Aluminum Profiles

b-Modular System, with Open Slots on All Sides, Profile Type Light / Heavy

SPECIFICATION

Profile types

- Type **L**: Light
- Type **S**: Heavy

Aluminum
Anodized, natural color **N**

INFORMATION

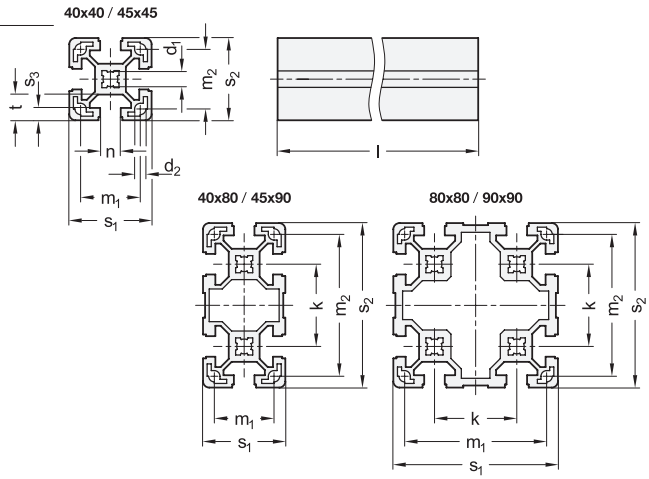
Aluminum profiles GN 10b are produced by extrusion molding. They can be used, for example, to easily construct protective enclosures, workplace equipment or jigs.
Aluminum profiles in combination with the removable and reusable accessories form a flexible modular system. Attachments can be fastened to either the slots or the end faces via the holes.
The profile type light is typically used for small loads or for weight-optimized constructions.
Aluminum profiles are supplied in bundles. The table shows the quantity included in each bundle.

ACCESSORY

- T-Nuts GN 50b (see page)
- T-Slot Nuts GN 51b (see page)
- T-Slot Bolts GN 52b (see page)
- Cover Caps GN 60b (see page)
- Cover and Edging Profiles GN 70b (see page)
- Cover Profiles GN 71b (see page)
- Transport and Base Plates GN 80b (see page)

TECHNICAL INFORMATION

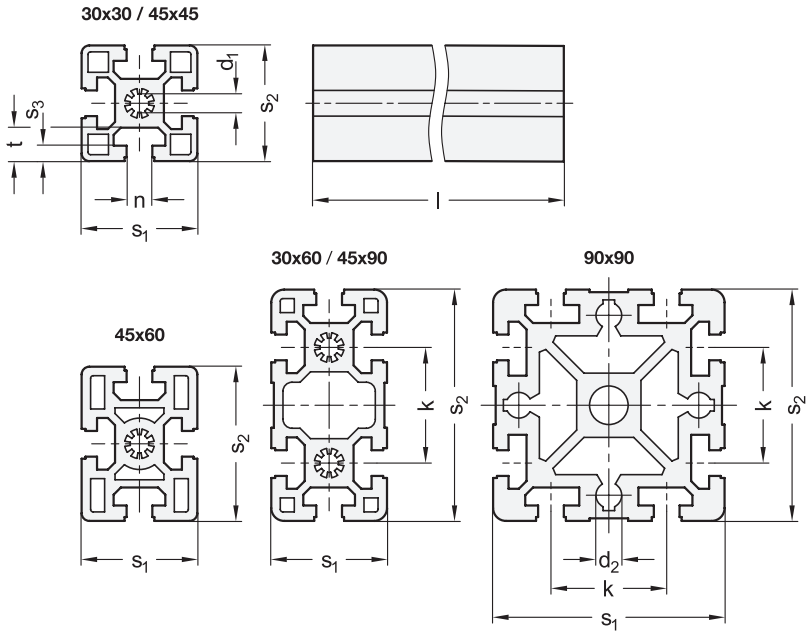
- Technical Data GN 10b (see page)



GN 10b-L

Description	s1	s2	n	Length l in m +1.5mm	Bundle Pieces	d1	d2*	k	m1	m2	s3	t	Grid size	⚖
GN 10b-404010L-N-2-4	40	40	10	2	4	10	5.5	-	29	29	6	12.5	40	12080
GN 10b-404010L-N-3-4	40	40	10	3	4	10	5.5	-	29	29	6	12.5	40	18120
GN 10b-408010L-N-2-2	40	80	10	2	2	10	5.5	40	29	69	6	12.5	40	10680
GN 10b-408010L-N-3-2	40	80	10	3	2	10	5.5	40	29	69	6	12.5	40	16020
GN 10b-454510L-N-2-4	45	45	10	2	4	10	-	-	-	-	6	14.5	45	12400
GN 10b-454510L-N-3-4	45	45	10	3	4	10	-	-	-	-	6	14.5	45	18600
GN 10b-459010L-N-2-2	45	90	10	2	2	10	-	45	-	-	6	14.5	45	12200
GN 10b-459010L-N-3-2	45	90	10	3	2	10	-	45	-	-	6	14.5	45	18300
GN 10b-808010L-N-2-1	80	80	10	2	1	10	5.5	40	69	69	6	12.5	40	9960
GN 10b-808010L-N-3-1	80	80	10	3	1	10	5.5	40	69	69	6	12.5	40	14940
GN 10b-909010L-N-2-1	90	90	10	2	1	10	-	45	-	-	6	13	45	12680
GN 10b-909010L-N-3-1	90	90	10	3	1	10	-	45	-	-	6	13	45	19020

* Bores only on grid size = 40



GN 10b-S

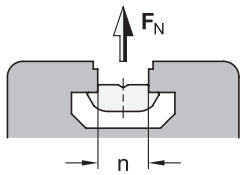
Description	s1	s2	n	Length l in m +1.5mm	Bundle Pieces	d1	d2	k	s3	t	Grid size	⚖
GN 10b-30308S-N-2-4	30	30	8	2	4	7.3	-	-	2.2	9	30	6800
GN 10b-30308S-N-3-4	30	30	8	3	4	7.3	-	-	2.2	9	30	10200
GN 10b-30608S-N-2-2	30	60	8	2	2	7.3	-	30	2.2	9	30	5960
GN 10b-30608S-N-3-2	30	60	8	3	2	7.3	-	30	2.2	9	30	8940
GN 10b-454510S-N-2-4	45	45	10	2	4	10	-	-	6	12.5	45	16240
GN 10b-454510S-N-3-4	45	45	10	3	4	10	-	-	6	12.5	45	24360
GN 10b-456010S-N-2-2	45	60	10	2	2	10	-	-	6	12.5	45	12040
GN 10b-456010S-N-3-2	45	60	10	3	2	10	-	-	6	12.5	45	18060
GN 10b-459010S-N-2-2	45	90	10	2	2	10	-	45	6	12.5	45	16480
GN 10b-459010S-N-3-2	45	90	10	3	2	10	-	45	6	12.5	45	24720
GN 10b-909010S-N-2-1	90	90	10	2	1	15	10	45	6	12.5	45	21020
GN 10b-909010S-N-3-1	90	90	10	3	1	15	10	45	6	12.5	45	31530

Technical Data

Mechanical Data (in Extrusion Direction)

- Material: Al Mg Si 0.5 F25 (EN AW – 6063)
- Delivery condition: Artificially aged
- Anodized coating: E6EV1 (natural color), layer thickness: 10 µm
- Dimensional deviations as per DIN EN 12020-2
- Tensile strength R_m min. 245 N/mm²
- Yield point $R_{p0.2}$ min. 195 N/mm²
- Density 2.7 kg/dm³
- Linear expansion coefficient 23,6x10^{-6} 1/k
- Modulus of elasticity E ≈ 70,000 N/mm²
- Hardness ≈ 75HB -2.5/187.5

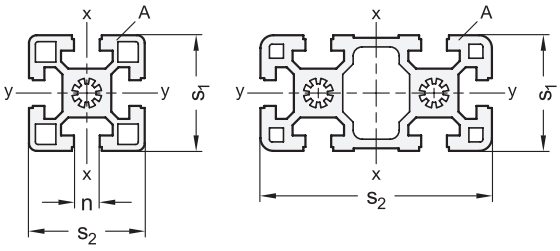
Permissible Tensile Load on the Slot



n	Grid size	Profile type	FN* in N			
			With T-Nuts GN 50b		With T-Slot Nuts GN 51b	With T-Slot Bolts GN 52b
			Type V / F	Type S		
8	30	Heavy	2500	6000	3000	3500
10	40	Light	7500	-	5500	9000
10	45	Light	7500	-	5500	9000
10	45	Heavy	8500	17500	7500	9000

* Depending on the thread size of the T-nut / T-slot nut / T-slot bolt

Cross-Section Properties



W_x, W_y = Axial resistance torque against bending
I_x, I_y = 2nd moment of area against bending
A = Cross-section area
m = Length-related mass

GN 10b-L Profile type light

s1	s2	n	Grid size	Bending axis x-x		Bending axis y-y		A in cm²	m ≈ in kg/m
				I_x in cm⁴	W_x in cm³	I_y in cm⁴	W_y in cm³		
40	40	10	40	9.06	4.53	9.06	4.53	5.61	1.51
40	80	10	40	63.2	15.8	17.2	8.61	9.86	2.67
45	45	10	45	11.7	4.89	11.7	4.89	5.73	1.55
45	90	10	45	81.8	18.2	23.5	10.5	11.3	3.05
80	80	10	40	132.6	33.2	132.6	33.2	18.5	4.98
90	90	10	45	210.5	46.8	210.5	46.8	23.5	6.34

GN 10b-S Profile type heavy

s1	s2	n	Grid size	Bending axis x-x		Bending axis y-y		A in cm²	m ≈ in kg/m
				I_x in cm⁴	W_x in cm³	I_y in cm⁴	W_y in cm³		
30	30	8	30	2.77	1.85	2.77	1.85	3.14	0.85
30	60	8	30	5.09	3.39	19.7	6.55	5.53	1.49
45	45	10	45	13.9	6.91	13.9	6.91	7.5	2.03
45	60	10	45	37.6	12.5	22.7	10.1	11.1	3.01
45	90	10	45	124.1	27.6	32.3	14.3	15.2	4.12
90	90	10	45	302.0	67.1	302.0	67.1	38.9	10.5