Technical Data Sheet

optibelt ALPHA LINEAR / V T10K6

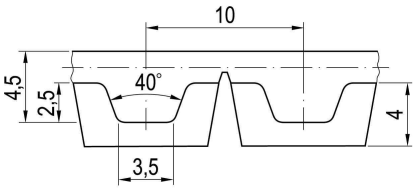
PU Self-Tracking Timing Belt with Cogged V-guide, Optionally with Fabric PAZ/PAR, Open Ended / Endless Joined

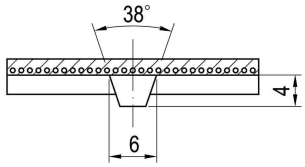
Dimensions, Tolerances

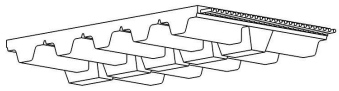
Profile:	T10K6
Tooth pitch t:	10 mm
Total thickness without V guide:	4.5 mm
Tooth height:	2.5 mm
Tooth tip width:	3.5 mm
Tooth flank angle:	40°
Length tolerance:	±0.5 mm/m
Width tolerance:	±0.5 mm
Thickness tolerance:	±0.3 mm
V guide width, -hight, -angle:	6 mm, 4 mm, 38°

Construction

Polyurethane:	Thermoplastic, 92 Shore A, white
Tension cord:	Steel, Ø 0.6 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	5.200	1200	2.923	3600	2.037
20	5.024	1300	2.860	3800	1.993
40	4.879	1400	2.802	4000	1.950
60	4.755	1500	2.747	4500	1.853
80	4.646	1600	2.695	5000	1.766
100	4.551	1700	2.647	5500	1.687
200	4.189	1800	2.601	6000	1.615
300	3.936	1900	2.558	6500	1.549
400	3.742	2000	2.516	7000	1.487
500	3.585	2200	2.439	7500	1.430
600	3.452	2400	2.369	8000	1.376
700	3.338	2600	2.303	8500	1.325
800	3.237	2800	2.243	9000	1.278
900	3.147	3000	2.187	9500	1.233
1000	3.066	3200	2.134	10000	1.190
1100	2.991	3400	2.084	v_{max} = 60 m/s	

Nominal tensile force F_N

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

$F_{N\ spez}$	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

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

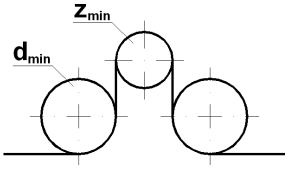
n_1	Speed, driver pulley [1/min]

Cord tensile force, minimum belt length, belt weight

Belt width [1] b [mm]	25	32	50	75	100
F_{Br} [N], ALPHA LINEAR	8800	11760	19320	29800	40320
F_{zul} [N] [2], ALPHA LINEAR, ε_{zul}=0,45%	2200	2940	4830	7450	10080
F_{zul} [N] [2], ALPHA V / short joining[3]	1100 / 550	1470	2415	3725	5040
Minimum belt length/short joining[3] [mm]	1000 / 450	1000	1000	1000	1000
Weight per metre [kg/m]	0.149	0.182	0.265	0.380	0.496

[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]
[3] Short joining from 450 mm, allowable tensile Force F_{zul} = 50% of a standard joining

Timing belt pulleys, inside and outside idlers, clamping plates



Minimum no. of teeth of V grooved pulleys:	z_{min}	= 25
Minimum pitch diameter of V grooved pulleys:	$d_{w\ min}$	= 79.58 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}	= 76 mm
Minimum diameter of a plane outside idler:	d_{min}	= 90 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.