

Technical Data Sheet

optibelt ALPHA POWER AT3 - HF

PU Timing Belt, Cast Polyurethane, Endless

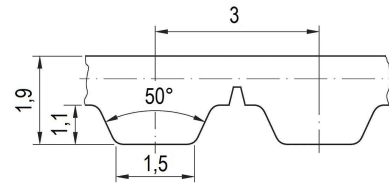


Dimensions, Tolerances

Profile:	AT3
Tooth pitch t:	3 mm
Total thickness:	1.9 mm
Tooth height:	1.1 mm
Tooth tip width:	1.5 mm
Tooth flank angle:	50°
Length tolerance:	See table
Width tolerance, b ≤ 20 mm:	±0.5 mm
Thickness tolerance:	±0.3 mm

Construction

Polyurethane:	Thermoset, 86 +/-4 Shore A, grey
Tension cord:	Steel, high flexible, Ø 0.3 mm



Specific nominal power transmittable per tooth

Speed, small pulley n _k [1/min]	Specific nom. power P _{N spez} [W/mm]	Speed, small pulley n _k [1/min]	Specific nom. power P _{N spez} [W/mm]	Speed, small pulley n _k [1/min]	Specific nom. power P _{N spez} [W/mm]
0 ¹	0.000	1200	0.197	3600	0.449
20	0.005	1300	0.210	3800	0.466
40 ²	0.009	1400	0.223	4000	0.483
60	0.013	1500	0.235	4500	0.522
80 ³	0.017	1600 ⁷	0.248	5000	0.559
100	0.022	1700	0.259	5500	0.594
200 ⁴	0.042	1800	0.271	6000	0.628
300	0.060	1900	0.282	6500	0.659
400 ⁵	0.078	2000	0.294	7000	0.689
500	0.095	2200	0.315	7500	0.717
600	0.111	2400	0.336	8000	0.744
700	0.127	2600	0.357	8500	0.770
800 ⁶	0.142	2800	0.376	9000	0.794
900	0.156	3000	0.395	9500	0.817
1000	0.170	3200 ⁸	0.414	10000	0.839
1100	0.184	3400	0.432	v _{max} = 80 m/s	

Nominal power P_N

$$P_N = P_{N\ spez} \cdot z_k \cdot z_{eB} \cdot b / 10^3 \quad [\text{kW}]$$

P _{N spez}	Specific nominal power transmittable per tooth [W/mm]
z _k	Number of teeth, small pulley
z _{eB}	Number of teeth in mesh, small pulley, limited to z _{eB max}
z _{eB max}	12, maximum allowable no. of teeth
b	Belt width [mm]

Nominal torque M_N

$$M_N = P_N \cdot 9.55 \cdot 10^3 / n_k \quad [\text{Nm}]$$

n _k	Speed, small pulley [1/min]
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Nominal tensile force F_N

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

$$F_{N\ spez} = P_{N\ spez} \cdot 6 \cdot 10^4 / (n_k \cdot t) \quad [\text{N/mm}]$$

F _{N spez}	Specific nominal tensile force transmittable per tooth [N/mm]
t	Tooth pitch [mm]

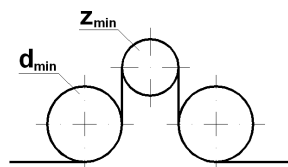
¹F_{N spez} [N/mm] 4.550 ²4.458 ³4.375 ⁴4.167 ⁵3.904 ⁶3.541 ⁷3.094 ⁸2.586

Cord tensile forces, belt weight

Belt width ¹ b [mm]	6	10	12	16	20	25	32	50	75	100
Breaking strength F _{Br} [N]	980	1800	2120	2960	3760	4760	6240	10000	15080	20160
Allowable tensile force ² F _{zul} [N]	245	450	530	740	940	1190	1560	2500	3770	5040
Weight per metre [kg/m]	0.013	0.021	0.026	0.034	0.043	0.053	0.068	0.107	0.160	0.213

¹ Other and intermediate widths possible ² Allowable tensile force F_{zul} equivalent to 25% breaking strength F_{Br} of the cords

Timing belt pulleys, inside and outside idlers



No. of teeth: z _{min}	= 15
Pitch-Ø: d _{w min}	= 14.32 mm
Plane, cylindrical idlers, Ø	
Inside idler: d _{min}	= 20 mm
Outside idler: d _{min}	= 20 mm

Length tolerances, shown as centre distance tolerances

Length L _w [mm]	Tolerance a _{L Tol} [mm]
≤ 305	± 0,14
> 305	± 0,16