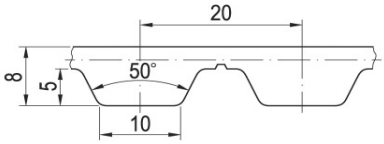
Technical Data Sheet
optibelt ALPHA LINEAR / V AT20 - ST
PU Timing Belt, Optionally With Fabric PAZ/PAR, Open-Ended / Endless Joined

Dimensions, Tolerances

Profile:	AT20
Tooth pitch t:	20 mm
Total thickness:	8 mm
Tooth height:	5 mm
Tooth tip width:	10 mm
Tooth flank angle:	50°
Length tolerance:	± 0.5 mm/m
Width tolerance:	± 0.7 mm
Thickness tolerance:	± 0.3 mm

Construction

Polyurethane:	Thermoplastic, 92 Shore A, white
Tension cord:	Steel, ø 1.2 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	15.000	1200	8.371	3600	4.683
20	14.710	1300	8.119	3800	4.491
40	14.441	1400	7.883	4000	4.309
60	14.190	1500	7.661	4500	3.889
80	13.955	1600	7.451	5000	3.511
100	13.733	1700	7.252	5500	3.167
200	12.786	1800	7.063		
300	12.029	1900	6.883		
400	11.399	2000	6.711		
500	10.859	2200	6.390		
600	10.387	2400	6.093		
700	9.967	2600	5.819		
800	9.589	2800	5.563		
900	9.246	3000	5.323		
1000	8.931	3200	5.097		
1100	8.640	3400	4.884	v_{max} = 40 m/s	

Nominal tensile force F_N

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

$F_{N\,spez}$ 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

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

$d_{w1} = z_1 \cdot t / \pi$

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

Nominal power P_N

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

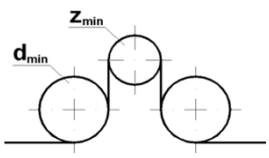
n_1 Speed, driver pulley [1/min]

Cord tensile force, minimum belt length, belt weight

Belt width [1] b [mm]	25	32	50	75	100	150
F_{Br} [N], ALPHA LINEAR	19000	25920	43240	67440	89960	136640
F_{zul} [N] [2], ALPHA LINEAR ε_{zul} = 0.5%	4750	6480	10810	16860	22490	34160
F_{zul} [N] [2], ALPHA V	2375	3240	5405	8430	11245	17080
Min. belt length ALPHA V [mm]	900	900	900	900	1100	1100
Weight per metre [kg/m]	0.258	0.330	0.515	0.773	1.030	1.545

[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, idlers, clamping plates



Minimum no. of teeth of the pulleys:	z_{min} = 18
Minimum pitch diameter of the pulleys:	$d_{w\,min}$ = 114.59 mm
Minimum no. of teeth in mesh, clamping plate:	$z_{CP\,min}$ = 8
Minimum- of a plane inside idler:	d_{min} = 120 mm
Minimum- of a plane outside idler:	d_{min} = 180 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.