1 Aluminum Profile

1.11-1.41

Strut Profile

Angle Profile

Conduit Profile


P. 1-06


P. 1-23


P. 1-24

Technical Data

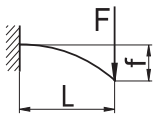
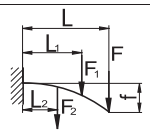
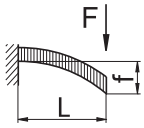
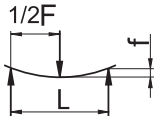
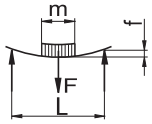
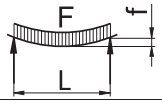
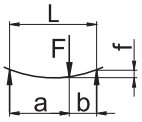
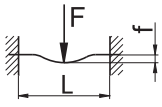
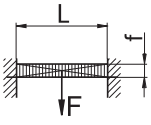
Extruded aluminum profile as per GB5237-2008, surface satin anodized.
Standard length of delivery profile is 5800mm.

Tensile Strength: min.185N/mm^2
Yield Strength: min.145N/mm^2
Elongation: 8%(T≤3.2mm) or 10%(T>3.2~25.0mm)
E-Module : approx.70,000N/mm^2
Brinell Hardness : HB 75 2.5/187.5
Coat Thickness: ≥11μ

Bending Strength

For deflection calculation, refer to formulas as below:

f (mm): Deflection
F (N): Type of load
L (mm): Profile length
I (cm^4): Moment of inertia
E (N/mm^2): Modular of elasticity

1		$f=\frac{F\cdot L^3}{3E\cdot I\cdot 10^4}$
2		$f=\frac{F\cdot L^3+F_1\cdot L_1^{\,2}\cdot L+F_2\cdot L_2^{\,2}\cdot L}{3E\cdot I\cdot 10^4}$
3		$f=\frac{F\cdot L^3}{8E\cdot I\cdot 10^4}$
4		$f=\frac{F\cdot L^3}{48E\cdot I\cdot 10^4}$
5		$f=\frac{F\cdot L^3}{\left(48+\frac{29m}{L}\right)\cdot E\cdot I\cdot 10^4}$
6		$f=\frac{5F\cdot L^3}{384E\cdot I\cdot 10^4}$
7		$f=\frac{F\cdot a^2\cdot b^2}{3E\cdot I\cdot 10^4\cdot L}$
8		$f=\frac{F\cdot L^3}{192E\cdot I\cdot 10^4}$
9		$f=\frac{F\cdot L^3}{384E\cdot I\cdot 10^4}$

Approximate determination of deflection

Determinations of deflection:

1. Type of load F in N
2. Profile length L in mm
3. Move cross point on the diagonal
4. Moment of inertia of selected profile I in cm^4
5. Cross point with the diagonal to be vertically extended to the bottom
6. Deflection f for the specific "Type of load" in mm

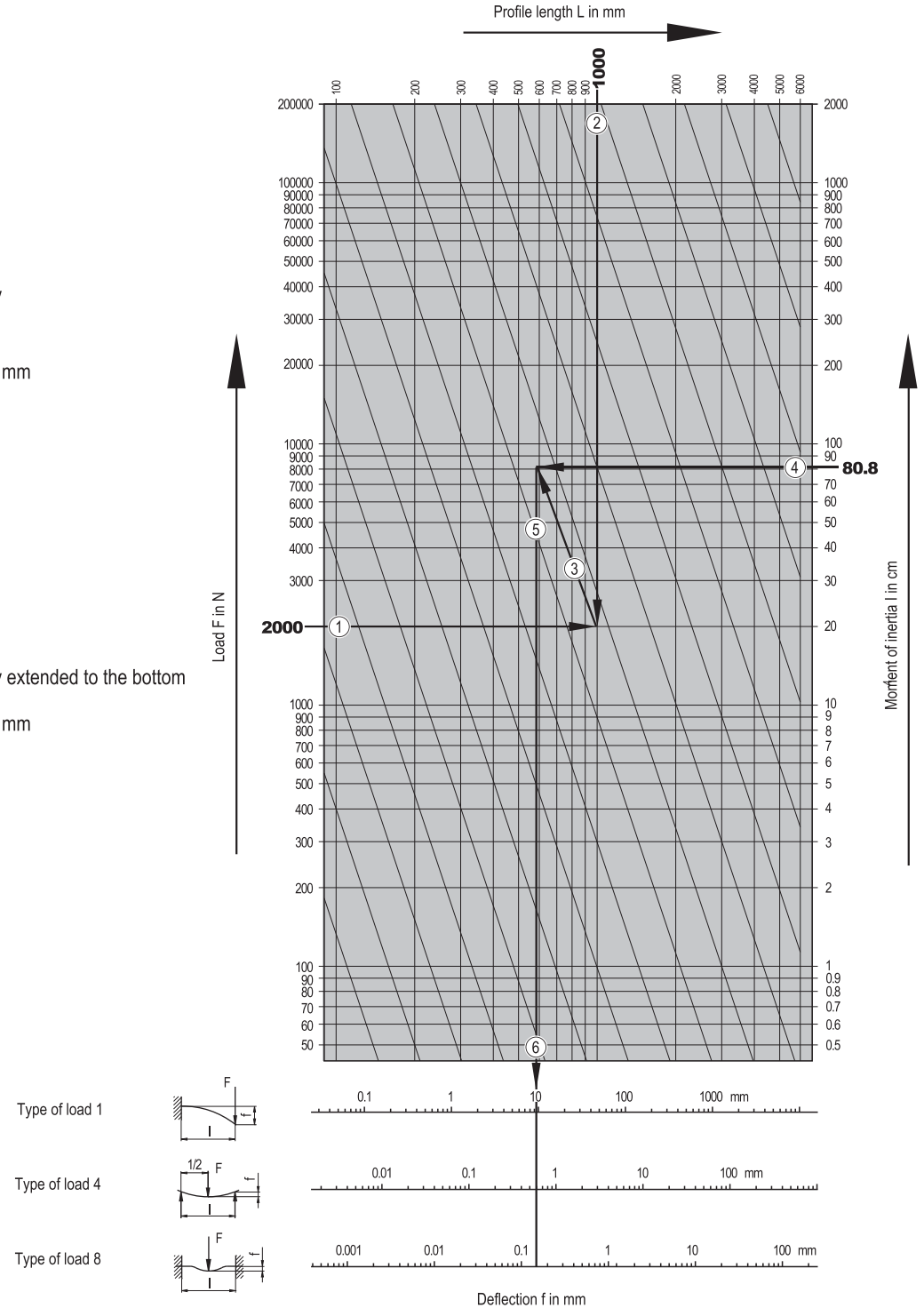
Example:

1. F=2,000N
2. L=1,000mm
3. Move cross point on the diagonal
4. I=80.8cm^4 for profile 40x80, 6H (1.11.40.040080.06H)
5. Cross point with the diagonal to be vertically extended to the bottom
6. Deflection f for the specific "Type of load" in mm

Type of load 1: f=9.5mm

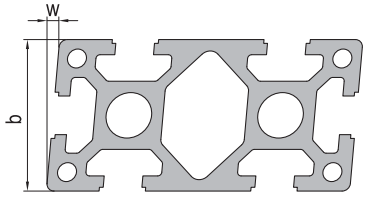
Type of load 4: f=0.6mm

Type of load 8: f=0.15mm



Profile Tolerance

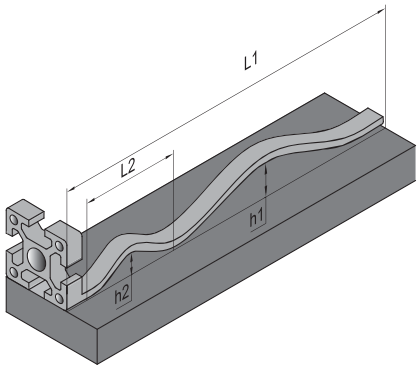
Flatness tolerance



The flatness tolerance w (angular tolerance) refers to unequal sides to the shorter side of the angle, i.e. it is measured from the longer side.

b(mm)	w(mm)
≤40	0.3
>40~80	0.5
>80~180	1.0

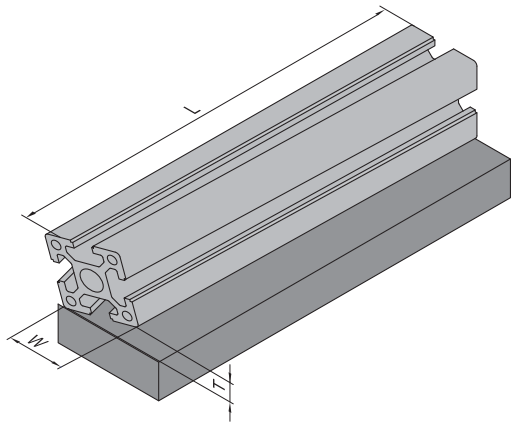
Straightness tolerance



Putting the profile on a horizontal surface, the max bending height h2 in any length of 30mm(L2) is not more than 0.3mm(L2=300mm, h2≤0.3mm). Refer to the following table for the bending height h1 of the full length profile (L1).

L1(m)	1	2	3	4	5	6
h1(mm)	0.7	1.4	2.1	2.8	3.5	4.2

Twist tolerance

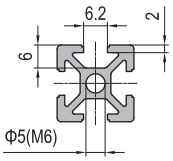
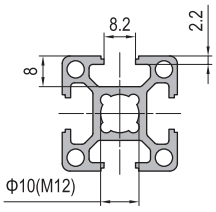
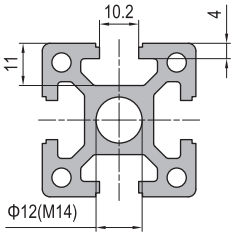
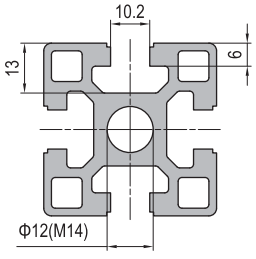


Putting the profile on a horizontal surface, if the end tilts due to twist, the twist height (T) could be calculated according to the formula below:

W(mm)	T(mm)	
	L≤1m	L>1m
≤40	0.052xW	0.123xW
>40~80	0.026xW	0.087xW
80~180	0.017xW	0.052xW

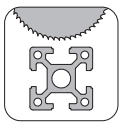
T Slot Symbol

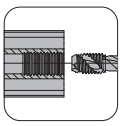
Parts compatible with T slot symbolized and incompatible with faded symbolized as below.

T Slot Symbol	Cross Section	Core Hole Φ	Slot Width	Slot Depth	Wall Thickness	Profile Group
6.2 2.0		5.0	6.2	6.0	2.0	PG15 PG20
8.2 2.2		10.0	8.2	8.0	2.2	PG30
10.2 4.0		12.0	10.2	11.0	4.0	PG40
10.2 6.0		12.0	10.2	13.0	6.0	PG45 PG50 PG60

Machining Symbol


Drilling


Angle cutting


Thread tapping

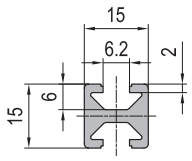
Strut Profile PG15


15x15 2 slots

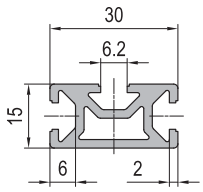

15x30 3 slots

Strut profile PG15 featuring 6mm T-slot is designed for constructing light weight assemblies.

15x15 2 slots



15x30 3 slots



Description	Moment of Inertia Ix(cm^4)	Moment of Inertia Iy(cm^4)	Moment of Resistance Wx(cm^3)	Moment of Resistance Wy(cm^3)	Mass (kg/m)	Part No.
Strut Profile PG15 15x15 2 slots	0.2	0.4	0.3	0.5	0.4	1.11.15.015015.02
Strut Profile PG15 15x30 3 slots	0.7	1.8	0.8	1.2	0.6	1.11.15.015030.03

Connector selection

 Angle Profile Bracket ..... P. 3-12

 Inner Bracket ..... P. 3-31

 Linear Bar Connector ..... P. 3-32

Strut Profile PG20

20x20 R90 2 slots


20x20 4 slots


20x40 6 slots

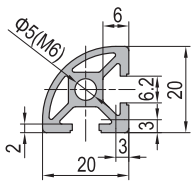

20x60 8 slots


20x80 10 slots

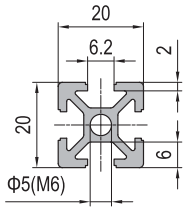

40x40 8 slots

Strut profile PG20 featuring 6mm T-slot is designed for constructing light weight assemblies.

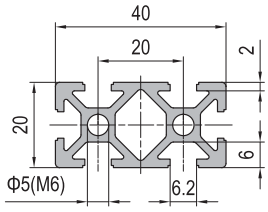
20x20 R90 2 slots



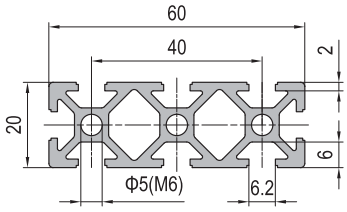
20x20 4 slots



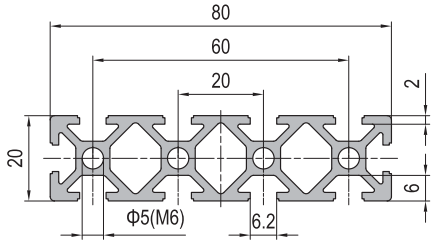
20x40 6 slots



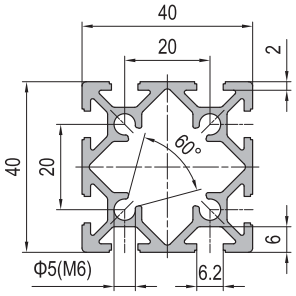
20x60 8 slots



20x80 10 slots



40x40 8 slots



Connector selection


Die Cast Bracket ..... P. 3-07


Angle Profile Bracket ..... P. 3-12


Inner Bracket ..... P. 3-31


Linear Bar Connector ..... P. 3-32

Description	Moment of Inertia Ix(cm^4)	Moment of Inertia Iy(cm^4)	Moment of Resistance Wx(cm^3)	Moment of Resistance Wy(cm^3)	Mass (kg/m)	Part No.
Strut Profile PG20 20x20 R90 2 slots	0.6	0.6	0.5	0.5	0.45	1.11.20.020020.R90.02 New!
Strut Profile PG20 20x20 4 slots	0.8	0.8	0.8	0.8	0.5	1.11.20.020020.04
Strut Profile PG20 20x40 6 slots	1.4	5.1	1.4	2.5	0.9	1.11.20.020040.06
Strut Profile PG20 20x60 8 slots	2.0	15.8	2.0	5.3	1.3	1.11.20.020060.08
Strut Profile PG20 20x80 10 slots	2.6	35.9	2.6	9.0	1.7	1.11.20.020080.10
Strut Profile PG20 40x40 8 slots	8.9	8.9	4.5	4.5	1.3	1.11.20.040040.08

Strut Profile PG30

15x90 7 slots


30x30 R90 2 slots


30x30 2 slots Type A


30x30 2 slots Type B


30x30 3 slots


30x30 4 slots Light


30x30 4 slots


30x60 6 slots


30x90 8 slots


30x120 10 slots


60x60 8 slots


60x60 L 8 slots


60x120 12 slots

Strut profile PG30 featuring 8mm T-slot is designed for constructing medium weight assemblies such as machine structure frame, trolley, work station, partition and display frames etc.

Connector selection


Anchor Connector ..... P. 3-03


Die Cast Bracket ..... P. 3-08


Angle Profile Bracket ..... P. 3-15

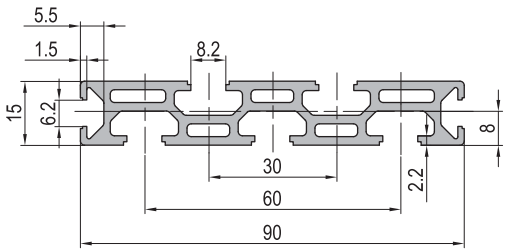

Inner Bracket ..... P. 3-31


Linear Bar Connector ..... P. 3-32

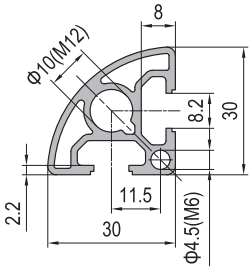

Screw Connector ..... P. 3-42

Strut Profile PG30

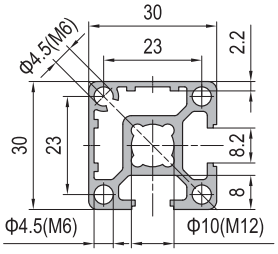
15x90 7 slots



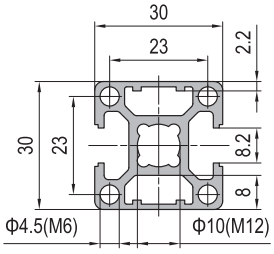
30x30 R90 2 slots



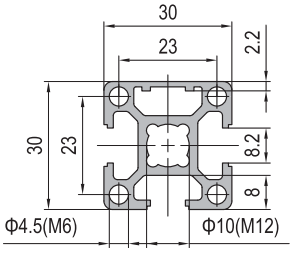
30x30 2 slots Type A



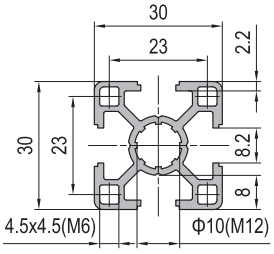
30x30 2 slots Type B



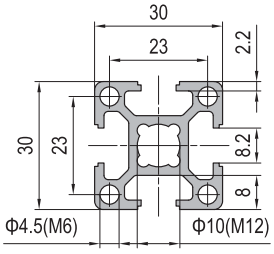
30x30 3 slots



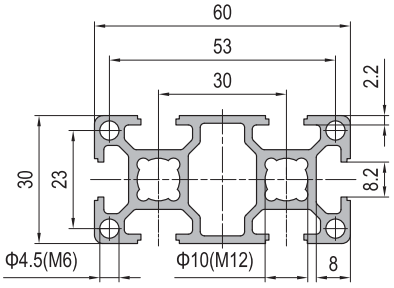
30x30 4 slots Light



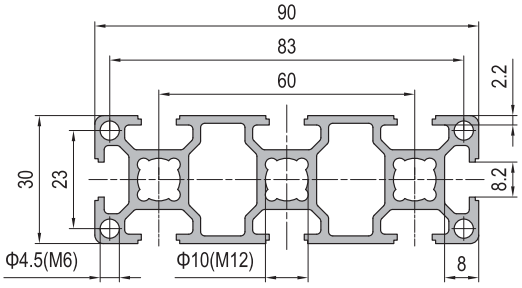
30x30 4 slots



30x60 6 slots



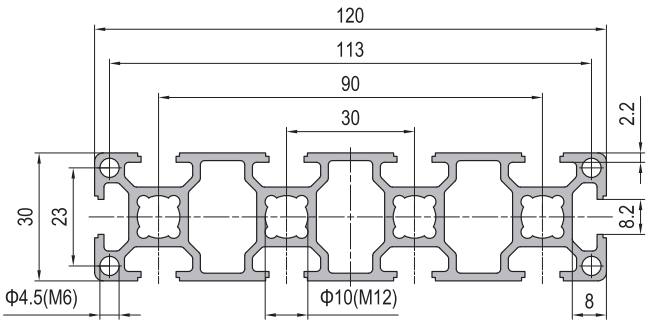
30x90 8 slots



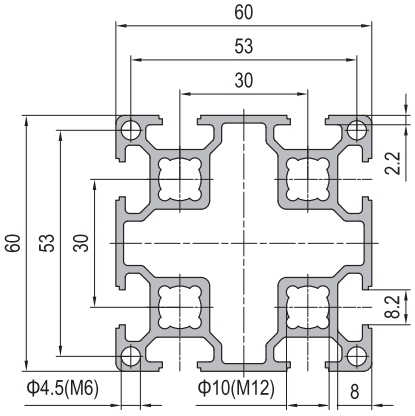
Description	Moment of Inertia Ix(cm^4)	Moment of Inertia Iy(cm^4)	Moment of Resistance Wx(cm^3)	Moment of Resistance Wy(cm^3)	Mass (kg/m)	Part No.
Strut Profile PG30 15x90 7 slots	1.4	40.4	1.9	9.0	1.5	1.11.30.015090.07 New!
Strut Profile PG30 30x30 R90 2 slots	2.5	1.6	1.2	0.9	0.8	1.11.30.030030.R90.02
Strut Profile PG30 30x30 2 slots Type A	2.9	2.9	2.0	2.0	0.9	1.11.30.030030.02A
Strut Profile PG30 30x30 2 slots Type B	2.8	3.2	1.9	2.1	0.9	1.11.30.030030.02B
Strut Profile PG30 30x30 3 slots	3.0	2.9	2.0	1.9	0.9	1.11.30.030030.03
Strut Profile PG30 30x30 4 slots Light	2.6	2.6	1.8	1.8	0.8	1.11.30.030030.04L
Strut Profile PG30 30x30 4 slots	2.9	2.9	2.0	2.0	0.9	1.11.30.030030.04
Strut Profile PG30 30x60 6 slots	5.3	19.9	3.5	6.7	1.6	1.11.30.030060.06
Strut Profile PG30 30x90 8 slots	7.7	62.0	5.1	13.8	2.2	1.11.30.030090.08

Strut Profile PG30

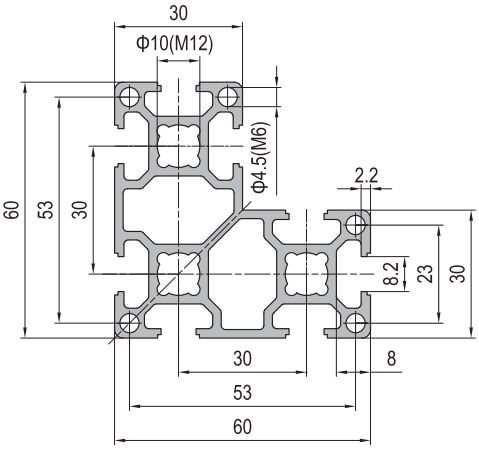
30x120 10 slots



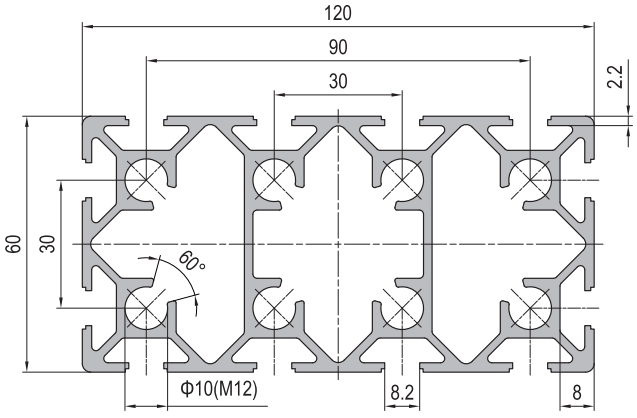
60x60 8 slots



60x60 L 8 slots



60x120 12 slots



Description	Moment of Inertia Ix(cm^4)	Moment of Inertia Iy(cm^4)	Moment of Resistance Wx(cm^3)	Moment of Resistance Wy(cm^3)	Mass (kg/m)	Part No.
Strut Profile PG30 30x120 10 slots	10.1	139.9	6.7	23.3	2.9	1.11.30.030120.10
Strut Profile PG30 60x60 8 slots	35.3	35.3	11.8	11.8	2.5	1.11.30.060060.08
Strut Profile PG30 60x60 L 8 slots	35.2	17.6	8.5	5.0	2.3	1.11.30.060060L.08
Strut Profile PG30 60x120 12 slots	74.7	252.6	24.9	42.1	4.8	1.11.30.060120.12

Strut Profile PG40


40x40 R90 2 slots


40x40 1 slots

Strut profile PG40 featuring 10mm T-slot is designed for constructing medium or heavy weight assemblies, such as machine structure frame, trolley, work station, partition and display frames etc.
(Profile PG40 is frequently used).


40x40 2 slots Type A


40x40 2 slots Type B


40x40 3 slots


40x40 4 slots Super Light


40x40 4 slots Light


40x40 4 slots


40x40 4 slots Heavy


40x60 4 slots


40x80 6 slots Super Light

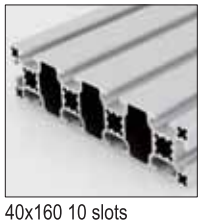

40x80 6 slots Light


40x80 6 slots


40x80 6 slots Heavy


40x120 8 slots


40x120 8 slots Heavy

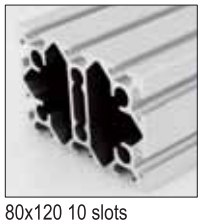

40x160 10 slots

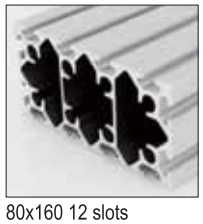

40x160 10 slots Heavy

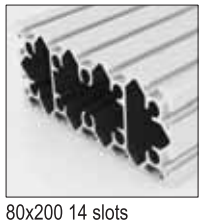

80x80 8 slots


80x80 8 slots Heavy


80x80 L 8 slots


80x120 10 slots


80x160 12 slots


80x200 14 slots


120x120 12 slots

Connector selection


Anchor Connector ····· P. 3-03


Die Cast Bracket ····· P. 3-09


Angle Profile Bracket ····· P. 3-15

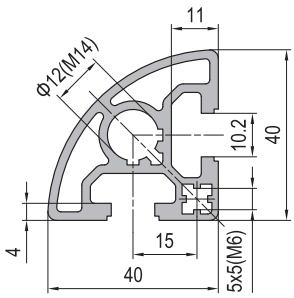

Inner Bracket ····· P. 3-31


Linear Bar Connector····· P. 3-32

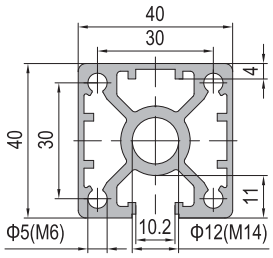

Screw Connector····· P. 3-42

Strut Profile PG40

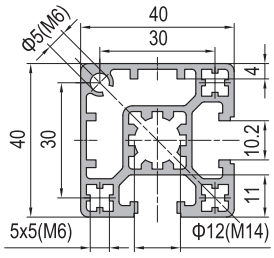
40x40 R90 2 slots



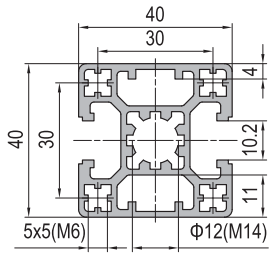
40x40 1 slot



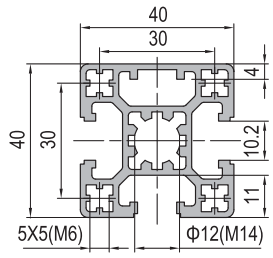
40x40 2 slots Type A



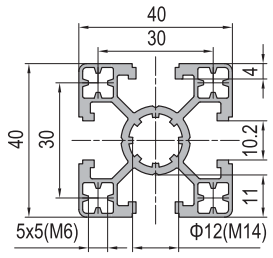
40x40 2 slots Type B



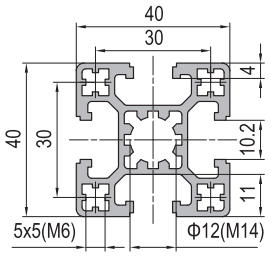
40x40 3 slots



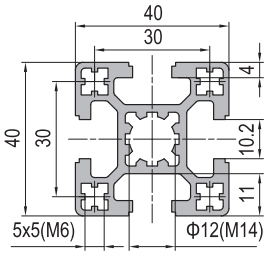
40x40 4 slots Super Light



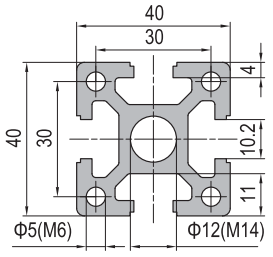
40x40 4 slots Light



40x40 4 slots



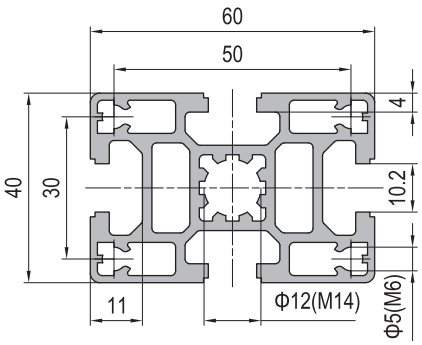
40x40 4 slots Heavy



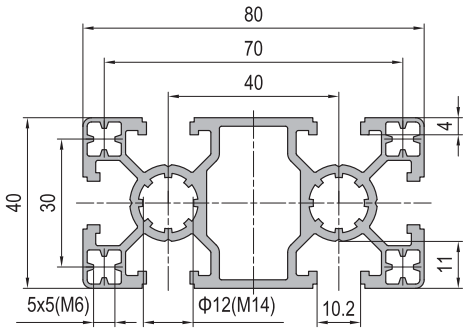
Description	Moment of Inertia Ix(cm^4)	Moment of Inertia Iy(cm^4)	Moment of Resistance Wx(cm^3)	Moment of Resistance Wy(cm^3)	Mass (kg/m)	Part No.
Strut Profile PG40 40x40 R90 2 slots	8.3	4.8	3.0	1.9	1.3	1.11.40.040040.R90.02
Strut Profile PG40 40x40 1 slot	10.4	10.1	5.2	5.0	1.68	1.11.40.040040.01
Strut Profile PG40 40x40 2 slots Type A	9.6	9.6	4.5	4.5	1.5	1.11.40.040040.02A
Strut Profile PG40 40x40 2 slots Type B	9.6	8.6	4.8	4.3	1.5	1.11.40.040040.02B
Strut Profile PG40 40x40 3 slots	9.1	8.6	4.5	4.3	1.5	1.11.40.040040.03
Strut Profile PG40 40x40 4 slots Super Light	7.3	7.3	3.6	3.6	1.3	1.11.40.040040.04SL
Strut Profile PG40 40x40 4 slots Light	8.6	8.6	4.3	4.3	1.5	1.11.40.040040.04L
Strut Profile PG40 40x40 4 slots	9.1	9.1	4.6	4.6	1.6	1.11.40.040040.04
Strut Profile PG40 40x40 4 slots Heavy	11.5	11.5	5.8	5.8	2.0	1.11.40.040040.04H

Strut Profile PG40

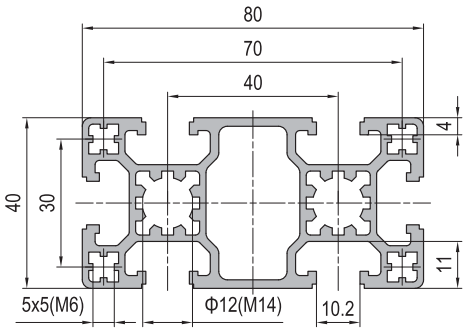
40x60 4 slots



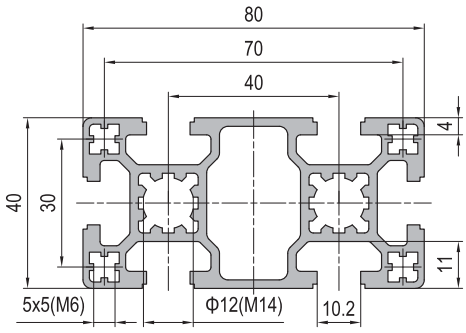
40x80 6 slots Super Light



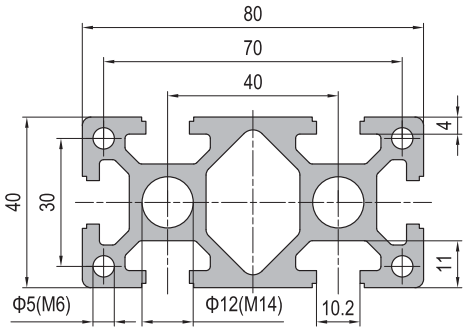
40x80 6 slots Light



40x80 6 slots



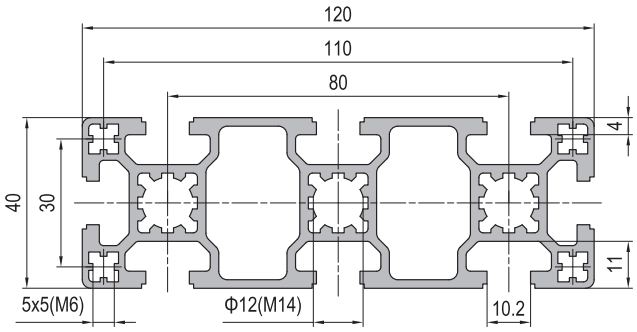
40x80 6 slots Heavy



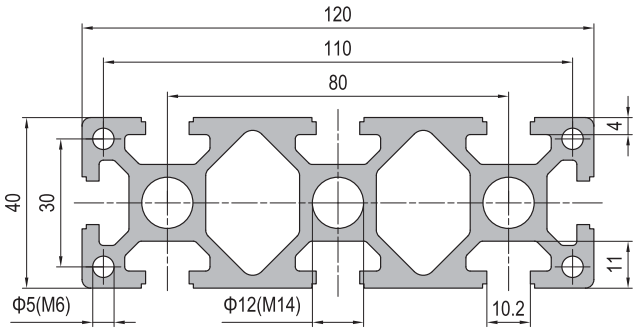
Description	Moment of Inertia Ix(cm^4)	Moment of Inertia Iy(cm^4)	Moment of Resistance Wx(cm^3)	Moment of Resistance Wy(cm^3)	Mass (kg/m)	Part No.
Strut Profile PG40 40x60 4 slots	13.3	27.6	6.6	9.2	2.3	1.11.40.040060.04
Strut Profile PG40 40x80 6 slots Super Light	14.3	52.0	7.2	13.0	2.3	1.11.40.040080.06SL
Strut Profile PG40 40x80 6 slots Light	15.8	59.1	7.9	14.8	2.5	1.11.40.040080.06L
Strut Profile PG40 40x80 6 slots	16.6	63.2	8.3	15.8	2.7	1.11.40.040080.06
Strut Profile PG40 40x80 6 slots Heavy	22.2	80.8	11.1	20.2	3.6	1.11.40.040080.06H

Strut Profile PG40

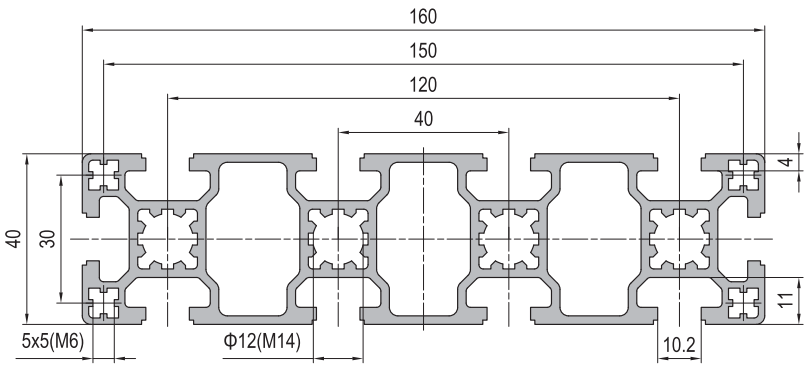
40x120 8 slots



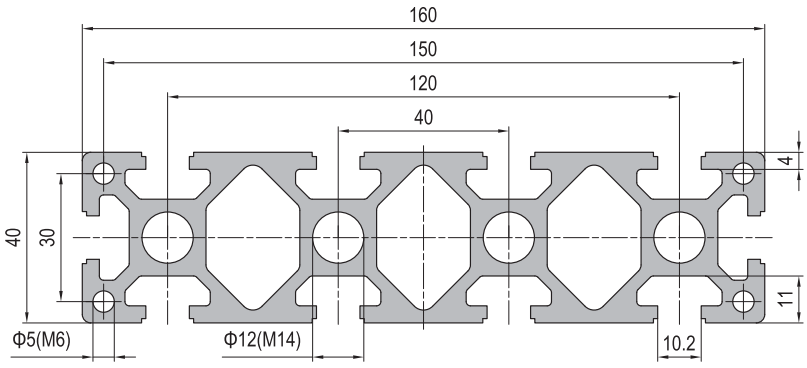
40x120 8 slots Heavy



40x160 10 slots



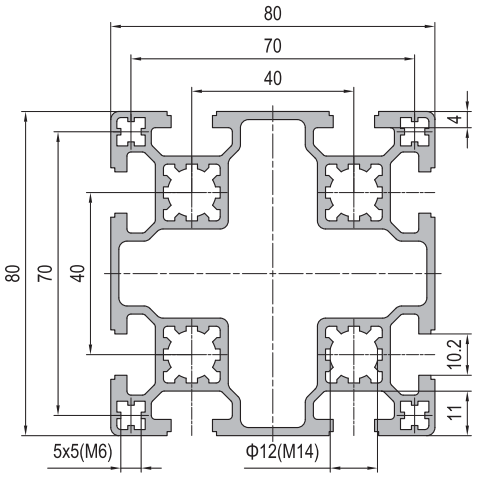
40x160 10 slots Heavy



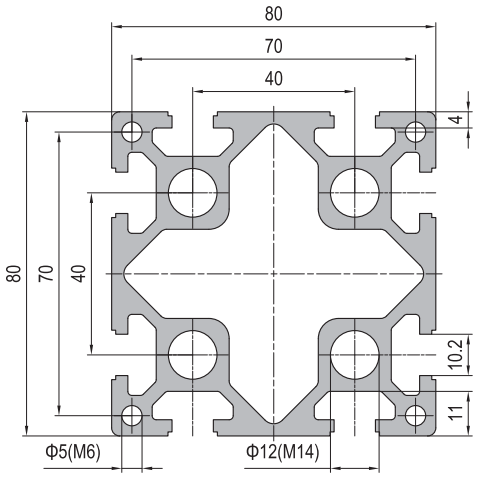
Description	Moment of Inertia Ix(cm^4)	Moment of Inertia Iy(cm^4)	Moment of Resistance Wx(cm^3)	Moment of Resistance Wy(cm^3)	Mass (kg/m)	Part No.
Strut Profile PG40 40x120 8 slots	24.1	194.8	12.1	32.5	3.8	1.11.40.040120.08
Strut Profile PG40 40x120 8 slots Heavy	33.0	255.3	16.5	42.6	5.2	1.11.40.040120.08H
Strut Profile PG40 40x160 10 slots	31.6	435.7	15.8	54.5	4.8	1.11.40.040160.10
Strut Profile PG40 40x160 10 slots Heavy	43.7	582.2	21.8	72.8	6.8	1.11.40.040160.10H

Strut Profile PG40

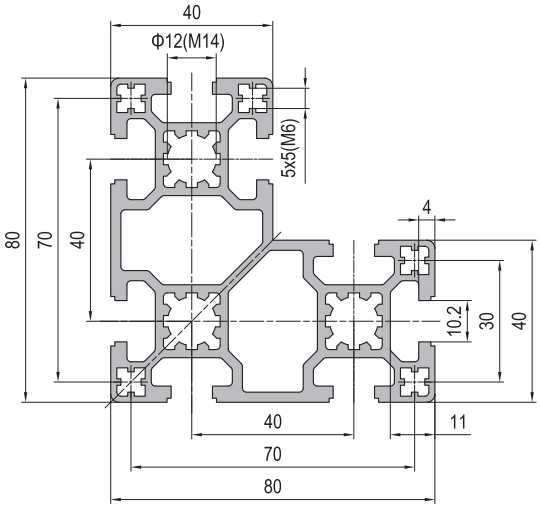
80x80 8 slots



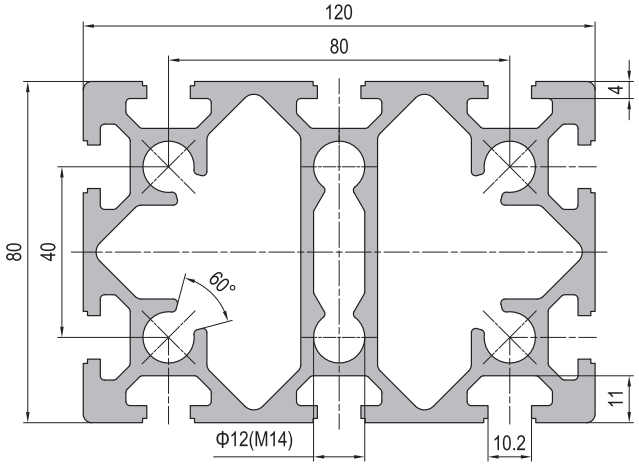
80x80 8 slots Heavy



80x80 L 8 slots



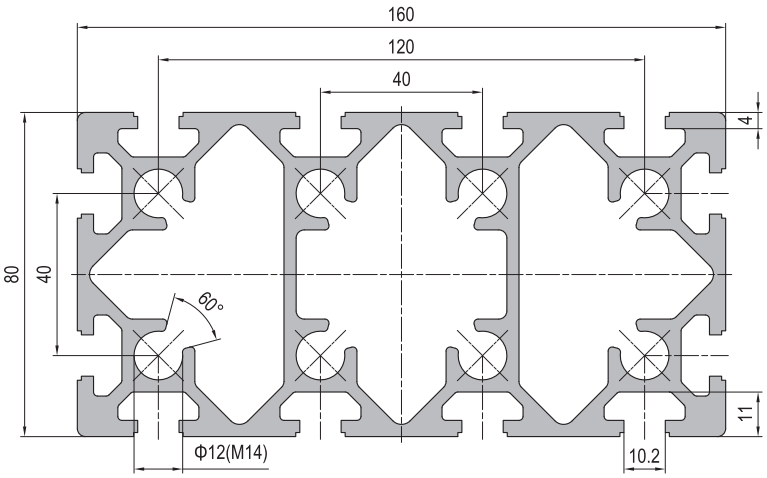
80x120 10 slots



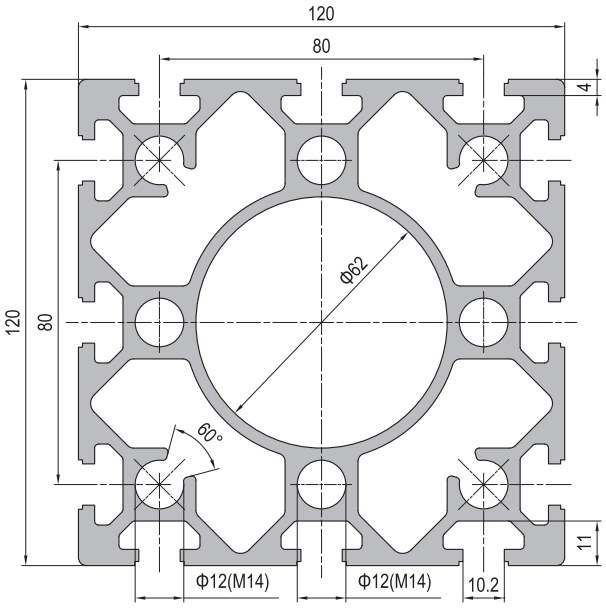
Description	Moment of Inertia Ix(cm^4)	Moment of Inertia Iy(cm^4)	Moment of Resistance Wx(cm^3)	Moment of Resistance Wy(cm_3)	Mass (kg/m)	Part No.
Strut Profile PG40 80x80 8 slots	109.9	109.9	27.5	27.5	4.2	1.11.40.080080.08
Strut Profile PG40 80x80 8 slots Heavy	148.2	148.2	37.1	37.1	5.7	1.11.40.080080.08H
Strut Profile PG40 80x80 L 8 slots	111.8	56.0	20.1	11.9	4.0	1.11.40.080080L.08
Strut Profile PG40 80x120 10 slots	222.1	449.2	55.5	74.8	8.3	1.11.40.080120.10

Strut Profile PG40

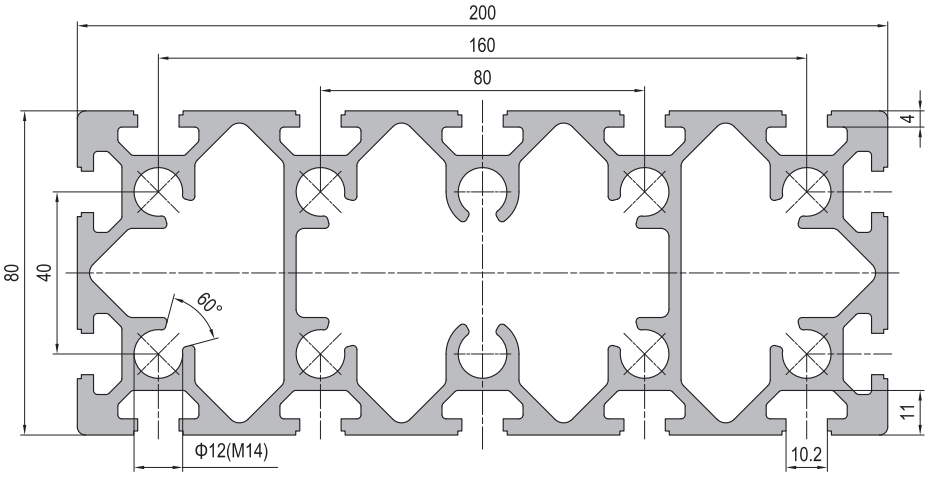
80x160 12 slots



120x120 12 slots



80x200 14 slots



Description	Moment of Inertia Ix(cm^4)	Moment of Inertia Iy(cm^4)	Moment of Resistance Wx(cm^3)	Moment of Resistance Wy(cm^3)	Mass (kg/m)	Part No.
Strut Profile PG40 80x160 12 slots	287.5	975.5	71.9	121.9	10.4	1.11.40.080160.12
Strut Profile PG40 80x200 14 slots	353.1	1789.8	88.3	179.0	12.3	1.11.40.080200.14
Strut Profile PG40 120x120 12 slots	659.1	659.1	109.9	109.9	11.5	1.11.40.120120.12

Strut Profile PG45


45x45 R90 2 slots


45x45 2 slots Type A


45x45 2 slots Type B


45x45 3 slots


45x45 4 slots Light


45x45 4 slots


45x45 4 slots Heavy


45x60 4 slots


45x90 6 slots


45x90 6 slots Heavy

45x180 10 slots


90x90 8 slots


90x90 8 slots Heavy


90x90 L 8 slots


90x180 12 slots

Strut Profile PG45 featuring 10mm T-slot is designed for constructing heavy weight assemblies such as machine structure frame and workshop partition etc.

Connector selection


Anchor Connector ..... P. 3-03


Die Cast Bracket ..... P. 3-10


Angle Profile Bracket ..... P. 3-15

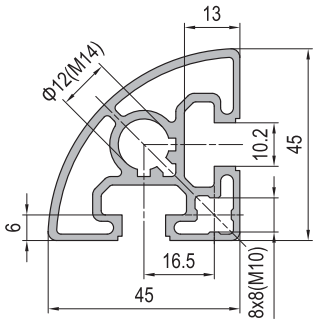

Inner Bracket ..... P. 3-31


Linear Bar Connector ..... P. 3-32

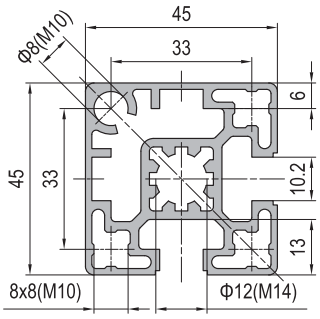

Screw Connector ..... P. 3-42

Strut Profile PG45

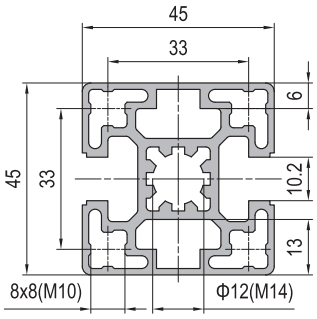
45x45 R90 2 slots



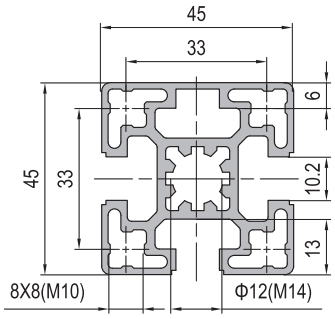
45x45 2 slots Type A



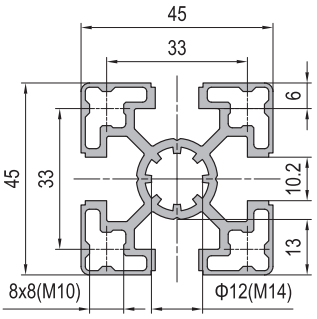
45x45 2 slots Type B



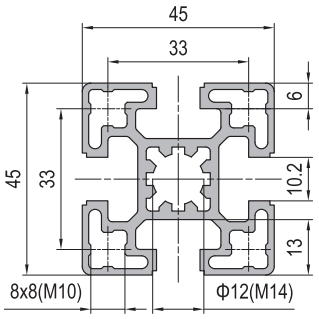
45x45 3 slots



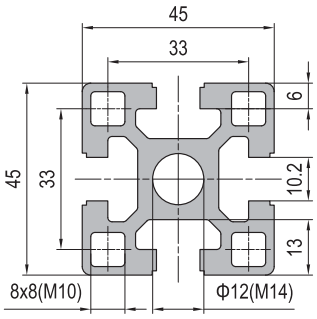
45x45 4 slots Light



45x45 4 slots



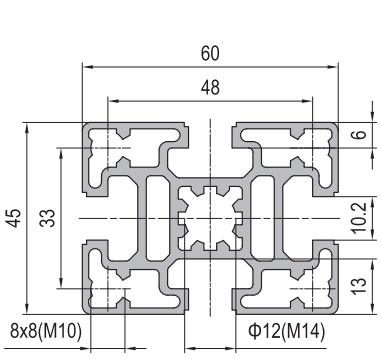
45x45 4 slots Heavy



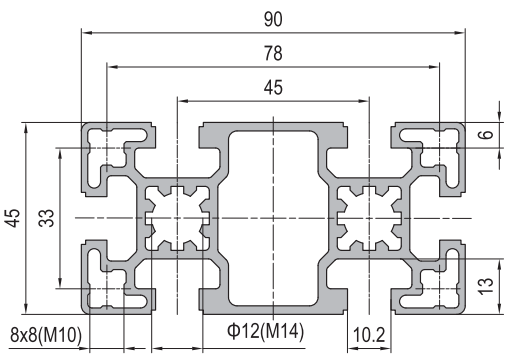
Description	Moment of Inertia Ix(cm^4)	Moment of Inertia Iy(cm^4)	Moment of Resistance Wx(cm^3)	Moment of Resistance Wy(cm^3)	Mass (kg/m)	Part No.
Strut Profile PG45 45x45 R90 2 slots	10.5	6.4	3.5	2.4	1.5	1.11.45.045045.R90.02
Strut Profile PG45 45x45 2 slots Type A	12.9	12.9	5.7	5.7	1.9	1.11.45.045045.02A
Strut Profile PG45 45x45 2 slots Type B	13.7	12.1	6.1	5.4	1.9	1.11.45.045045.02B
Strut Profile PG45 45x45 3 slots	12.9	12.1	5.7	5.4	1.8	1.11.45.045045.03
Strut Profile PG45 45x45 4 slots Light	10.5	10.5	4.7	4.7	1.6	1.11.45.045045.04L
Strut Profile PG45 45x45 4 slots	12.1	12.1	5.4	5.4	1.8	1.11.45.045045.04
Strut Profile PG45 45x45 4 slots Heavy	16.5	16.5	7.4	7.4	2.4	1.11.45.045045.04H

Strut Profile PG45

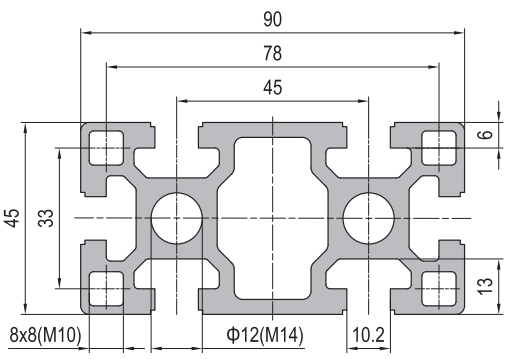
45x60 4 slots



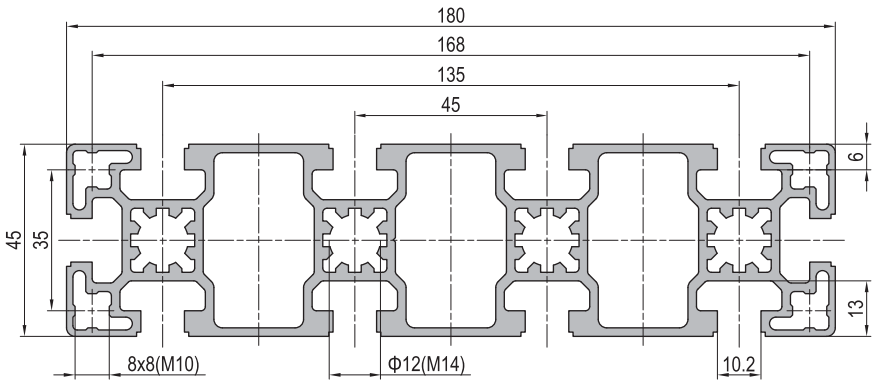
45x90 6 slots



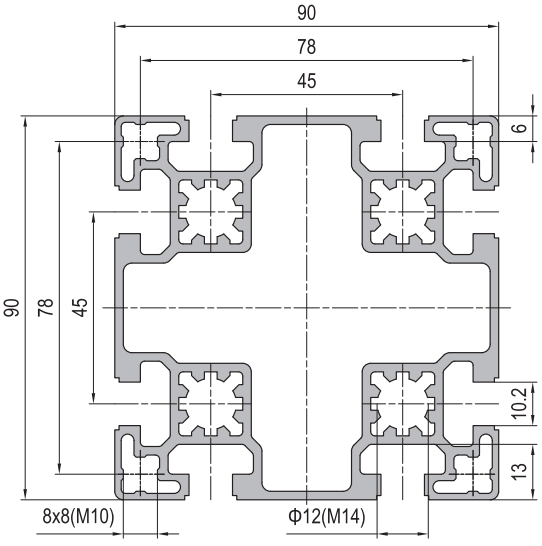
45x90 6 slots Heavy



45x180 10 slots



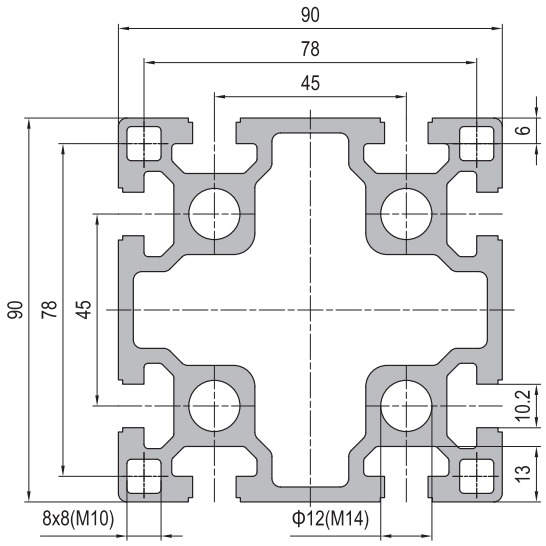
90x90 8 slots



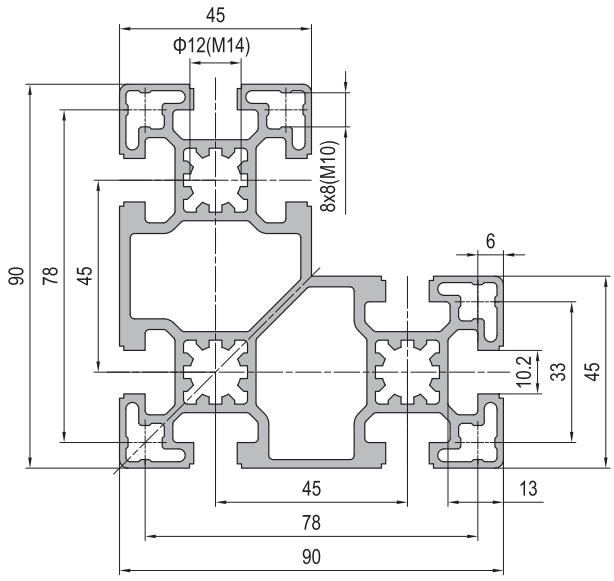
Description	Moment of Inertia Ix(cm^4)	Moment of Inertia Iy(cm^4)	Moment of Resistance Wx(cm^3)	Moment of Resistance Wy(cm^3)	Mass (kg/m)	Part No.
Strut Profile PG45 45x60 4 slots	16.2	27.8	7.2	9.3	2.4	1.11.45.045060.04
Strut Profile PG45 45x90 6 slots	24.2	89.3	10.8	19.9	3.2	1.11.45.045090.06
Strut Profile PG45 45x90 6 slots Heavy	32.5	122.2	14.5	27.2	4.4	1.11.45.045090.06H
Strut Profile PG45 45x180 10 slots	48.4	640.6	21.5	71.2	5.8	1.11.45.045180.10 New!
Strut Profile PG45 90x90 8 slots	163.2	163.2	36.3	36.3	5.0	1.11.45.090090.08

Strut Profile PG45

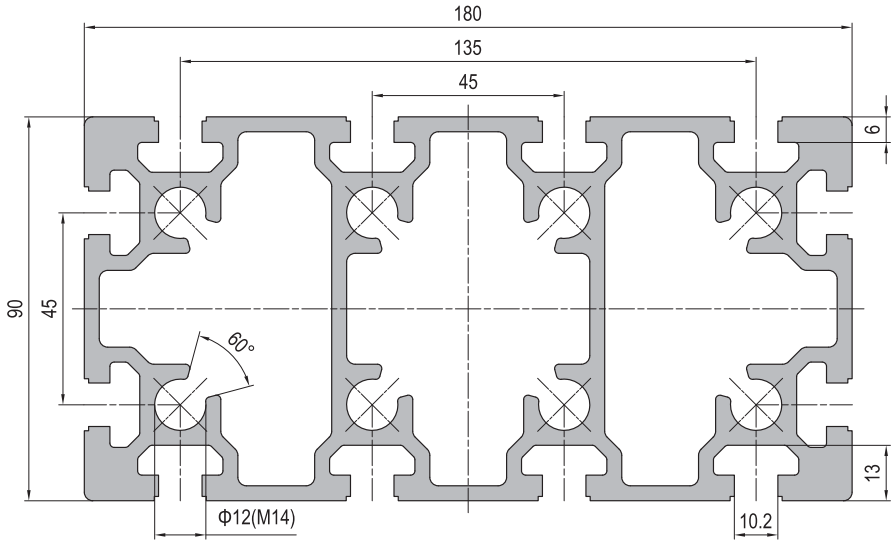
90x90 8 slots Heavy



90x90 L 8 slots



90x180 12 slots



Description	Moment of Inertia Ix(cm^4)	Moment of Inertia Iy(cm^4)	Moment of Resistance Wx(cm^3)	Moment of Resistance Wy(cm^3)	Mass (kg/m)	Part No.
Strut Profile PG45 90x90 8 slots Heavy	222.9	222.9	49.6	49.6	6.8	1.11.45.090090.08H
Strut Profile PG45 90x90 L 8 slots	161.4	80.3	25.6	15.2	4.6	1.11.45.090090L.08
Strut Profile PG45 90x180 12 slots	454.9	1585.7	101.1	176.2	12.7	1.11.45.090180.12

Strut Profile PG50

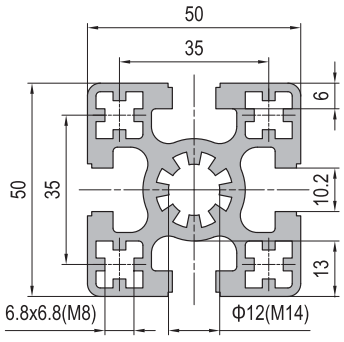

50x50 4 slots


50x100 6 slots

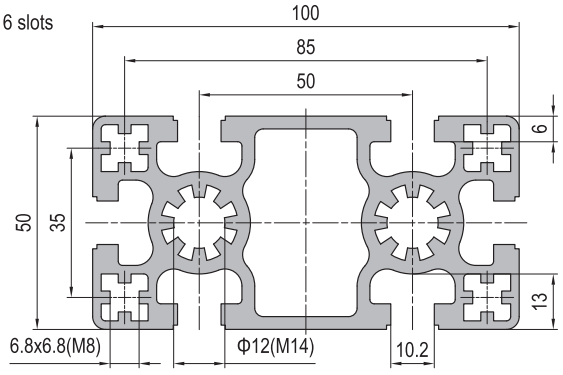

100x100 8 slots

Strut profile PG50 featuring 10mm T-slot is designed for constructing heavy weight assemblies.

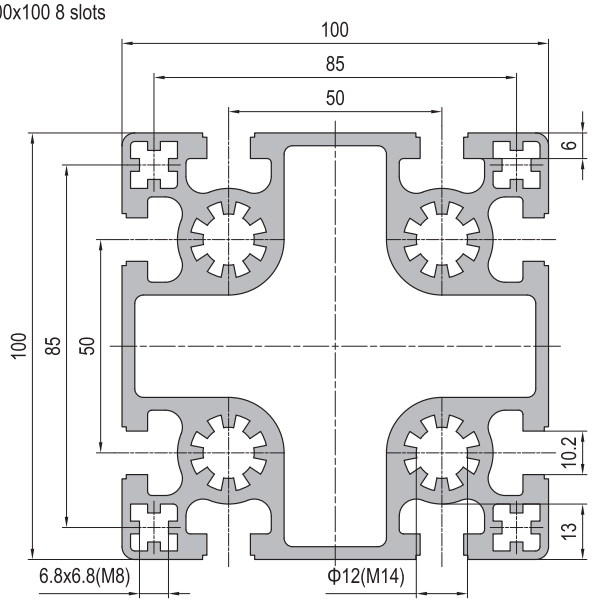
50x50 4 slots



50x100 6 slots



100x100 8 slots



Connector selection


Die Cast Bracket ..... P. 3-11


Angle Profile Bracket ..... P. 3-15


Screw Connector ..... P. 3-42

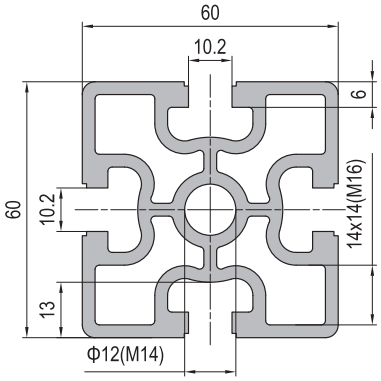
Description	Moment of Inertia Ix(cm^4)	Moment of Inertia Iy(cm^4)	Moment of Resistance Wx(cm^3)	Moment of Resistance Wy(cm^3)	Mass (kg/m)	Part No.
Strut Profile PG50 50x50 4 slots	25.0	25.0	10.0	10.0	3.0	1.11.50.050050.04
Strut Profile PG50 50x100 6 slots	46.2	184.4	18.5	36.9	5.0	1.11.50.050100.06
Strut Profile PG50 100x100 8 slots	331.1	331.1	66.2	66.2	8.5	1.11.50.100100.08

Strut Profile PG60

60x60 4 slots

Strut profile PG60 featuring 10mm T-slot is designed for constructing heavy weight assemblies.

60x60 4 slots



Connector selection

Angle Profile Bracket ..... P. 3-15

Screw Connector ..... P. 3-42

Description	Moment of Inertia Ix(cm^4)	Moment of Inertia Iy(cm^4)	Moment of Resistance Wx(cm^3)	Moment of Resistance Wy(cm^3)	Mass (kg/m)	Part No.
Strut Profile PG60 60x60 4 slots	47.7	47.7	15.9	15.9	3.8	1.11.60.060060.04

Angle Profile


Angle Profile 20x20x3


Angle Profile 30x30x4


Angle Profile 35x35x4

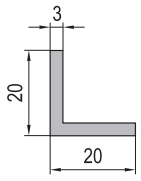
Angle Profile 40x40x5


Angle Profile 50x50x9

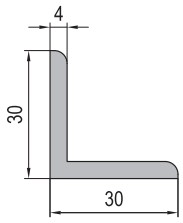

Angle Profile 100x100x15

Angle profile is mainly used for producing angle bracket which has a wide range of applications with its good flexibility.
The surface treatment of the finished product can be natural anodized, black anodized, electrophoretic paint etc.

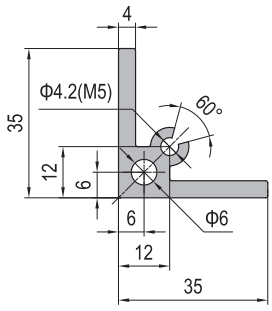
Angle Profile 20x20x3



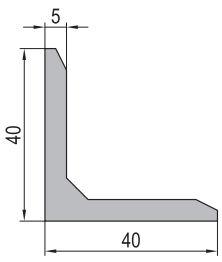
Angle Profile 30x30x4



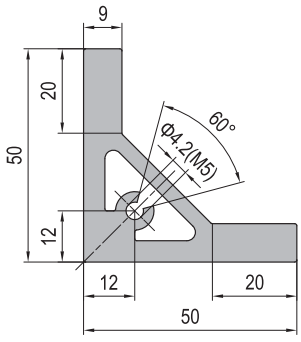
Angle Profile 35x35x4



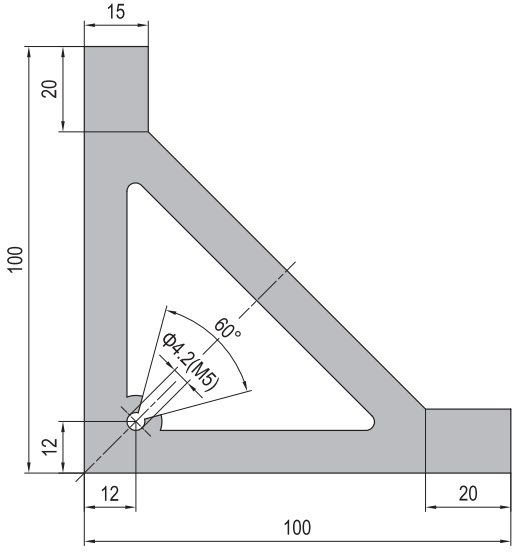
Angle Profile 40x40x5



Angle Profile 50x50x9



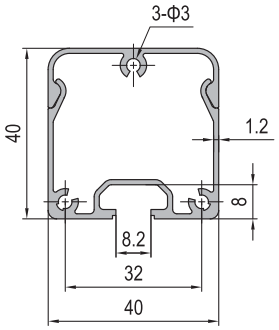
Angle Profile 100x100x15



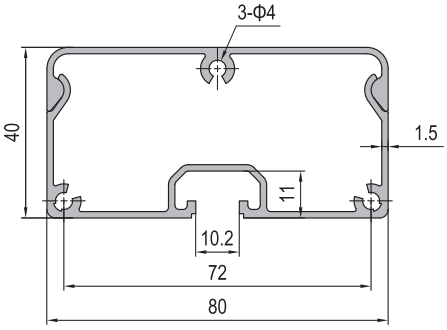
Description	Mass (kg/m)	Part No.
Angle Profile 20x20x3	0.3	1.31.2020.03
Angle Profile 30x30x4	0.6	1.31.3030.04
Angle Profile 35x35x4	0.9	1.31.3535.04
Angle Profile 40x40x5	1	1.31.4040.05 New!
Angle Profile 50x50x9	2.3	1.31.5050.09
Angle Profile 100x100x15	8.5	1.31.100100.15

Conduit Profile

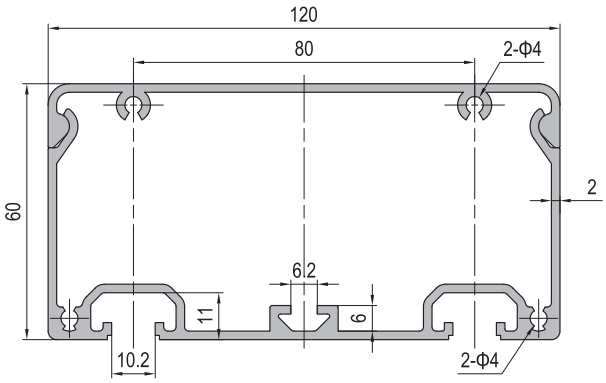
Conduit Profile-40x40



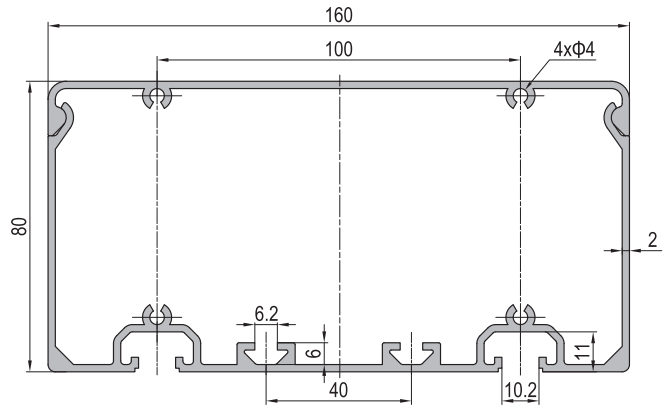
Conduit Profile-40x80



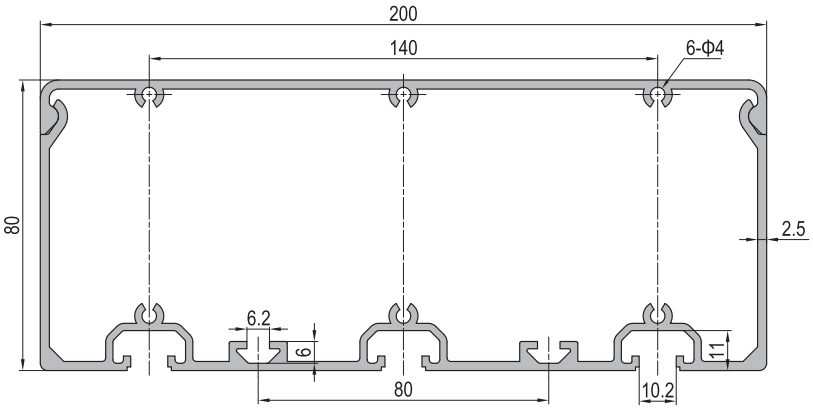
Conduit Profile-60x120

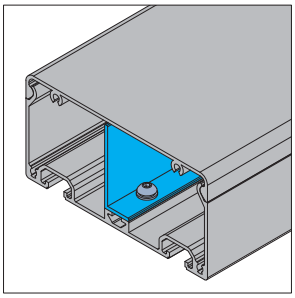


Conduit Profile-80x160

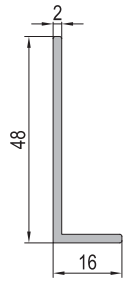


Conduit Profile-80x200





Partition profile-16x48



Description	Mass (kg/m)	Part No.
Conduit Profile 40x40	0.82	1.41.40.040040
Conduit Profile 40x80	1.41	1.41.40.040080
Conduit Profile 60x120	2.80	1.41.40.060120
Conduit Profile 80x160	3.64	1.41.40.080160
Conduit Profile 80x200	4.89	1.41.40.080200
Partition profile 16x48	0.35	1.31.1648.02

Note: the partition profile is used for partition and arrangement of cables inside of big conduit profiles to realize the reasonable design.