

Technical Data Sheet

optibelt ALPHA LINEAR / V L - ST

PU Timing Belt, Optionally With Fabric PAZ/PAR, Open-Ended / Endless Joined

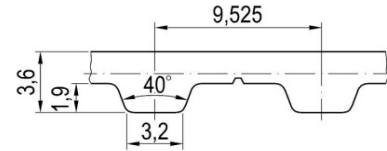


Dimensions, Tolerances

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, 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

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

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

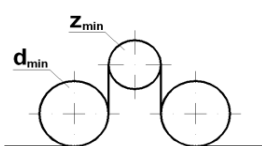
Cord tensile force, minimum belt length, belt weight

Belt width ¹ b [mm]	9.4	12.7	19.05	25.4	38.1	50.8	76.2	101.6
Width code	037	050	075	100	150	200	300	400
F_{Br} [N], ALPHA LINEAR	1400	2560	4560	6240	10240	14240	22200	30200
F_{zul} [N] ² , ALPHA LINEAR $\epsilon_{zul} = 0.47\%$	350	640	1140	1560	2560	3560	5550	7550
F_{zul} [N] ² , ALPHA V	175	320	570	780	1280	1780	2775	3775
Min. belt length ALPHA V [mm]	-	700	700	700	700	700	-	900
Weight per metre [kg/m]	0.033	0.044	0.067	0.089	0.133	0.178	0.267	0.356

¹ Smaller and intermediate widths possible

² Allowable tensile force $F_{zul} = 25\% / 12.5\%$ (ALPHA LINEAR / V) of cord breaking strength F_{Br} $c_{spez} = F_{zul} / \epsilon_{zul}$ [N]

Timing belt pulleys, idlers, clamping plates



Minimum no. of teeth of the pulleys:	$z_{min} = 12$
Minimum pitch diameter of the pulleys:	$d_{w\ min} = 36.38$ mm
Minimum no. of teeth in mesh, clamping plate:	$z_{CP\ min} = 8$
Minimum- of a plane inside idler:	$d_{min} = 45$ mm
Minimum- of a plane outside idler:	$d_{min} = 50$ mm