Technical Data Sheet

optibelt ALPHA LINEAR / V AT10K13 - RF

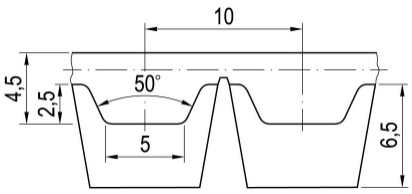
Polyurethane Timing Belt With Cogged V Guide, Thermoplastic PU, Open-Ended / Endless Joined

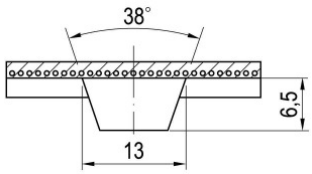
Dimensions, Tolerances

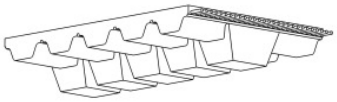
Profile:	AT10K13
Tooth pitch t:	10 mm
Total thickness without V guide:	4.5 mm
Tooth height:	2.5 mm
Tooth tip width:	5 mm
Tooth flank angle:	50°
Length tolerance:	±0.5 mm/m
Width tolerance:	±0.5 mm
Thickness tolerance:	±0.3 mm
V guide width, -hight, -angle:	13 mm, 6.5 mm, 38°

Construction

Polyurethane:	Thermoplastic, 85 Shore A FDA, blue
Tension cord:	Stainless Steel, Ø 0.9 mm







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	7.500	1200	4.734	3600	3.164
20	7.382	1300	4.627	3800	3.083
40	7.273	1400	4.527	4000	3.005
60	7.170	1500	4.432	4500	2.826
80	7.073	1600	4.343	5000	2.664
100	6.982	1700	4.259	5500	2.518
200	6.590	1800	4.178	6000	2.383
300	6.275	1900	4.102	6500	2.259
400	6.012	2000	4.029	7000	2.143
500	5.785	2200	3.892	7500	2.036
600	5.586	2400	3.766	8000	1.935
700	5.409	2600	3.649	8500	1.840
800	5.250	2800	3.540	9000	1.750
900	5.104	3000	3.437	9500	1.665
1000	4.971	3200	3.341	10000	1.584
1100	4.848	3400	3.250	v_{max} = 60 m/s	

Nominal tensile force F_N

$$F_N = F_{N\,spez} \cdot z_{eB} \cdot (b - 13) \quad [N]$$

$F_{N\ spez}$	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

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

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

d_{w1}	Pitch diameter, driver pulley [mm]
z_1	Number of teeth, driver pulley
t	Tooth pitch [mm]

Nominal power P_N

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

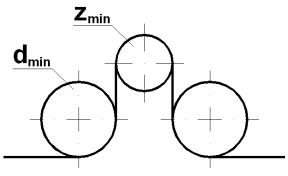
n_1	Speed, driver pulley [1/min]

Cord tensile force, minimum belt length, belt weight

Belt width [1] b [mm]	32	50	75	100
F_{Br} [N], ALPHA LINEAR	13560	22640	34720	48320
F_{zul} [N] [2], ALPHA LINEAR, ε_{zul}=0,46%	3390	5660	8680	12080
F_{zul} [N] [2], ALPHA V	1695	2830	4340	6040
Minimum belt length [mm]	1000	1000	1000	1000
Weight per metre [kg/m]	0,289	0,396	0,545	0,694

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

Timing belt pulleys, inside and outside idlers, clamping plates



Minimum no. of teeth of V grooved pulleys:	z_{min}	= 30
Minimum pitch diameter of V grooved pulleys:	$d_{w\ min}$	= 95.49 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}	= 95 mm
Minimum diameter of a plane outside idler:	d_{min}	= 120 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.