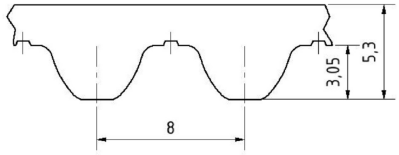
Technical Data Sheet
optibelt ALPHA LINEAR S8M - ST
PU Timing Belt, Optionally with Fabric PAZ/PAR, Open-Ended

Dimensions, Tolerances

Profile:	S8M
Tooth pitch t:	8 mm
Total thickness:	5.3 mm
Tooth height:	3.05 mm
Tooth tip width:	-
Tooth flank angle:	-
Length tolerance:	± 0.5 mm/m
Width tolerance:	± 0.5 mm
Thickness tolerance:	± 0.3 mm

Construction

Polyurethane:	Thermoplastic, 92 Shore A, black
Tension cord:	Steel, ø 0.9 mm
Fabric, optional:	Polyamide, tooth and back, (PAZ/PAR), black



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	7.200	1200	4.458	3600	2.936
20	7.083	1300	4.353	3800	2.859
40	6.973	1400	4.255	4000	2.785
60	6.871	1500	4.162	4500	2.616
80	6.775	1600	4.075	5000	2.464
100	6.684	1700	3.993	5500	2.328
200	6.294	1800	3.914	6000	2.203
300	5.981	1900	3.840	6500	2.089
400	5.720	2000	3.769	7000	1.983
500	5.495	2200	3.636	7500	1.886
600	5.298	2400	3.514	8000	1.795
700	5.123	2600	3.401	8500	1.710
800	4.966	2800	3.296	9000	1.630
900	4.822	3000	3.197	9500	1.555
1000	4.691	3200	3.105	10000	1.484
1100	4.570	3400	3.018	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
b	Belt width [mm]

Nominal torque M_N

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

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

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]

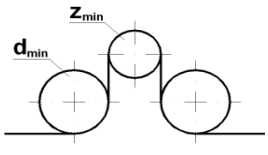
Cord tensile force, minimum belt length, belt weight

Belt width [1] b [mm]		10	15	20	30	50	85	100
F_{Br} [N], ALPHA LINEAR		4720	6640	9480	16120	28480	49400	60800
F_{zul} [N] [2], ALPHA LINEAR	ε_{zul} = 0.55%	1180	1660	2370	4030	7120	12350	15200
Weight per metre [kg/m]		0.062	0.093	0.124	0.186	0.310	0.527	0.620

[1] Smaller and intermediate widths possible

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

Timing belt pulleys, idlers, clamping plates



Minimum no. of teeth of the pulleys:	z_{min}	= 18
Minimum pitch diameter of the pulleys:	$d_{w\,min}$	= 45.84 mm
Minimum no. of teeth in mesh, clamping plate:	$z_{CP\,min}$	= 8
Minimum- of a plane inside idler:	d_{min}	= 50
Minimum- of a plane outside idler:	d_{min}	= 100 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.