

Technical Data Sheet

Optibelt ALPHA linear / V L - HF

Polyurethane Timing Belt Optional With Fabric PAZ/PAR,
Thermoplastic PU, Open-Ended / Endless Joined



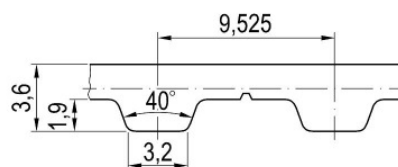
Power Transmission

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:	±0.5 mm/m
Width tolerance:	±0.5 mm
Thickness tolerance:	±0.3 mm

Construction

Polyurethane: Thermoplastic, 92 Shore A, white
Tension cord: Steel, high flexible, Ø 0.5 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	3.900	1200	2.210	3600	1.555
20	3.768	1300	2.164	3800	1.522
40	3.660	1400	2.120	4000	1.491
60	3.567	1500	2.080	4500	1.419
80	3.487	1600	2.042	5000	1.354
100	3.416	1700	2.006	5500	1.296
200	3.147	1800	1.972	6000	1.243
300	2.960	1900	1.940	6500	1.194
400	2.816	2000	1.909	7000	1.148
500	2.700	2200	1.852	7500	1.106
600	2.602	2400	1.800	8000	1.066
700	2.517	2600	1.752	8500	1.029
800	2.442	2800	1.707	9000	0.993
900	2.376	3000	1.665	9500	0.960
1000	2.315	3200	1.626	10000	0.928
1100	2.261	3400	1.589	$v_{max} = 60$ 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

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

$$d_{w1} = z_1 \cdot t / \pi \quad [mm]$$

d_{w1} Pitch diameter, driver pulley [mm]

z_1 Number of teeth, driver pulley

t Tooth pitch [mm]

Nominal power P_N

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

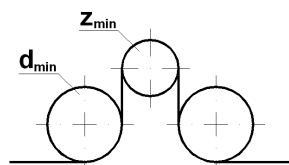
n_1 Speed, driver pulley [1/min]

Cord tensile force, minimum belt length, belt weight

Width code Belt width * b [mm]	050 12.7	075 19.05	100 25.4	150 38.1	200 50.8	300 76.2	400 101.6
F_{Br} [N], ALPHA linear	2440	4320	5920	9720	13480	21040	28600
F_{zul} [N]**, ALPHA linear $\epsilon_{zul} = 0.55\%$	610	1080	1480	2430	3370	5260	7150
F_{zul} [N]**, ALPHA V	305	540	740	1215	1685	2630	3575
Minimum belt length [mm]	704.85	704.85	704.85	704.85	704.85	904.875	904.875
Weight per metre [kg/m]	0.044	0.067	0.089	0.133	0.178	0.267	0.356

*Smaller and intermediate widths possible ** Allowable tensile force $F_{zul} = 25\% / 12.5\%$ (ALPHA linear / V) of cord breaking strength F_{Br} $C_{spez} = F_{zul} / \epsilon_{zul}$ [N]

Timing belt pulleys, idlers, clamping plates



Minimum no. of teeth of the pulleys:

$$z_{min} = 10$$

Minimum pitch diameter of the pulleys:

$$d_{w\ min} = 30.32 \text{ mm}$$

Minimum no. of teeth in mesh, clamp. plate:

$$z_{CP\ min} = 6$$

Minimum-Ø of a plane inside idler:

$$d_{min} = 30 \text{ mm}$$

Minimum-Ø of a plane outside idler:

$$d_{min} = 40 \text{ mm}$$

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. © Optibelt GmbH 11/2012. Subject to technical modification and change, errors and omissions excepted.