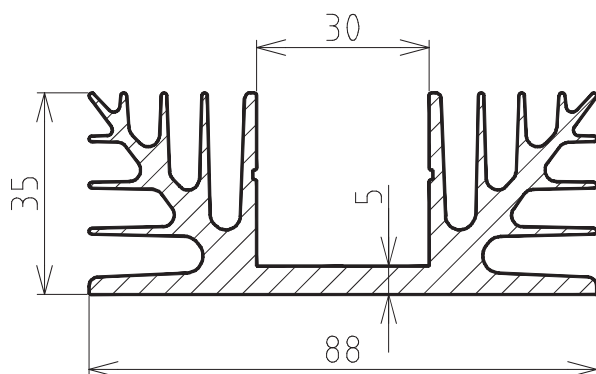


T 88

hmotnosť / weight: 2,77 kg/m

obvod / perimeter: 653 mm

Rth (pre/for 100 mm): 1,7 °C/W

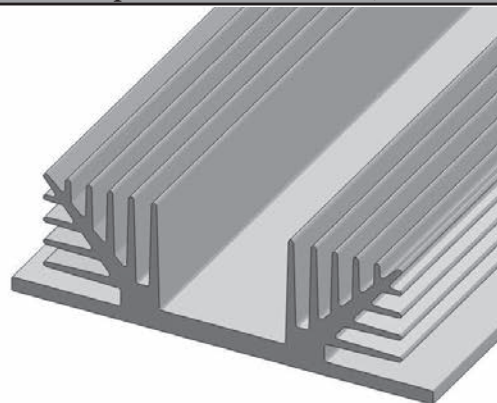
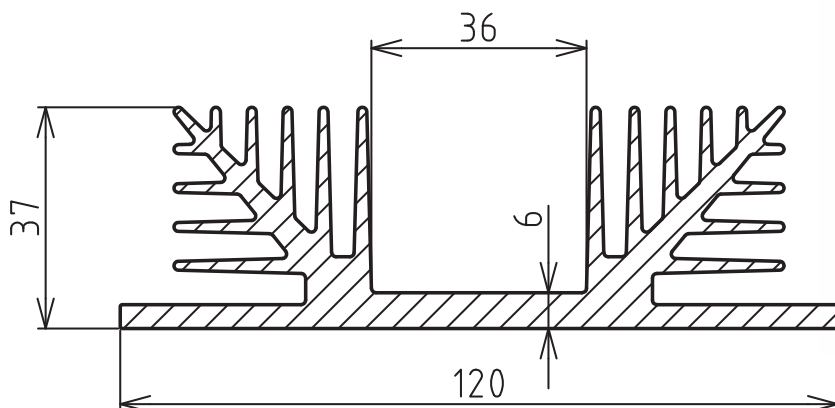


ZH 2476

hmotnosť / weight: 4,05 kg/m

obvod / perimeter: 876 mm

Rth (pre/for 100 mm): 1,5 °C/W

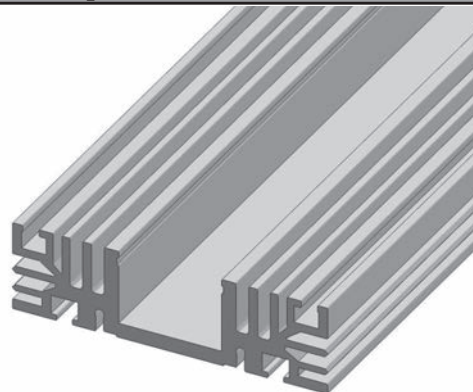
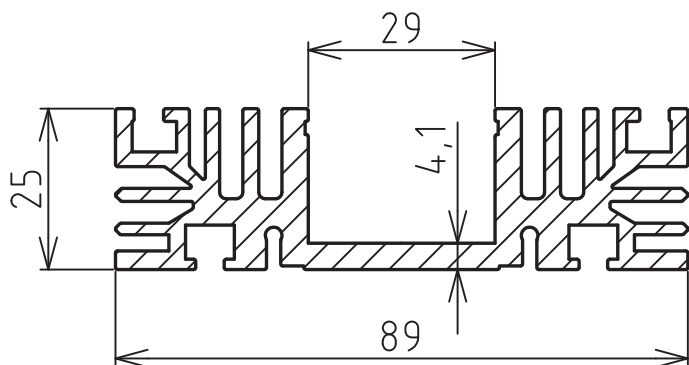


ZH 8779

hmotnosť / weight: 2,63 kg/m

obvod / perimeter: 633 mm

Rth (pre/for 100 mm): -- °C/W

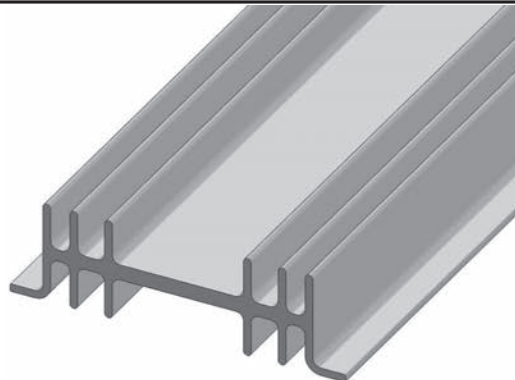
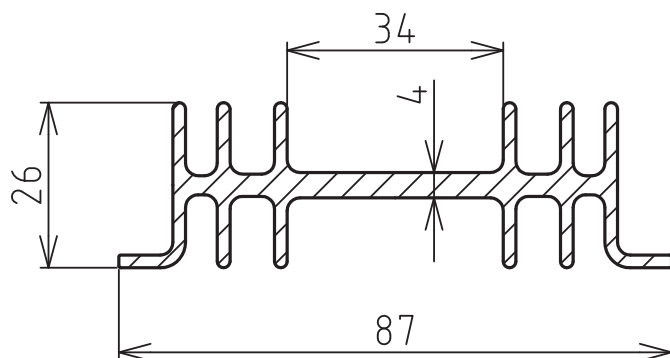


ZH 0752

hmotnosť / weight: 1,54 kg/m

obvod / perimeter: 485 mm

Rth (pre/for 100 mm): 2,8 °C/W

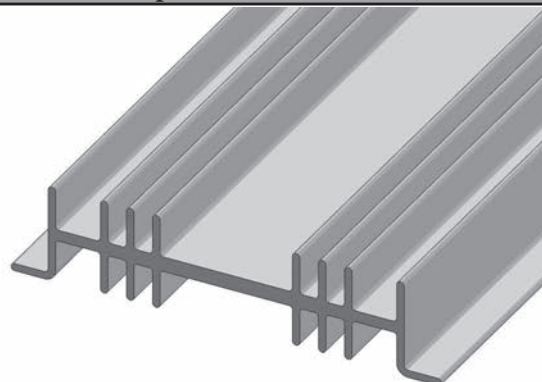
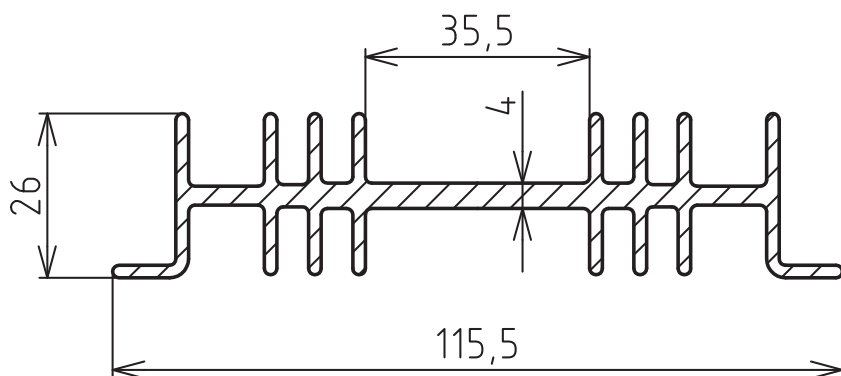


HY 54039

hmotnosť / weight: 1,99 kg/m

obvod / perimeter: 561 mm

Rth (pre/for 100 mm): 2,2 °C/W

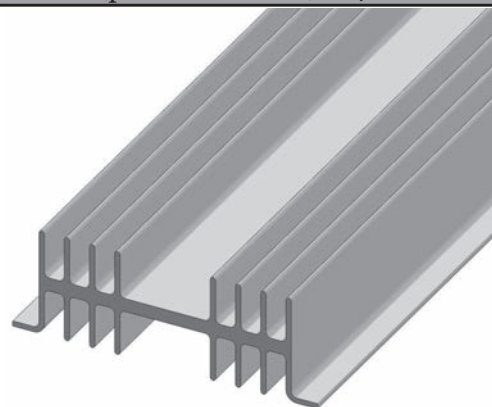
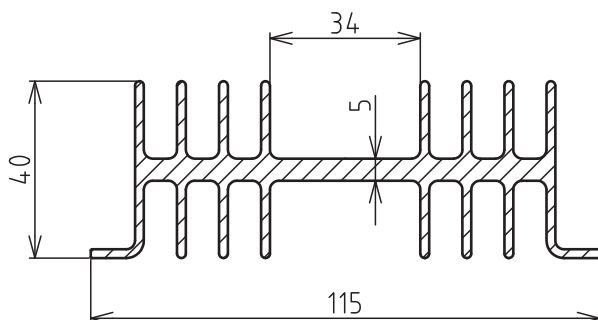


ZH 0753

hmotnosť / weight: 2,95 kg/m

obvod / perimeter: 758 mm

Rth (pre/for 100 mm): 1,80 °C/W

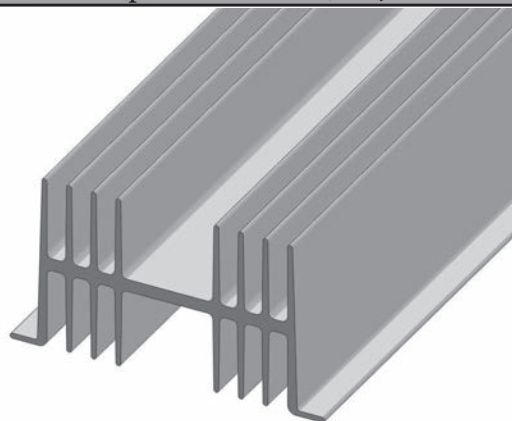
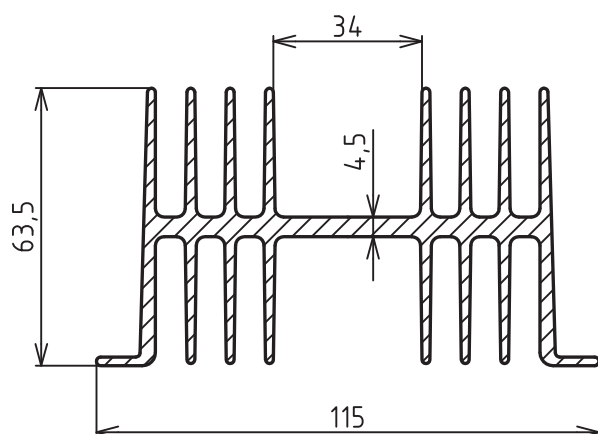


ZH 0137

hmotnosť / weight: 4,20 kg/m

obvod / perimeter: 1 122 mm

Rth (pre/for 100 mm): 1,15 °C/W

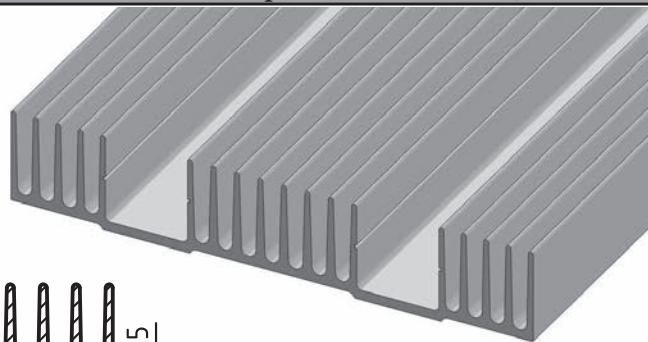
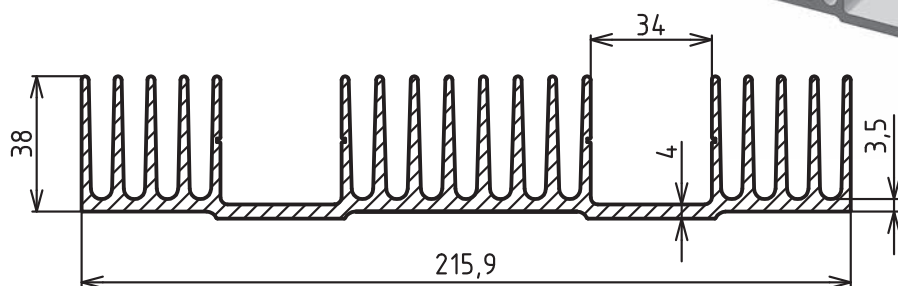


ZH 1929

hmotnosť / weight: 6,76 kg/m

obvod / perimeter: 1 742 mm

Rth (pre/for 100 mm): 0,65 °C/W

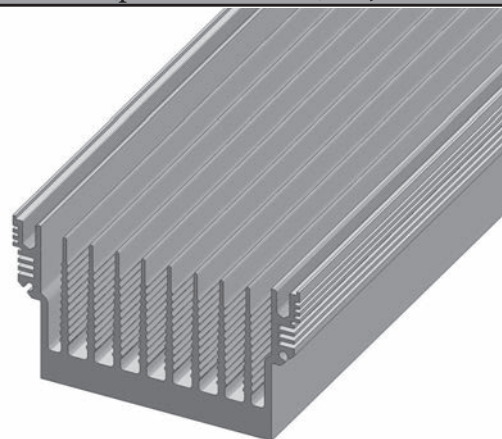
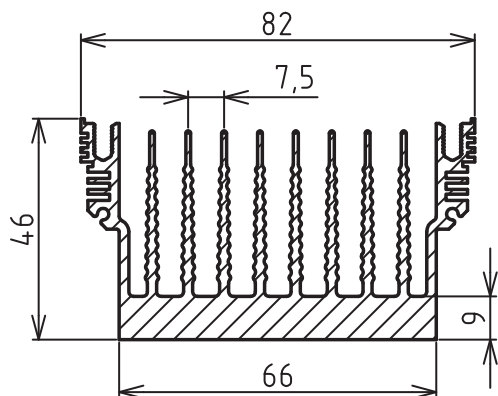


ES 19451

hmotnosť / weight: 3,30 kg/m

obvod / perimeter: 1 015 mm

Rth (pre/for 100 mm): 2,16 °C/W

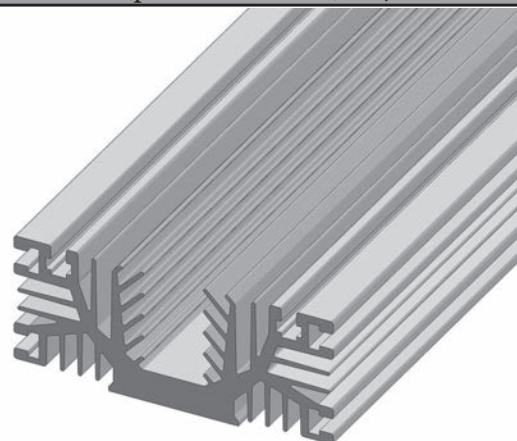
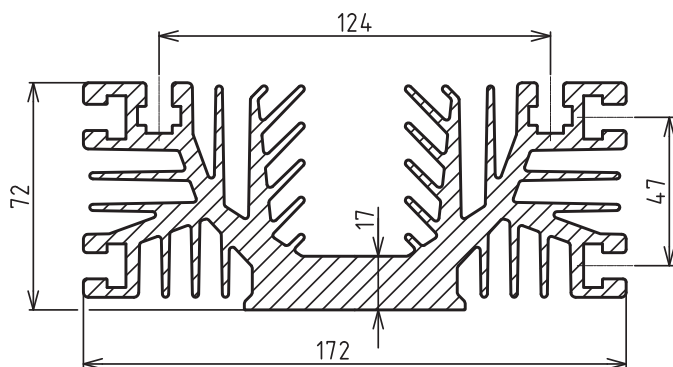


ZH 2428

hmotnosť / weight: 13,34 kg/m

obvod / perimeter: 1 979 mm

Rth (pre/for 100 mm): 0,84 °C/W

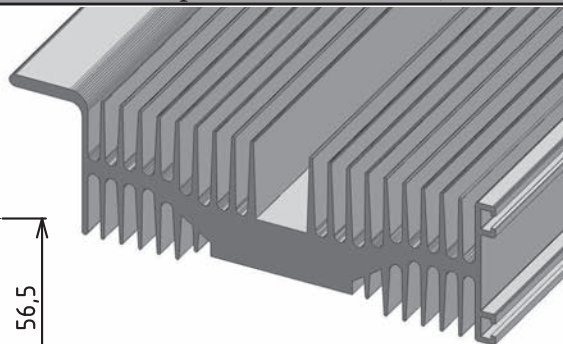
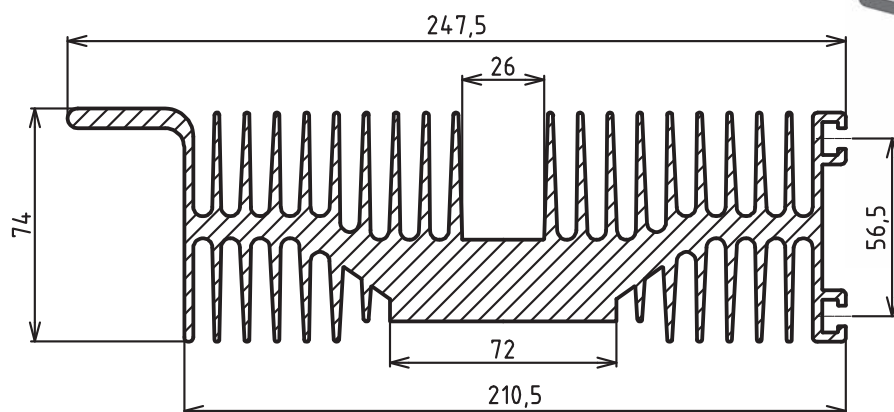


A 6670

hmotnosť / weight: 17,60 kg/m

obvod / perimeter: 2 681 mm

Rth (pre/for 100 mm): 0,4 °C/W

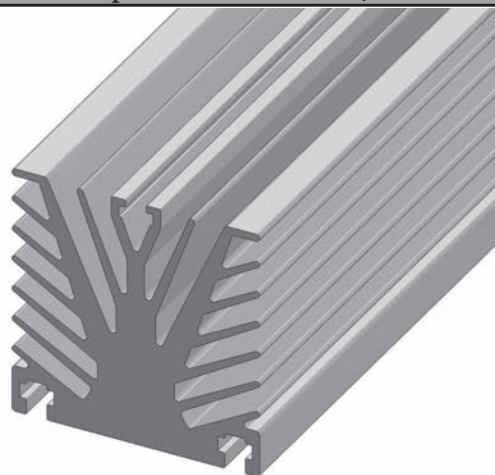
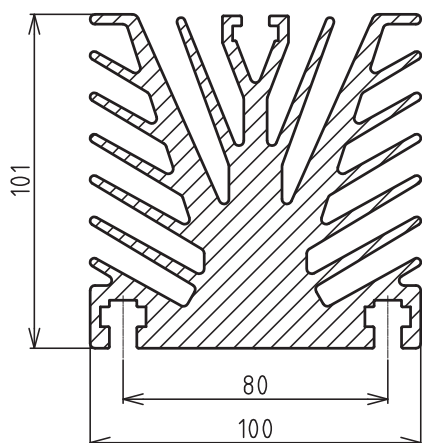


ZH 2838

hmotnosť / weight: 14,02 kg/m

obvod / perimeter: 1 553 mm

Rth (pre/for 100 mm): 0,79 °C/W

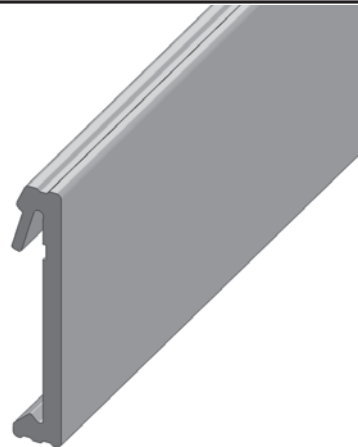
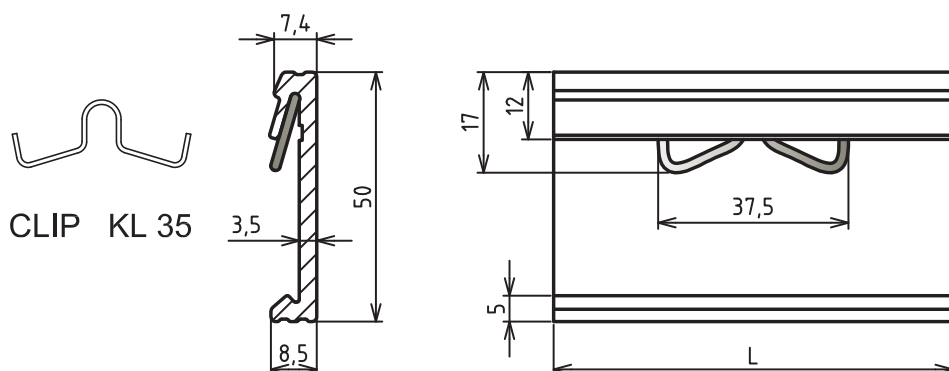


KL 35/50

hmotnosť / weight: 0,64 kg/m

obvod / perimeter: 145 mm

Rth (pre/for -- mm): -- °C/W



hmotnosť / weight:

kg/m

obvod / perimeter:

mm

Rth (pre/for

mm):

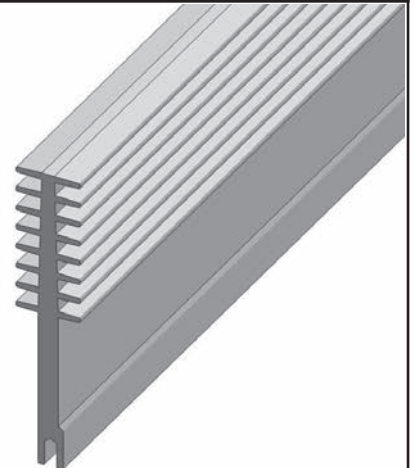
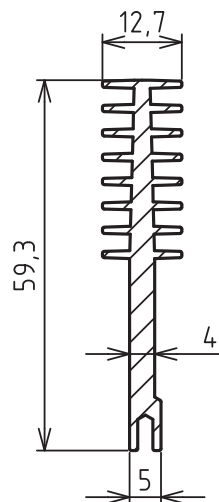
°C/W

ZH 4611

hmotnosť / weight: 0,81 kg/m

obvod / perimeter: 279 mm

Rth (pre/for 100 mm): 3,59 °C/W

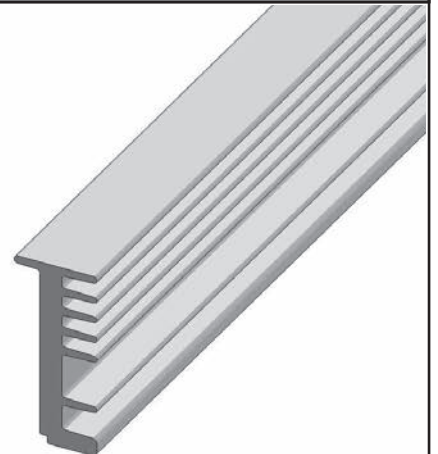
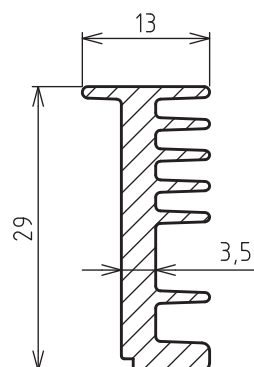


ZH 9057

hmotnosť / weight: 0,43 kg/m

obvod / perimeter: 141 mm

Rth (pre/for 100 mm): -- °C/W

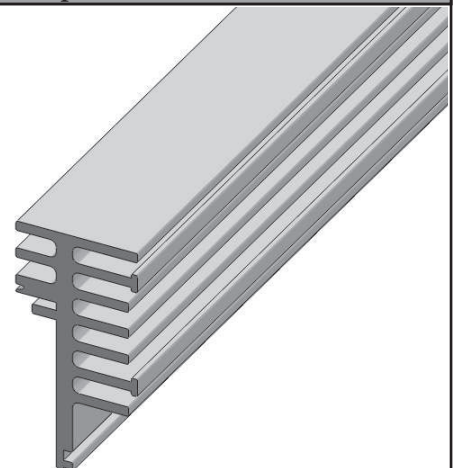
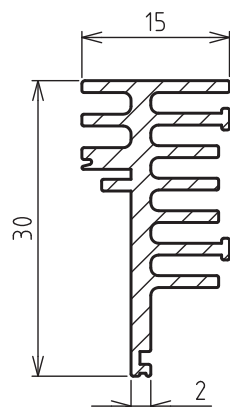


ZH 8678

hmotnosť / weight: 0,41 kg/m

obvod / perimeter: 205 mm

Rth (pre/for 100 mm): -- °C/W

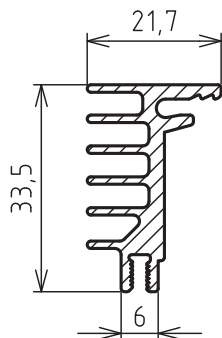


ZH 8247

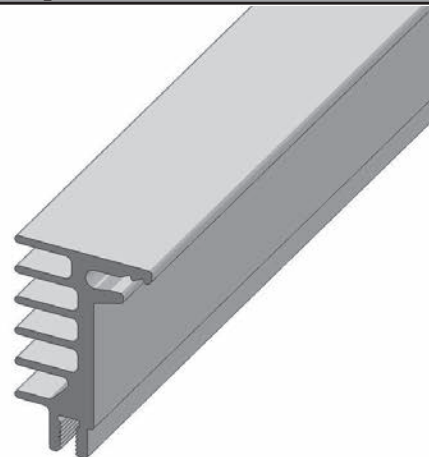
hmotnosť / weight: 0,56 kg/m

obvod / perimeter: 233 mm

Rth (pre/for 100 mm): 4,68 °C/W



CLIP 221007

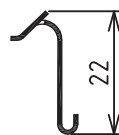
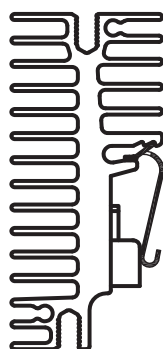
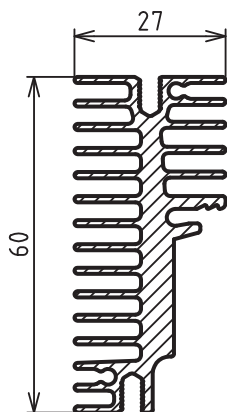


ZH 7505

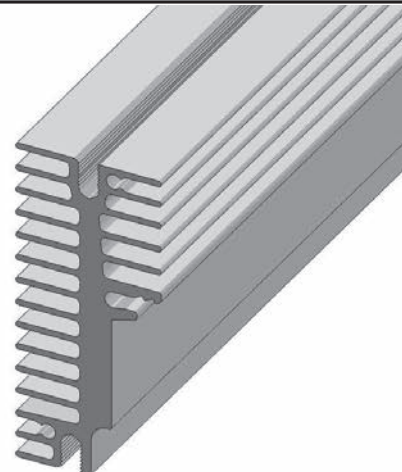
hmotnosť / weight: 1,53 kg/m

obvod / perimeter: 602 mm

Rth (pre/for 100 mm): 3,21 °C/W



CLIP 221007

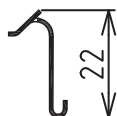
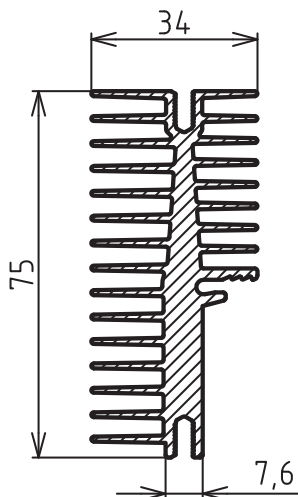


ZH 7504

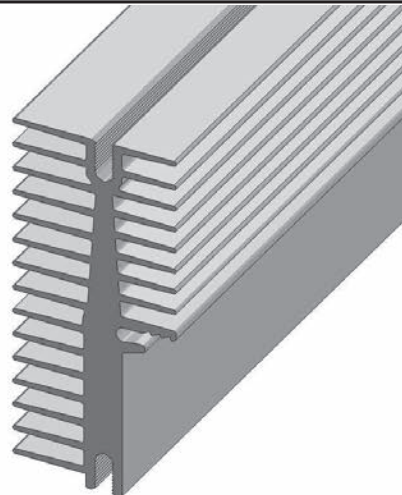
hmotnosť / weight: 2,42 kg/m

obvod / perimeter: 868 mm

Rth (pre/for 100 mm): 2,81 °C/W



CLIP 221007

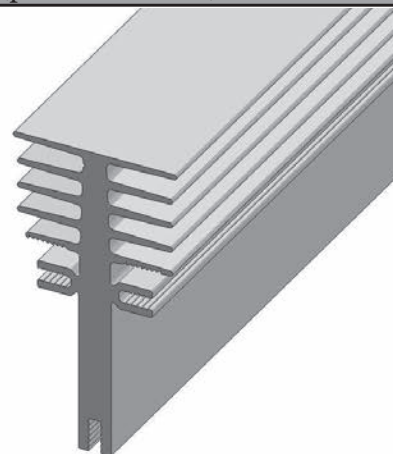
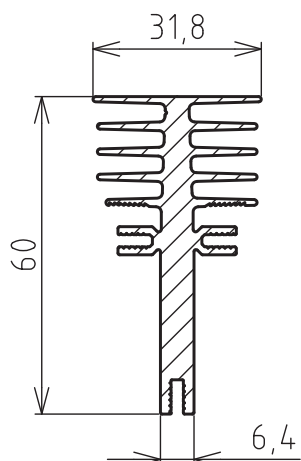


ZH 8555

hmotnosť / weight: 1,50 kg/m

obvod / perimeter: 455 mm

Rth (pre/for 100 mm): -- °C/W

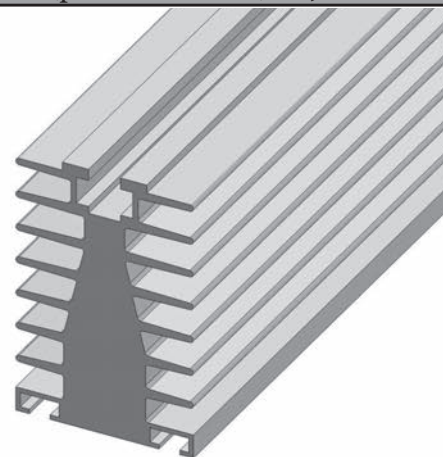
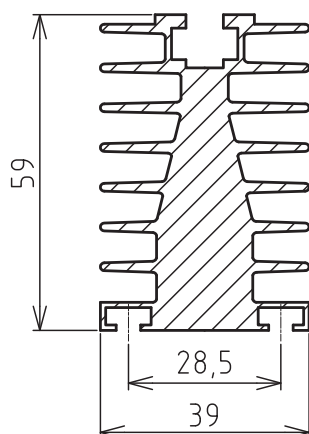


A 59

hmotnosť / weight: 3,30 kg/m

obvod / perimeter: 582 mm

Rth (pre/for 100 mm): 2,40 °C/W

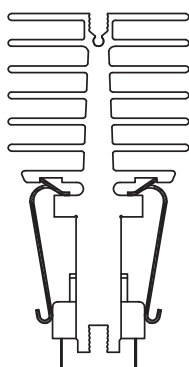
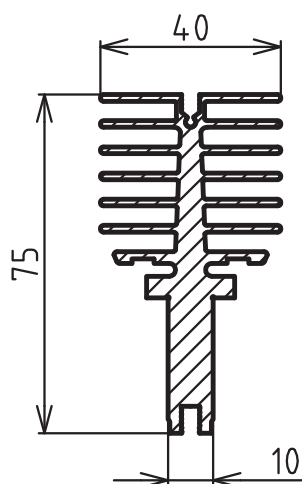


A 75M

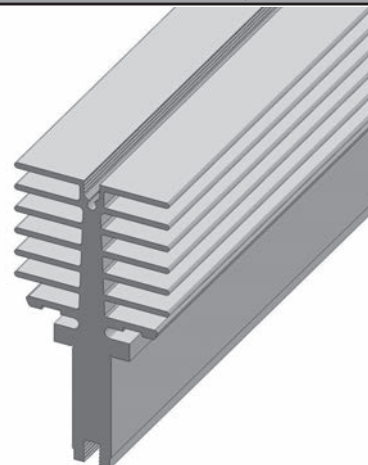
hmotnosť / weight: 2,55 kg/m

obvod / perimeter: 684 mm

Rth (pre/for 100 mm): 1,5 °C/W



CLIP 221007

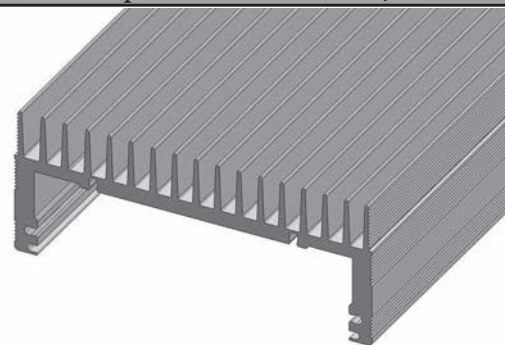
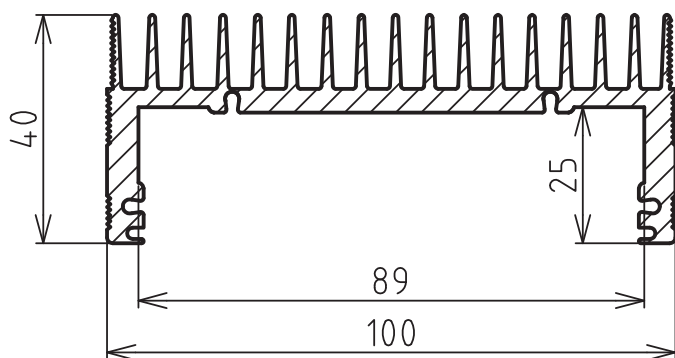


C 100

hmotnosť / weight: 2,40 kg/m

obvod / perimeter: 782 mm

Rth (pre/for 100 mm): 2,2 °C/W



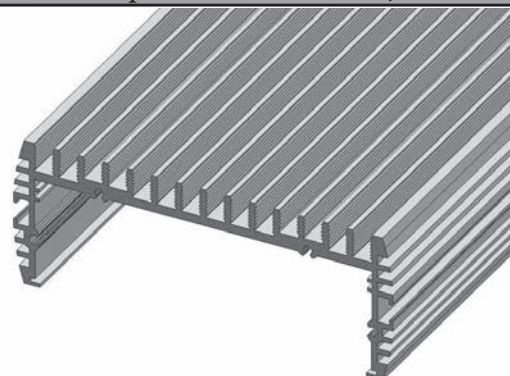
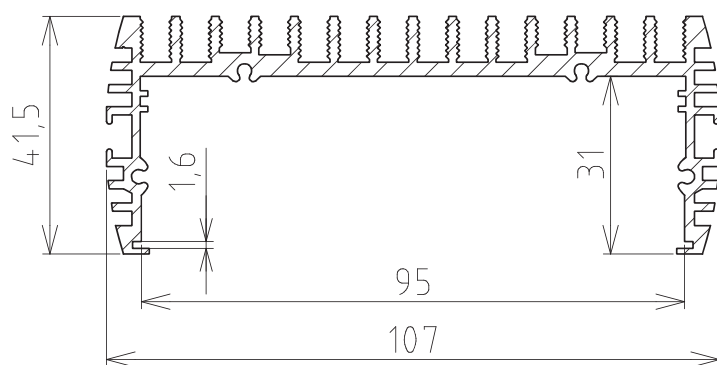
Krytky na požiadanie
Side Covers on request

C 107

hmotnosť / weight: 1,96 kg/m

obvod / perimeter: 795 mm

Rth (pre/for 100 mm): 2,6 °C/W



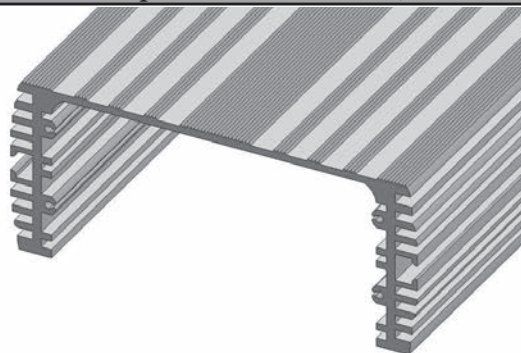
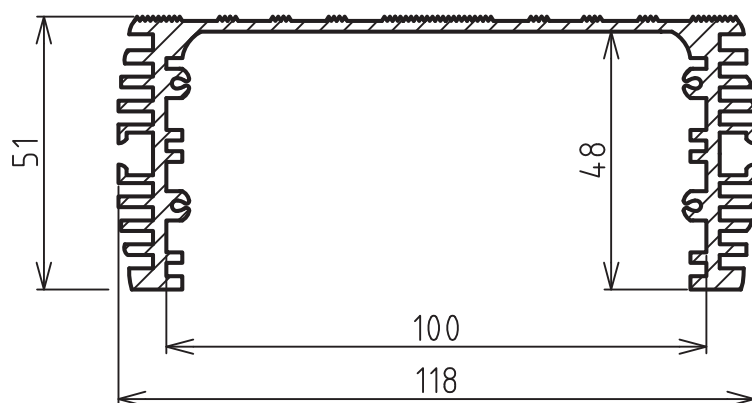
Krytky na požiadanie
Side Covers on request

C 118

hmotnosť / weight: 2,40 kg/m

obvod / perimeter: 684 mm

Rth (pre/for 150 mm): 2,1 °C/W



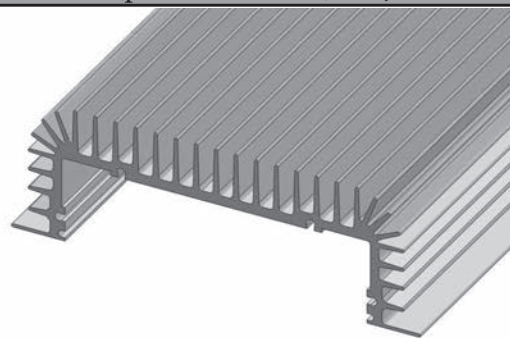
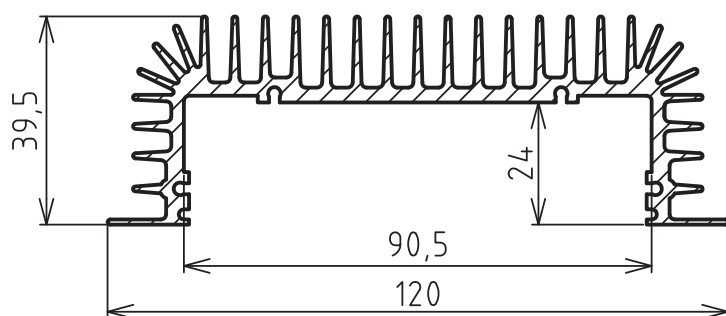
Krytky na požiadanie
Side Covers on request

C 120

hmotnosť / weight: 2,2 kg/m

obvod / perimeter: 927 mm

Rth (pre/for 150 mm): 1,2 °C/W



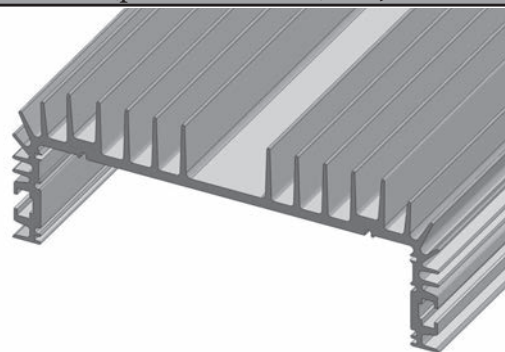
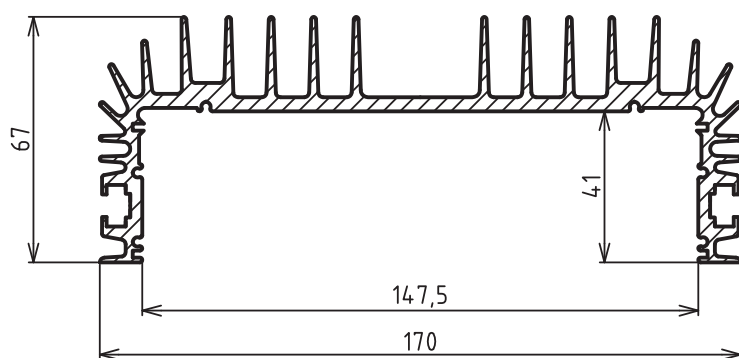
Krytky na požiadanie
Side Covers on request

C 170

hmotnosť / weight: 4,70 kg/m

obvod / perimeter: 970 mm

Rth (pre/for 200 mm): 0,8 °C/W



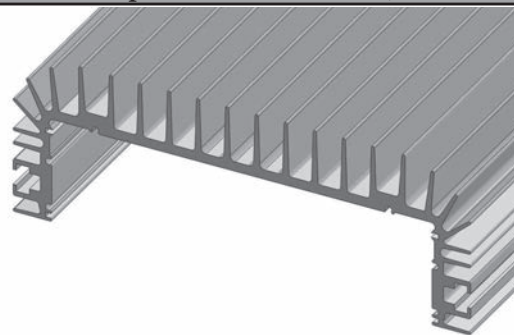
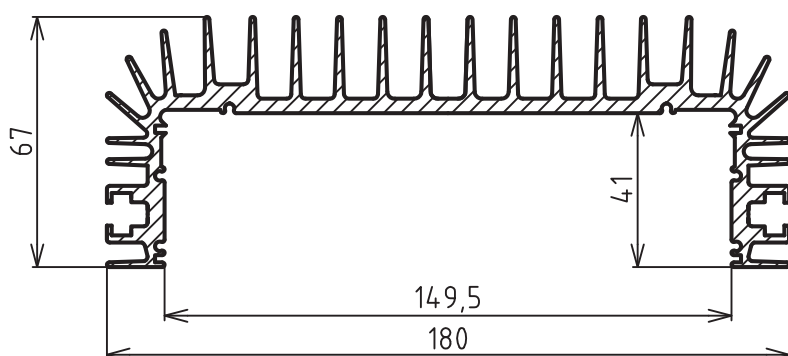
Krytky na požiadanie
Side Covers on request

C 180

hmotnosť / weight: 5,60 kg/m

obvod / perimeter: 970 mm

Rth (pre/for 200 mm): 0,7 °C/W



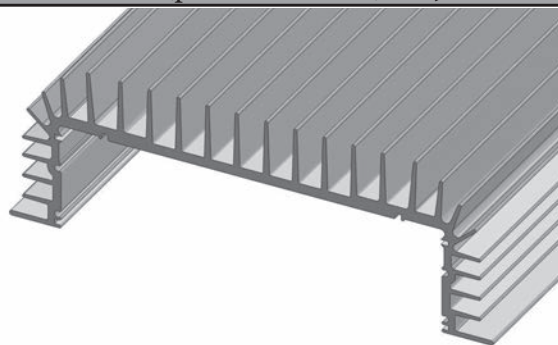
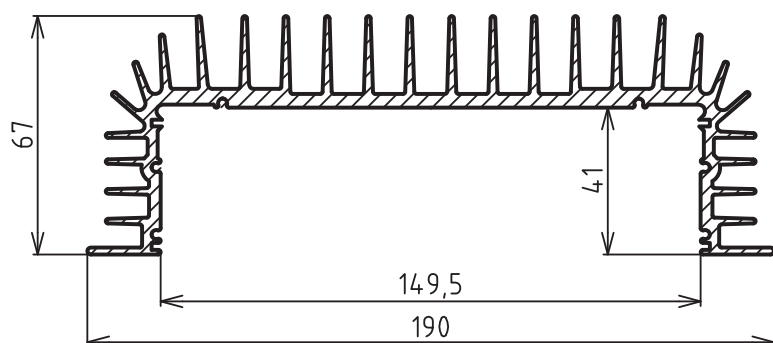
Krytky na požiadanie
Side Covers on request

C 190

hmotnosť / weight: 4,95 kg/m

obvod / perimeter: 970 mm

Rth (pre/for 150 mm): 0,9 °C/W



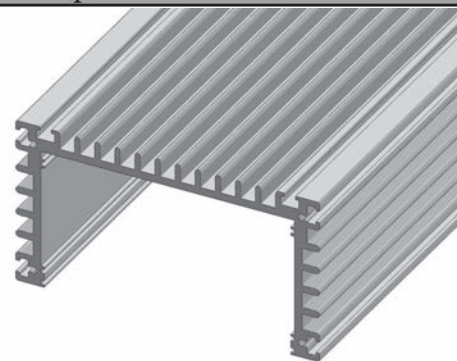
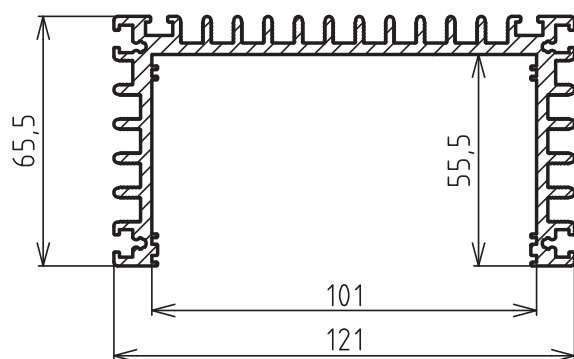
Krytky na požiadanie
Side Covers on request

ZH 4268

hmotnosť / weight: 3,35 kg/m

obvod / perimeter: 916 mm

Rth (pre/for 100 mm): -- °C/W



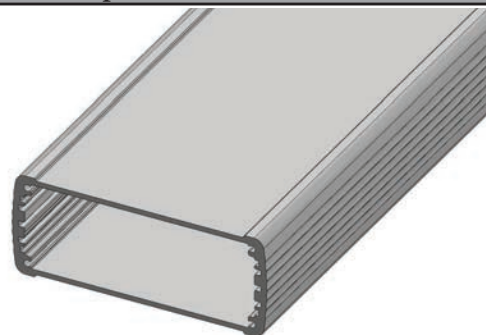
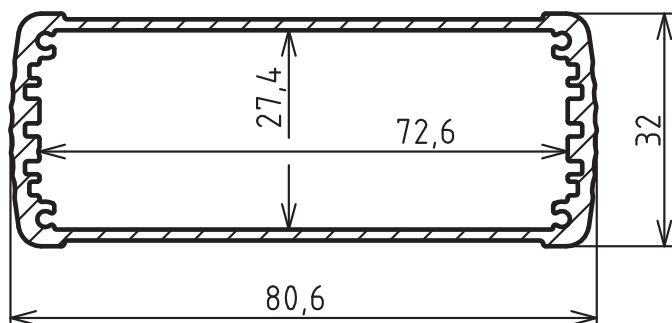
Krytky na požiadanie
Side Covers on request

HY 25804

hmotnosť / weight: 1,14 kg/m

obvod / perimeter: 218 mm

Rth (pre/for 100 mm): -- °C/W



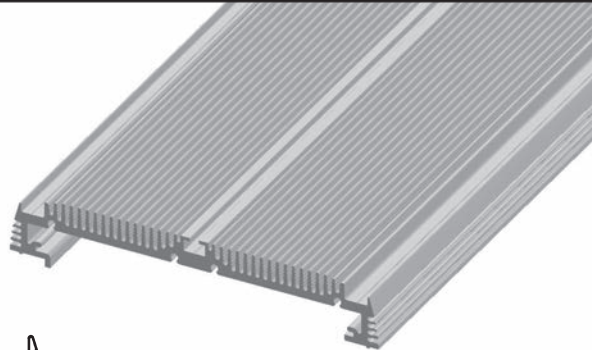
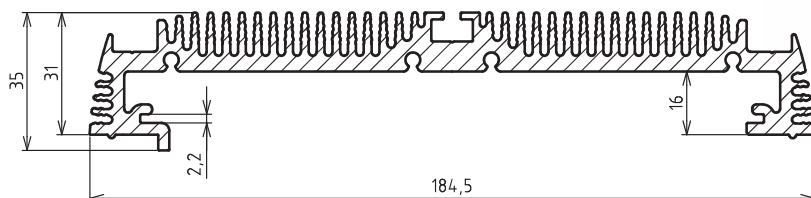
Krytky na požiadanie
Side Covers on request

HY 54306

hmotnosť / weight: 4,9 kg/m

obvod / perimeter: 1283 mm

Rth (pre/for - mm): -- °C/W

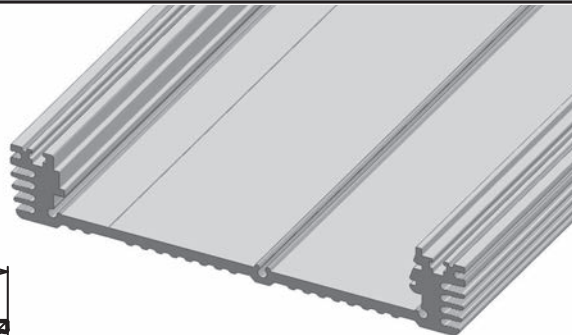
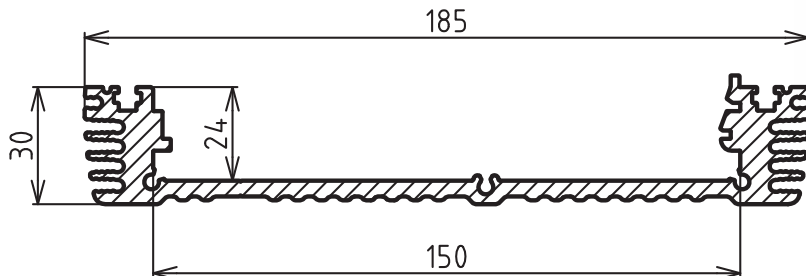


ZH 8926

hmotnosť / weight: 4,09 kg/m

obvod / perimeter: 734 mm

Rth (pre/for - mm): -- °C/W

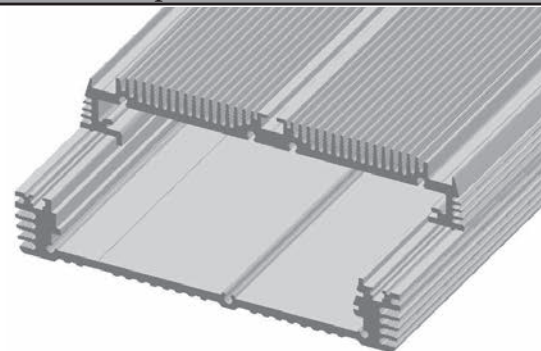
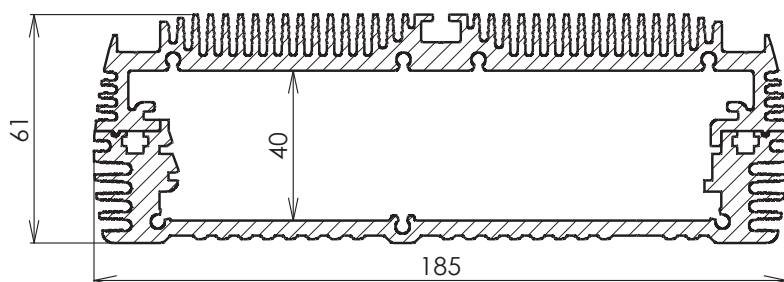


zostava / assembly

hmotnosť / weight: kg/m

obvod / perimeter: mm

Rth (pre/for mm): °C/W



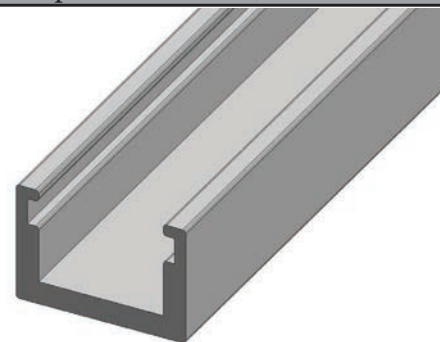
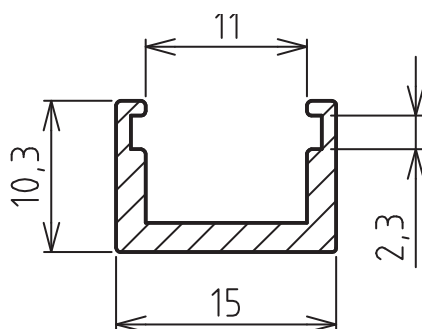
Krytky na požiadanie
Side Covers on request

ZH 8608

hmotnosť / weight: 0,16 kg/m

obvod / perimeter: 70 mm

Rth (pre/for - mm): -- °C/W



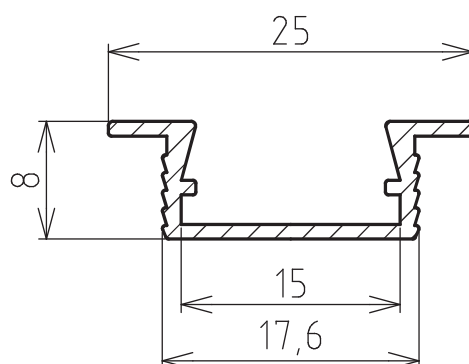
Krytky na požiadanie
Side Covers on request

ZH 9099

hmotnosť / weight: 0,13 kg/m

obvod / perimeter: 88 mm

Rth (pre/for - mm): -- °C/W



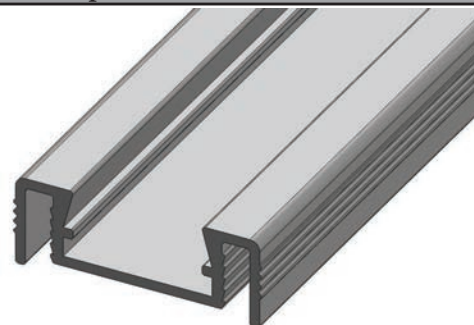
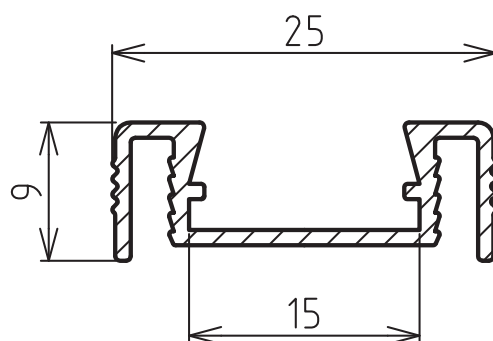
Krytky na požiadanie
Side Covers on request

ZH 9460

hmotnosť / weight: 0,17 kg/m

obvod / perimeter: 119 mm

Rth (pre/for - mm): -- °C/W



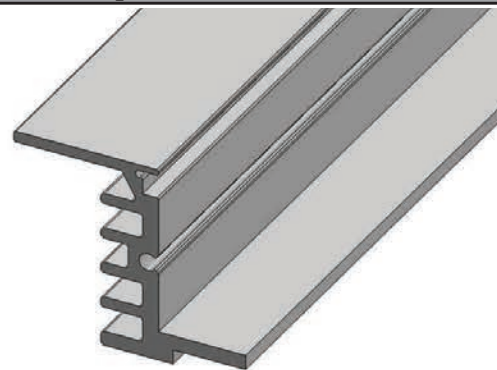
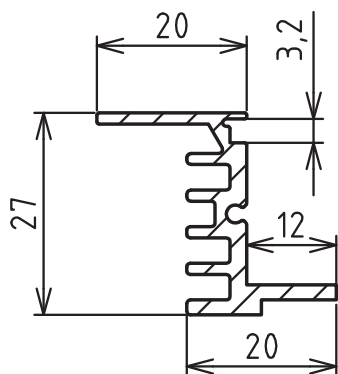
Krytky na požiadanie
Side Covers on request

ZH 9952

hmotnosť / weight: 0,44 kg/m

obvod / perimeter: 174 mm

Rth (pre/for - mm): -- °C/W



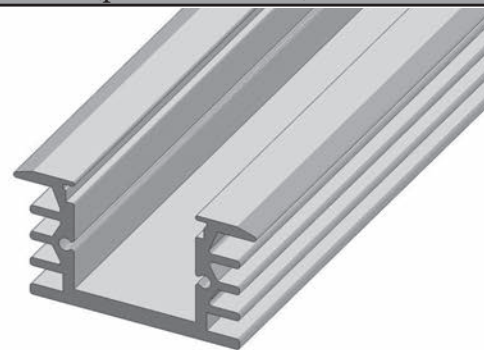
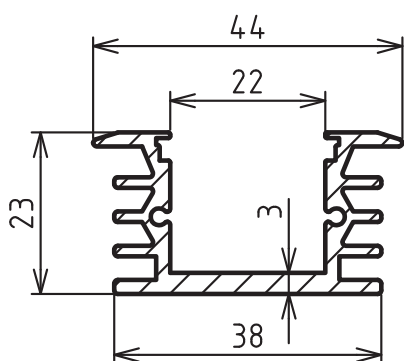
Krytky na požiadanie
Side Covers on request

ZH 9044

hmotnosť / weight: 0,73 kg/m

obvod / perimeter: 268 mm

Rth (pre/for - mm): -- °C/W



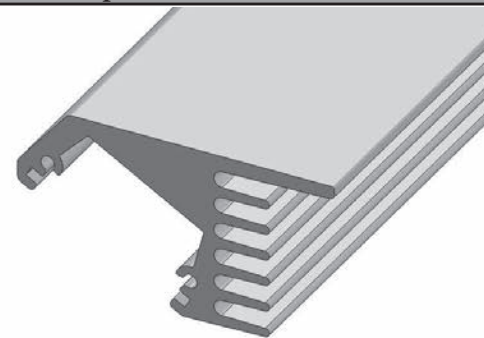
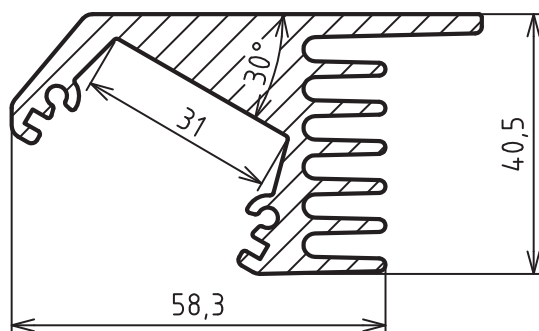
Krytky na požiadanie
Side Covers on request

ZH 7788

hmotnosť / weight: 2,34 kg/m

obvod / perimeter: 404 mm

Rth (pre/for - mm): -- °C/W



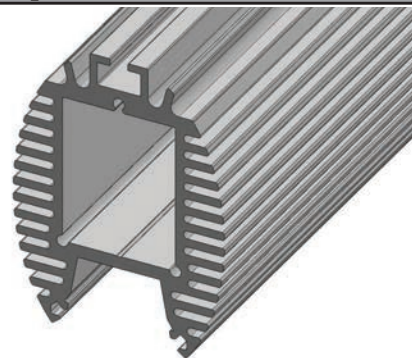
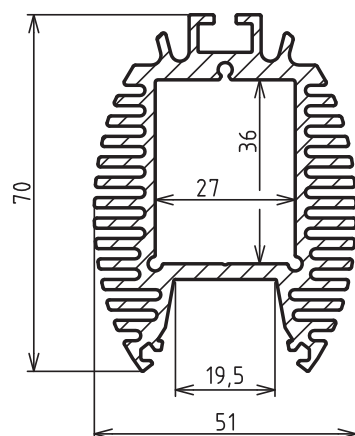
Krytky na požiadanie
Side Covers on request

HY 25785

hmotnosť / weight: 2,68 kg/m

obvod / perimeter: 690 mm

Rth (pre/for - mm): -- °C/W



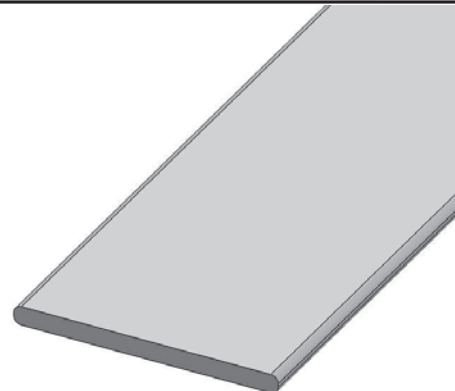
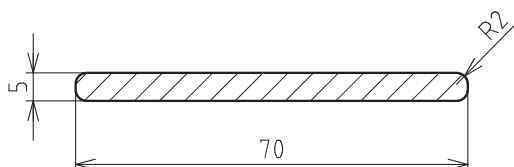
Krytky na požiadanie
Side Covers on request

ZH 11-0691

hmotnosť / weight: 0,94 kg/m

obvod / perimeter: 147 mm

Rth (pre/for - mm): -- °C/W



hmotnosť / weight:

kg/m

obvod / perimeter:

mm

Rth (pre/for

mm):

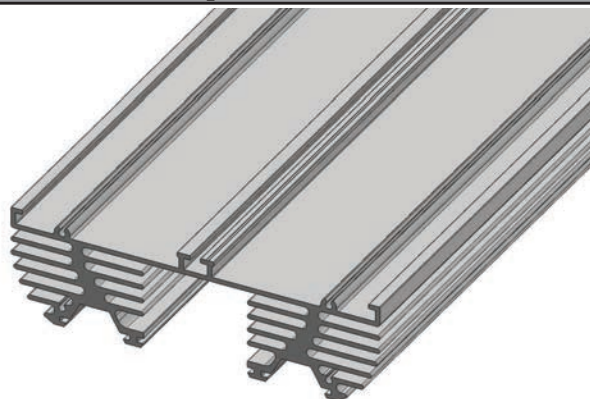
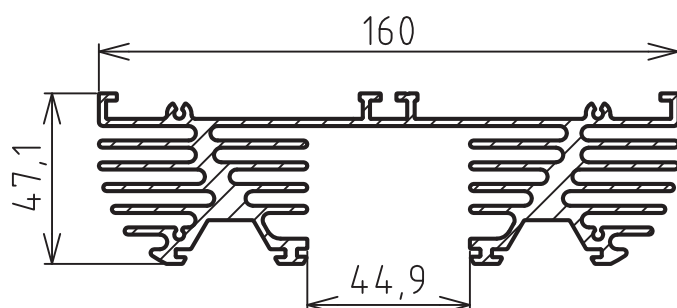
°C/W

HY 25511

hmotnosť / weight: 5,26 kg/m

obvod / perimeter: 1 564 mm

Rth (pre/for - mm): -- °C/W

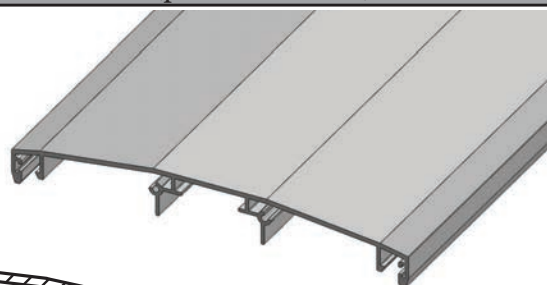
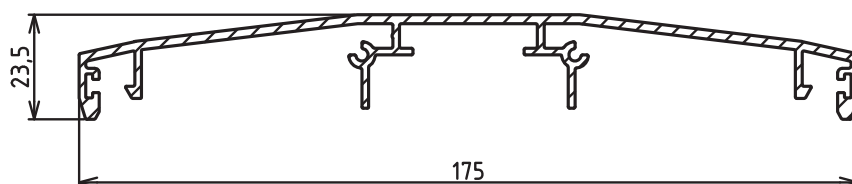


HY 28005

hmotnosť / weight: 1,54 kg/m

obvod / perimeter: 614 mm

Rth (pre/for - mm): -- °C/W

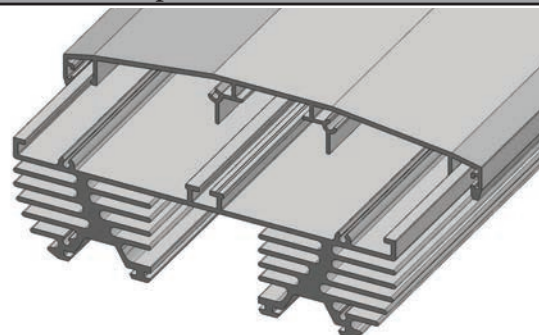
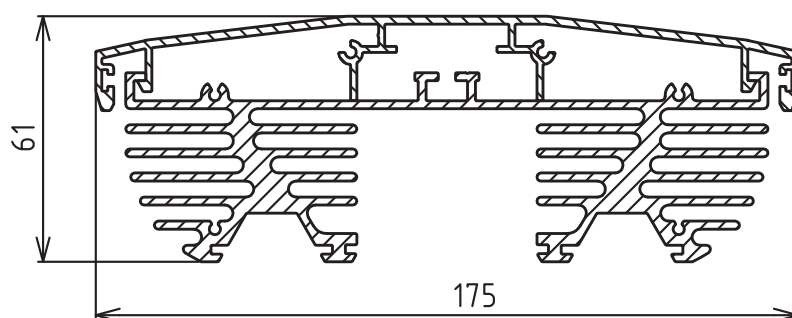


zostava / assembly

hmotnosť / weight: kg/m

obvod / perimeter: mm

Rth (pre/for mm): °C/W



Krytky na požiadanie
Side Covers on request

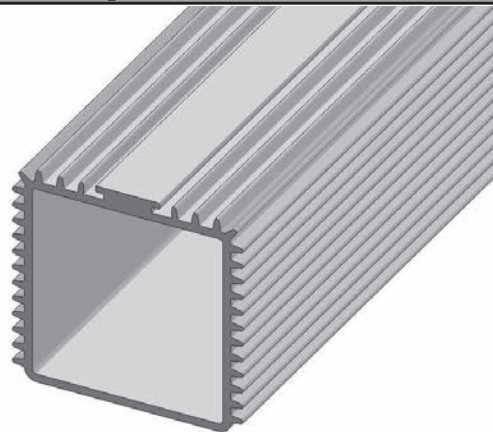
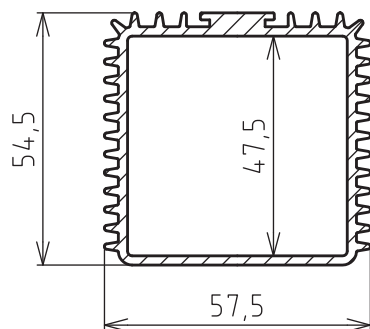
ZH 6504

hmotnosť / weight: 1,55 kg/m

obvod / perimeter: 423 mm

Rth (pre/for -- mm): -- °C/W

Dopredaj
Bargain Sale

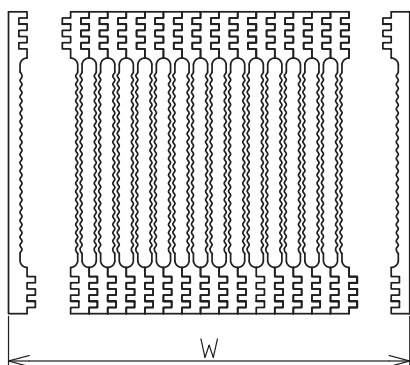
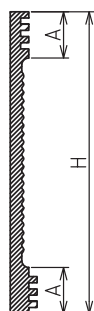


I 50 (71, 80, 91, 128) MF

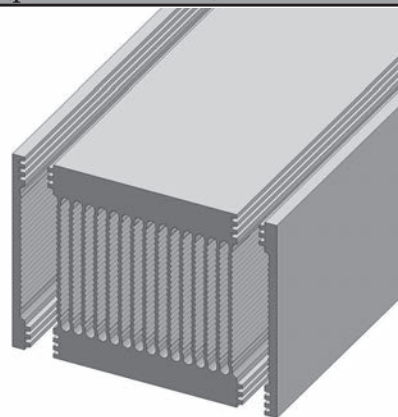
hmotnosť / weight: --- kg/m

obvod / perimeter: ---- mm

Rth (pre/for -- mm): -- °C/W



TYP	H	A
I 50 MF	51	11
I 71 MF	71	14
I 80 MF	81,5	11
I 91 MF	91,5	13,8
I 128 MF	128	14



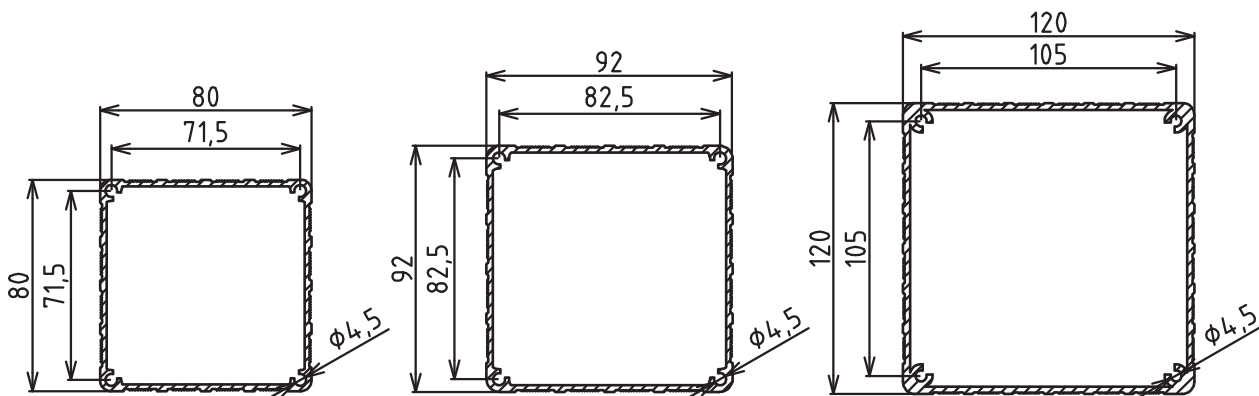
W - podľa požiadavky / according to a request
na objednávku / made-to-order

SPACER

hmotnosť / weight: --- kg/m

obvod / perimeter: ---- mm

Rth (pre/for -- mm): -- °C/W



na objednávku / made-to-order

Profilu môžu mať iný vzťah rebier, rozostupy rebier, prípadne hrúbku základne. Informujte sa prosím o aktuálnom stave pred objednaním.
The profiles can have a different visage of ribs, spacing of the ribs or thickness of the base. Please, inquire about the current state before ordering.

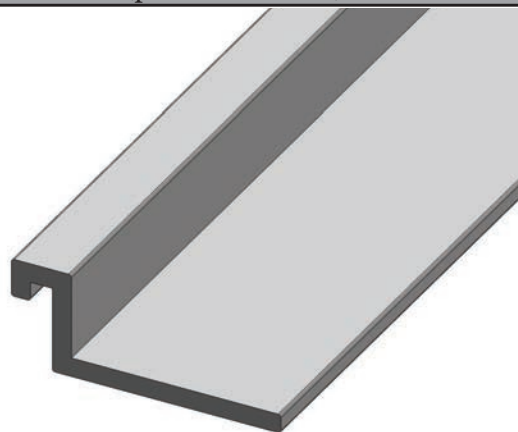
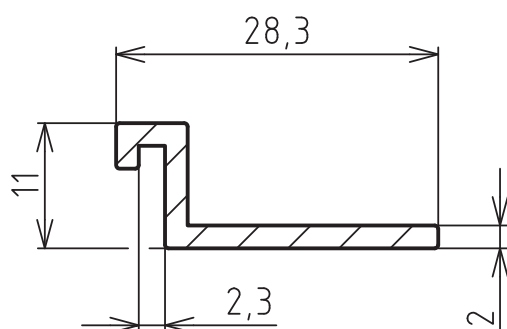
ZH 2924

hmotnosť / weight: 0,21 kg/m

obvod / perimeter: 82 mm

Rth (pre/for -- mm): -- °C/W

Dopredaj
Bargain Sale

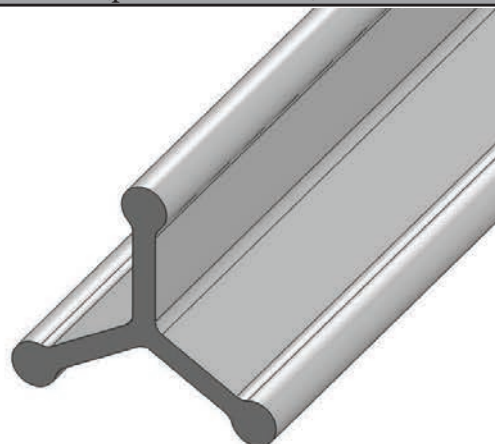
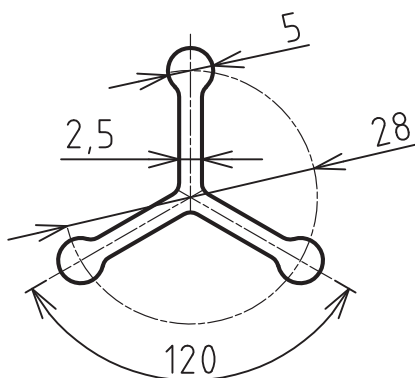


ZH 4410

hmotnosť / weight: 0,39 kg/m

obvod / perimeter: 105 mm

Rth (pre/for -- mm): -- °C/W



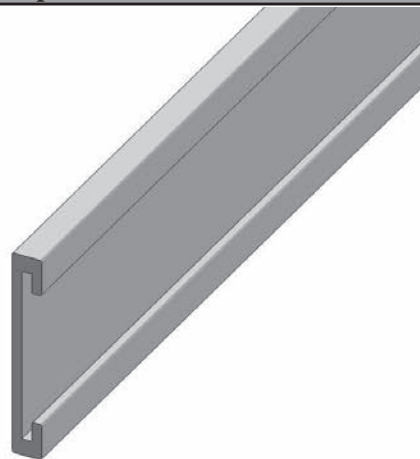
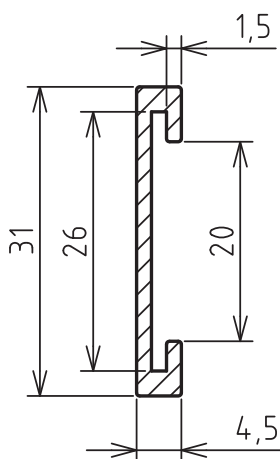
ZH 8090

hmotnosť / weight: 0,19 kg/m

obvod / perimeter: 88 mm

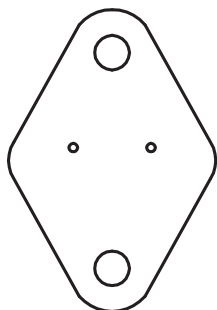
Rth (pre/for -- mm): -- °C/W

Dopredaj
Bargain Sale



IZOLAČNÉ PODLOŽKY / ISOLATING PLATES

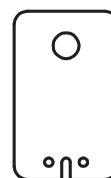
Sľudové podložky / Micaceous plates



T03

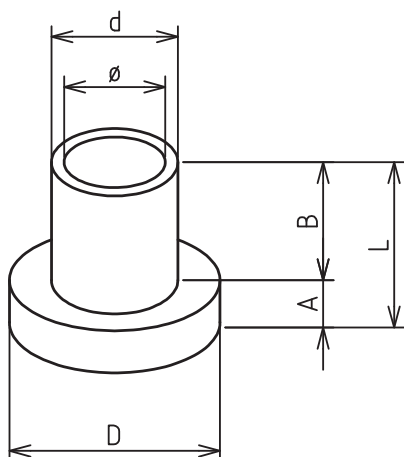


T0126



T0220

Nylonové podložky / Nylon plates



TYP	D	d	Ø	A	B	L
TO3	6,6	3,9	3	1,4	3,6	5
TO220	6	3,6	3	1,2	1,2	2,4

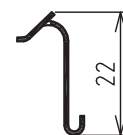
Spony / Clips



TEA 35



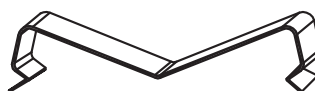
TEA 35A



CLIP 221007



TEA 40



TEA 45

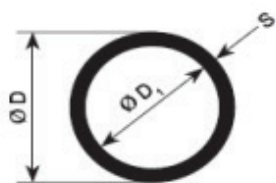


MOLLA T13

Poznámky / Notes

ŠTANDARDNÉ PROFILY / STANDARD PROFILES

Kruhové rúry
Round tubes



D (mm)	S (mm)	D1 (mm)	váha (kg/m)
8	2	4	0,1
10	1	8	0,08
12	1	10	0,1
16	1,5	13	0,19
20	1,5	17	0,24
25	2	21	0,39
28	1	26	0,23
30	2	26	0,48
32	1	30	0,26
35	2	31	0,56
40	2	36	0,65
45	3	39	1,07
48,3	3,5	41,3	1,34
50	5	40	1,92
60	1,4	57,2	0,7
60	2	56	0,99
70	3	64	1,71
80	2	76	1,33
90	13	64	8,51
106	3	100	2,18
130	10	110	10,21

Kruhové tyče
Round bars

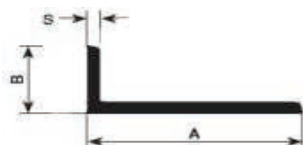


D (mm)	váha (kg/m)
6	0,07
8	0,14
10	0,21
12	0,31
16	0,55
18	0,69
20	0,85
25	1,33
30	1,92
35	2,58
38	3,05
40	3,38
45	4,28
50	5,32
60	7,66
65	8,96
70	10,39
80	13,57

Minimálne množstvo 1 tyč (dĺžky 3-6m)
Minimu order quantity 1 bar (length 3-6m)

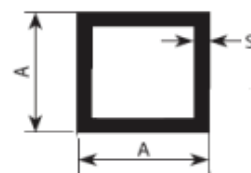
ŠTANDARDNÉ PROFILY / STANDARD PROFILES

L-profile
L-profiles



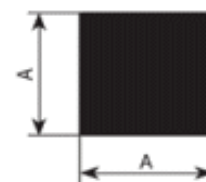
A (mm)	B (mm)	S (mm)	váha (kg/m)
10	10	2	0,1
15	15	1,5	0,12
20	10	2	0,15
20	15	2	0,18
20	20	2	0,21
20	20	3	0,3
25	25	2	0,26
25	25	3	0,38
30	15	2	0,23
30	20	2	0,26
30	30	2	0,31
30	30	3	0,46
35	35	3	0,55
40	15	1,5	0,22
40	20	2	0,31
40	40	2	0,42
40	40	4	0,82
45	45	1,8	0,43
50	25	2	0,39
50	30	3	0,63
50	50	2	0,53
50	50	3	0,79
50	50	5	1,29
60	20	2	0,42
60	40	2,6	0,69
60	40	4	1,04
60	40	5	1,29
60	60	2	0,64
60	60	5	1,56
70	30	3	0,79
80	25	2	0,56
80	40	4	1,26
80	80	3	1,28
80	80	5	2,1
100	25	2	0,67
100	50	3	1,2
100	50	5	1,97
100	100	10	5,15
200	50	3	2,01

Štvorcové rúry
Square tubes



A (mm)	S (mm)	váha (kg/m)
15	1,5	0,22
20	1,5	0,3
25	2	0,5
30	2	0,61
30	3	0,88
35	2	0,72
40	2	0,82
40	3	1,2
40	4	1,56
50	2	1,04
60	6	3,52
70	4	2,86
80	3	2,5

Štvorcové tyče
Square bars



A (mm)	váha (kg/m)
8	0,17
12	0,39
16	0,69
20	1,08
25	1,69
30	2,44
40	4,34
50	6,78
60	9,76

Minimálne množstvo 1 tyč (dĺžky 3-6m)
Minimu order quantity 1 bar (length 3-6m)

ŠTANDARDNÉ PROFILY / STANDARD PROFILES

Ploché tyče

Flat bars



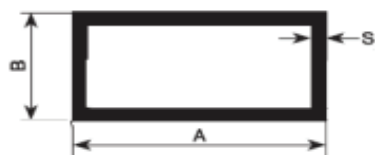
A (mm)	B (mm)	váha (kg/m)
10	2	0,05
15	2	0,08
15	8	0,33
16	3	0,13
20	2	0,11
20	3	0,16
20	4	0,22
20	5	0,27
20	10	0,54
25	2	0,14
25	3	0,2
25	15	1,02
30	2	0,16
30	3	0,24
30	4	0,33
30	5	0,41
30	8	0,65
30	10	0,81
30	12	0,98
30	15	1,22
35	15	1,42
40	2	0,22
40	5	0,54
40	10	1,08
40	15	1,63
40	20	2,17
50	3	0,41
50	5	0,68
50	10	1,36
50	30	4,06
60	5	0,81
60	6	0,98
60	10	1,63
60	30	4,88

80	3	0,65
80	5	1,08
80	8	1,73
80	10	2,17
80	20	4,34
80	40	8,67
100	4	1,08
100	10	2,7
100	20	5,42
100	40	10,84
120	10	3,25
120	20	6,5
125	25	8,47
150	5	2,03
150	10	4,07
150	40	16,26
200	10	5,42

Minimálne množstvo 1 tyč (dĺžky 3-6m)
 Minimu order quantity 1 bar (length 3-6m)

ŠTANDARDNÉ PROFILY / STANDARD PROFILES

Pravouhlé rúry
Rectangular tubes



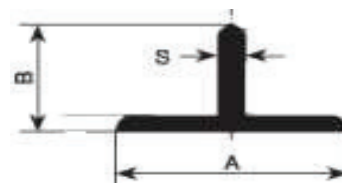
A (mm)	B (mm)	S (mm)	váha (kg/m)
20	10	1,5	0,22
20	15	2	0,34
25	16	2,1	0,42
30	20	2	0,5
40	20	2	0,61
40	30	2	0,71
40	30	4	1,34
50	15	2	0,66
50	25	2	0,77
50	30	2	0,82
60	20	2	0,82
60	30	2	0,93
60	40	2,5	1,29
80	18	2	1,02
80	20	2	1,04
80	40	2	1,26
80	40	3	1,85
80	50	4	2,65
100	20	2	1,26
100	40	4	2,86
100	80	3	2,83
120	20	2	1,47
120	40	4	3,3
120	80	3	3,15
150	20	1,8	1,62
200	50	4	5,25

U-profile
U-profiles



A (mm)	B (mm)	S (mm)	váha (kg/m)
10	10	2	0,14
12	12	2	0,17
15	15	2	0,21
15	20	2	0,28
20	20	2	0,3
23	12,5	2	0,24
25	25	2	0,39
30	20	2	0,36
30	30	3	0,68
40	20	2	0,51
40	40	2	0,63
40	40	4	1,21
50	30	4	1,11
50	40	4	1,32
50	40	5	1,63
50	50	3	1,17
80	40	5	2,03
100	50	5	2,58

L-profile
L-profiles



A (mm)	B (mm)	S (mm)	váha (kg/m)
15	15	2	0,15
20	20	2	0,21
25	25	3	0,38
30	30	3	0,47
40	40	4	0,82
80	45	2	0,67

Minimálne množstvo 1 tyč (dĺžky 3-6m)
Minimu order quantity 1 bar (length 3-6m)

Zoznam chladičov / List of heatsinks

A 59	33	KEAH 200	10	ZH 4410	43
A 75M	33	KK 200	8	ZH 4611	31
A 6670	29	KL 35/50	30	ZH 5073	13
C 100	34	KX 250	21	ZH 6465	8
C 107	34	KX 300	23	ZH 6504	42
C 118	34	KY 250	22	ZH 6681	6
C 120	35	Nylonové podložky		ZH 6789	14
C 170	35	Nylon plates	44	ZH 7484	15
C 180	35	Sľudové podložky		ZH 7485	14
C 190	36	Micaceous plates	44	ZH 7503	4
ES 19451	29	SPACER	42	ZH 7504	32
HY 25345	15	Spony / Clips	44	ZH 7505	32
HY 25346	13	ST- 45FM	2	ZH 7770	14
HY 25417	4	ST-T13/typ	3	ZH 7771	11
HY 25511	41	ST-T19	3	ZH 7788	39
HY 25785	40	ST-T22	1	ZH 8001	11
HY 25804	36	ST-T25A	1	ZH 8090	43
HY 28005	41	ST-TE19	1	ZH 8247	32
HY 28194	26	ST-TE28	2	ZH 8501	7
HY 28339	9	ST-TEA28	2	ZH 8555	33
HY 54039	27	T 38	5	ZH 8608	38
HY 54306	37	T 54	25	ZH 8624	7
I 50 (71, 80, 91, 128) MF	42	T 70	25	ZH 8662	5
IT 0265	19	T 88	26	ZH 8678	31
IT 5303	16	TE 65	25	ZH 8708	19
IT 5498	16	TEA 35	24	ZH 8779	27
K 66	15	TEA 40	24	ZH 8889	6
K 76	11	TEA 45	24	ZH 8926	37
K 112	18	ZH 11-0691	40	ZH 9025	4
K 163	9	ZH 0137	28	ZH 9044	39
K 197	8	ZH 0610	9	ZH 9057	31
K 200	16	ZH 0752	27	ZH 9099	38
K 216	21	ZH 0753	28	ZH 9152	7
K 230	20	ZH 1136	5	ZH 9238	18
K 245	10	ZH 1910	6	ZH 9250	12
K 250	17	ZH 1929	28	ZH 9460	38
K 300	17	ZH 2428	29	ZH 9481	12
K 400	17	ZH 2476	26	ZH 9952	39
KA 200	21	ZH 2533	18	zváraný chladič welded heatsink	23
KE 190	20	ZH 2838	30		
KE 215	20	ZH 2924	43		
KE 300	23	ZH 3197	19	Štandardné profily	46-49
KEA 300	10	ZH 4185	13		
		ZH 4268	36		



GAMABAY

Dizajnové LED svietidlo vhodné na osvetelenie priemyslených hál, pracovných priestorov a chodieb. Jednoduchá celohliníková konštrukcia s kvalitnou OSRAM LED technológiu zaručujú bezproblémovú a dlhú prevádzku. svietidla.

60W	80W	120W
6300 lm	8 400 lm	12 600 lm
50X16X35 cm	80X16X35 cm	120x16X35cm
60° / 90° / 120°		
účinnosť predpradníka > 0,95		
OSRAM LED		
CRI 80		
4000 - 6000° K		
aluminium, PMMA		

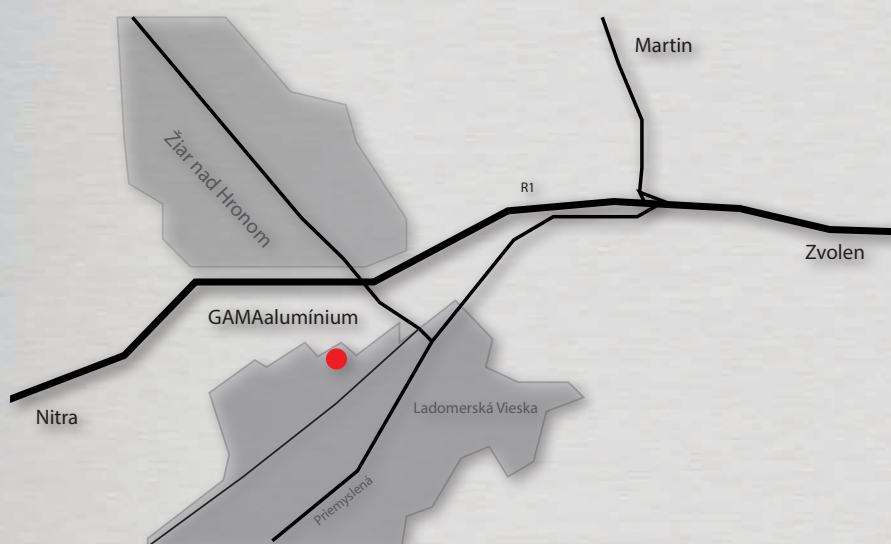
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