Technical Data Sheet
optibelt ALPHA TORQUE L - ST
PU Timing Belt, Cast Polyurethane, Endless

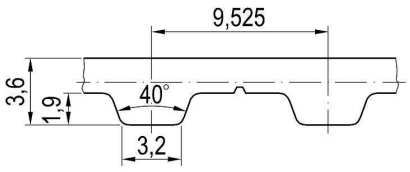
Dimensions, Tolerances

Profile:	L
Tooth pitch t:	3/8 in = 9.525 mm
Total thickness:	3.6 mm
Tooth height:	1.9 mm
Tooth tip width:	3.2 mm
Tooth flank angle:	40°
Length tolerance:	See table
[1]Width tolerance, b ≤ 25.4 mm:	+ 0.8 / - 1.3 mm
Thickness tolerance:	± 0.3 mm

[1]Till belt length 838.2 mm width tolerance ± 0.8 mm

Construction

Polyurethane: Thermoset, 84 +/-4 Shore A, transparent
Tension cord: Steel, Ø 0.5 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	0.421	3600	0.889
20	0.012	1300	0.447	3800	0.918
40 [2]	0.023	1400	0.471	4000	0.947
60	0.034	1500	0.495	4500	1.014
80 [3]	0.044	1600 [7]	0.519	5000	1.075
100	0.054	1700	0.541	5500	1.131
200 [4]	0.100	1800	0.563	6000	1.184
300	0.141	1900	0.585	6500	1.232
400 [5]	0.179	2000	0.606	7000	1.276
500	0.214	2200	0.647	7500	1.317
600	0.248	2400	0.686	8000	1.354
700	0.280	2600	0.723	8500	1.388
800 [6]	0.310	2800	0.759	9000	1.419
900	0.339	3000	0.793	9500	1.448
1000	0.367	3200 [8]	0.826	10000	1.473
1100	0.395	3400	0.858	v_{max} = 60 m/s	

[1] $F_{N\,spez}$ [N/mm] 3.900 [2] 3.660 [3] 3.487 [4] 3.147 [5] 2.816 [6] 2.442 [7] 2.042 [8] 1.626

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

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

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

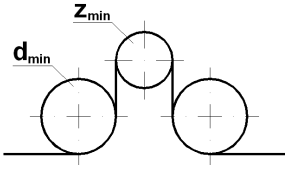
$F_{N\,spez}$	Specific nominal tensile force transmittable per tooth [N/mm]
t	Tooth pitch [mm]

Cord tensile forces, belt weight

Width code Belt width [1] b [mm]	**037** 9.4	**050** 12.7	**075** 19.05	**100** 25.4	**150** 38.1
Breaking strength F_{Br} [N]	4820	6740	10600	14460	22180
Allowable tensile force [2] F_{zul} [N]	1205	1685	2650	3615	5545
Weight per metre m_L [kg/m]	0.033	0.044	0.066	0.088	0.132

[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} = 12
Pitch-Ø: $d_{w\,min}$ = 36.38 mm
Plane, cylindrical idlers, Ø
Inside idler: d_{min} = 45 mm
Outside idler: d_{min} = 50 mm

Length tolerances, shown as centre distance tolerances

Length L_w [mm]		Tolerance a_{LTol} [mm]
	≤ 305	± 0.14
> 305	≤ 390	± 0.16
> 390	≤ 525	± 0.18
> 525	≤ 630	± 0.21
> 630	≤ 780	± 0.24
> 780	≤ 990	± 0.28
> 990	≤ 1250	± 0.32
> 1250	≤ 1560	± 0.38

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. Subject to technical modification and change, errors and omissions excepted.