

Technical Data Sheet

optibelt ALPHA LINEAR / V AT5K6

PU Timing Belt with Cogged V-guide and Optionally with Fabric PAZ/PAR, Open-Ended / Endless Joined

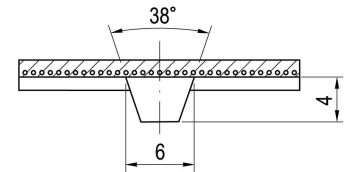
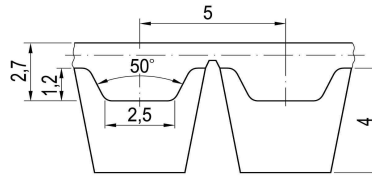


Dimensions, Tolerances

Profile:	AT5K6
Tooth pitch t:	5 mm
Total thickness without Vguide:	2.7 mm
Tooth height:	1.2 mm
Tooth tip width:	2.5 mm
Tooth flank angle:	50°
Length tolerance:	±0.5 mm/m
Width tolerance:	±0.5 mm
Thickness tolerance:	±0.15 mm
V-guide width, -height, -angle:	6 mm, 4 mm, 38°

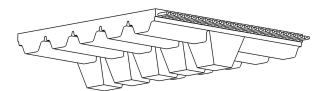
Construction

Polyurethane:	Thermoplastic, 92 Shore A, white
Tension cord:	Steel, Ø 0.5 mm
Fabric, optional:	Polyamide, tooth and back (PAZ/PAR), green



Specific nominal tensile force transmittable per tooth

Input speed n ₁ [1/min]	Spec. nom. tensile force F _{N spez} [N/mm]	Input speed n ₁ [1/min]	Spec. nom. tensile force F _{N spez} [N/mm]	Input speed n ₁ [1/min]	Spec. nom. tensile force F _{N spez} [N/mm]
0	3.600	1200	2.478	3600	1.814
20	3.555	1300	2.433	3800	1.779
40	3.513	1400	2.391	4000	1.746
60	3.473	1500	2.351	4500	1.670
80	3.435	1600	2.314	5000	1.601
100	3.399	1700	2.278	5500	1.538
200	3.243	1800	2.244	6000	1.481
300	3.116	1900	2.212	6500	1.427
400	3.009	2000	2.181	7000	1.378
500	2.916	2200	2.123	7500	1.332
600	2.834	2400	2.070	8000	1.289
700	2.761	2600	2.020	8500	1.248
800	2.694	2800	1.973	9000	1.210
900	2.634	3000	1.930	9500	1.173
1000	2.578	3200	1.889	10000	1.139
1100	2.526	3400	1.850	v _{max} = 80 m/s	



Nominal tensile force F_N

$$F_N = F_{N\ spez} \cdot z_{eB} \cdot (b - 6)$$

- F_{N spez} Specific nominal tensile force transmittable per tooth [N/mm]
- z_{eB} Number of teeth in mesh, driver pulley, limited to z_{eB max}
- z_{eB max} ALPHA linear: 12, ALPHA V: 6
- b Belt width [mm]

Nominal torque M_N

$$M_N = F_N \cdot d_{w1} / (2 \cdot 10^3)$$

$$d_{w1} = z_1 \cdot t / \pi \quad [mm]$$

- d_{w1} Pitch diameter, driver pulley [mm]
- z₁ Number of teeth, driver pulley
- t Tooth pitch [mm]

Nominal power P_N

$$P_N = F_N \cdot z_1 \cdot t \cdot n_1 / (6 \cdot 10^7)$$

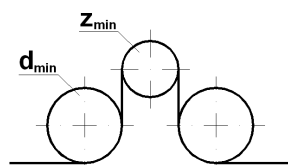
- n₁ Speed, driver pulley [1/min]

Cord tensile force, minimum belt length, belt weight

Belt width * b [mm]	25	32	50	75	100
F _{Br} [N], ALPHA LINEAR	6240	8240	13960	21920	29920
F _{zul} [N] ² , ALPHA LINEAR, ε _{zul} =0,47%	1560	2060	3490	5480	7480
F _{zul} [N] ² , ALPHA V	780	1030	1745	2740	3740
Minimum belt length [mm]	1000	1000	1000	1000	1000
Weight per metre [kg/m]	0.105	0.128	0.187	0.270	0.352

¹ Smaller and intermediate widths possible ² Allowable tensile force F_{zul} = 25% / 12.5% (ALPHA linear / V) of cord breaking strength F_{Br} c_{spez} = F_{zul} / ε_{zul} [N]

Timing belt pulleys, inside and outside idlers, clamping plates



- Minimum no. of teeth of V grooved pulleys: z_{min} = 20
- Minimum pitch diameter of V grooved pulleys: d_{w min} = 31.83 mm
- Minimum no. of teeth in mesh per V grooved clamp. plate: z_{CP min} = 8
- Minimum-Ø of a plane inside idler, V grooved: d_{min} = 28 mm
- Minimum diameter of a plane outside idler: d_{min} = 55 mm

We would be pleased to offer advice about technical characteristics and drive design as well as special requirements. Further information can be found in Optibelt documentation. © Optibelt GmbH 01/2020. Subject to technical modification and change, errors and omissions excepted.