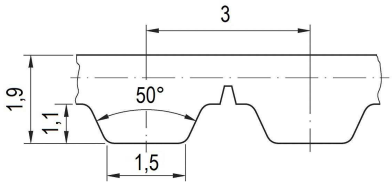
Technical Data Sheet
optibelt ALPHA TORQUE AT3 - HF
PU Timing Belt, Cast Polyurethane, Endless

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, 84 +/-4 Shore A, transparent
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	0.152	3600	0.345
20	0.003	1300	0.162	3800	0.359
40 [2]	0.007	1400	0.171	4000	0.371
60	0.010	1500	0.181	4500	0.402
80 [3]	0.013	1600 [7]	0.190	5000	0.430
100	0.017	1700	0.199	5500	0.457
200 [4]	0.032	1800	0.208	6000	0.483
300	0.046	1900	0.217	6500	0.507
400 [5]	0.060	2000	0.226	7000	0.530
500	0.073	2200	0.243	7500	0.552
600	0.085	2400	0.259	8000	0.572
700	0.097	2600	0.274	8500	0.592
800 [6]	0.109	2800	0.289	9000	0.611
900	0.120	3000	0.304	9500	0.628
1000	0.131	3200 [8]	0.318	10000	0.645
1100	0.142	3400	0.332	v_{max} = 80 m/s	

[1] $F_{N\,spez}$ [N/mm] 3.500 [2] 3.429 [3] 3.365 [4] 3.205 [5] 3.003 [6] 2.724 [7] 2.380 [8] 1.989

Nominal power P_N

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

$P_{N\,spez}$	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

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

n_k Speed, small pulley [1/min]

Nominal tensile force F_N

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

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

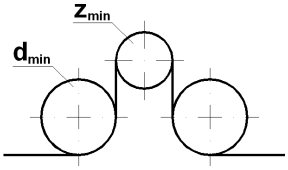
$F_{N\,spez}$	Specific nominal tensile force transmittable per tooth [N/mm]
t	Tooth pitch [mm]

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_{LTol} [mm]
	≤ 305	± 0,14
> 305	≤ 390	± 0,16