

Filament Properties

HF100 High Tenacity

Linear Density		Filament Count	Tenacity			Breaking Force		Elongation at Break	Young's Modulus	
[denier]	[dtex]	[ea]	[g/d]	[MPa]	[cN/tex]	[kgf]	[N]	[%]	[g/d]	[GPa]
600	670	400	27.2	3,460	240	16.3	160	3.3	850	108
840	930	665	27.0	3,430	238	22.7	223	3.4	850	108
1,000	1,110	665	27.0	3,430	238	27.0	265	3.4	820	104
1,500	1,670	1,000	26.7	3,390	236	40.1	393	3.5	780	99
2,820	3,130	2,000	26.0	3,300	229	73.3	719	3.9	700	89
ASTM D1907 Option 3			ASTM D885							

* Measured at twist level : 1.1TM

**Tube Size : 94mm x 216mm

HF120 High Tenacity Improved Elongation

Linear Density		Filament Count	Tenacity			Breaking Force		Elongation at Break	Young's Modulus	
[denier]	[dtex]	[ea]	[g/d]	[MPa]	[cN/tex]	[kgf]	[N]	[%]	[g/d]	[GPa]
1,500	1,670	1,000	25.8	3280	228	39.2	384	3.7	710	90
ASTM D1907 Option 3			ASTM D885							

* Measured at twist level : 1.1TM

**Tube Size : 94mm x 216mm

Filament Properties

HF200 Standard Tenacity

Linear Density		Filament Count	Tenacity			Breaking Force		Elongation at Break	Young's Modulus	
[denier]	[dtex]	[ea]	[g/d]	[MPa]	[cN/tex]	[kgf]	[N]	[%]	[g/d]	[GPa]
400	440	267	23.5	2,990	207	9.4	92	3.0	810	103
600	670	400	23.5	2,990	207	14.1	138	3.0	820	104
840	930	560	23.5	2,990	207	19.7	193	3.1	800	102
1,000	1,110	665	23.5	2,990	207	23.5	230	3.2	770	98
1,500	1,670	1,000	23.5	2,990	207	35.3	346	3.3	740	94
2,000	2,220	1,330	23.5	2,990	207	47.0	461	3.4	740	94
2,250	2,500	1,000	23.5	2,990	207	52.9	519	3.6	690	88
ASTM D1907 Option 3			ASTM D885							

* Measured at twist level : 1.1TM

**Tube Size : 94mm x 216mm

HF210 Standard Tenacity for Ballistic

Linear Density		Filament Count	Tenacity			Breaking Force		Elongation at Break	Young's Modulus	
[denier]	[dtex]	[ea]	[g/d]	[MPa]	[cN/tex]	[kgf]	[N]	[%]	[g/d]	[GPa]
1,000	1,110	665	24.5	3,110	216	24.5	240	3.2	800	102
1,500	1,670	1,000	24.5	3,110	216	36.8	361	3.3	760	97
3,000	3,330	2,000	24.0	3,050	212	72.0	706	3.6	710	90
ASTM D1907 Option 3			ASTM D885							

* Measured at twist level : 1.1TM

**Tube Size : 94mm x 216mm

Filament Properties

HF220 Improved Elongation

Linear Density		Filament Count	Tenacity			Breaking Force		Elongation at Break	Young's Modulus	
[denier]	[dtex]	[ea]	[g/d]	[MPa]	[cN/tex]	[kgf]	[N]	[%]	[g/d]	[GPa]
1,500	1,670	1,000	23.7	3,010	209	35.8	351	4.0	680	86
ASTM D1907 Option 3			ASTM D885							

* Measured at twist level : 1.1TM

**Tube Size : 94mm x 216mm

HF300 High Modulus

Linear Density		Filament Count	Tenacity			Breaking Force		Elongation at Break	LASE				Young's Modulus	
									0.5%		1.0%			
[denier]	[dtex]	[ea]	[g/d]	[MPa]	[cN/tex]	[kgf]	[N]	[%]	[kgf]	[N]	[kgf]	[N]	[g/d]	[GPa]
1,140	1,270	1,000	24.0	3,050	212	27.4	269	2.5	6.2	61	11.8	116	990	126
1,420	1,580	1,000	23.3	2,960	206	33.1	325	2.5	7.6	75	14.1	138	960	122
2,280	2,530	2,000	23.5	2,980	207	53.6	526	2.6	11.9	117	22.6	222	940	119
2,840	3,160	2,000	22.6	2,870	199	64.2	630	2.5	14.3	140	26.6	261	900	114
5,680	6,320	4,000	22.0	2,800	194	125	1,226	2.7	26.1	256	47.7	468	820	104
7,100	7,900	5,000	22.0	2,800	194	156	1,530	2.8	31.7	311	57.9	568	790	100
8,520	9,480	6,000	21.8	2,770	192	186	1,824	2.9	35.9	352	66.1	648	750	95
9,940	11,060	7,000	21.7	2,760	192	216	2,118	3.0	39.1	383	73.0	716	720	92
11,360	12,640	8,000	21.5	2,730	190	244	2,393	3.1	43.5	427	80.1	786	700	89
14,200	15,800	10,000	21.5	2,730	190	305	2,991	3.3	52.7	517	97.4	955	660	84
ASTM D1907 Option 2			ASTM D885											

* Measured at twist level : 1.1TM

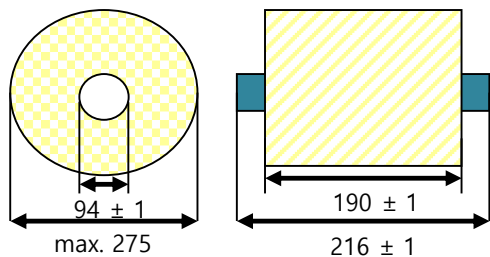
** LASE : Measured at no twist

***Tube Size : 94mm x 216mm, 94mm x 290mm

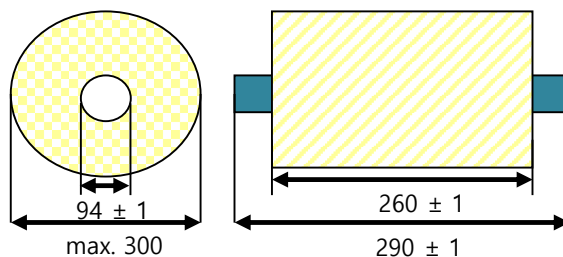
Filament Package

Type	Linear Density		Yarn Length [km]	Bobbin Weight [kg]	Bobbin Size I.D x Length x O.D [mm]	No. of Bobbins	Box Weight [kg]
	[denier]	[dtex]					
HF100	600	670	31.4	2.0	94 x 216 x 170	72	144.0
	840	930	53.6	5.0	94 x 216 x 210	72	360.0
	1,000	1,110	45.0	5.0	94 x 216 x 210	72	360.0
	1,500	1,670	30.0	5.0	94 x 216 x 210	72	360.0
	2,820	3,130	15.9	5.0	94 x 216 x 210	72	360.0
HF200	600	670	74.3	5.0	94 x 216 x 210	72	360.0
	840	930	52.6	5.0	94 x 216 x 210	72	360.0
	1,000	1,110	44.2	5.0	94 x 216 x 210	72	360.0
	1,500	1,670	29.6	5.0	94 x 216 x 210	72	360.0
	2,000	2,220	31.2	7.0	94 x 216 x 250	52	364.0
	2,250	2,500	27.7	7.0	94 x 216 x 250	52	364.0
	3,000	3,330	25.6	8.6	94 x 216 x 265	52	447.2
HF300	1,140	1,270	39.1	5.0	94 x 216 x 220	72	360.0
	1,420	1,580	31.8	5.0	94 x 216 x 220	72	360.0
			51.4	8.1	94 x 216 x 260	52	421.2
	2,280	2,530	19.5	5.0	94 x 216 x 220	72	360.0
	2,840	3,160	15.9	5.0	94 x 216 x 220	72	360.0
			16.8	5.4	94 x 216 x 225	72	388.8
			25.2	8.0	94 x 216 x 260	52	416.0
	5,680	6,320	12.6	8.0	94 x 290 x 240	54	432.0
	7,100	7,900	12.6	10.2	94 x 290 x 255	39	397.8
	8,520	9,480	8.4	8.1	94 x 290 x 235	54	437.4
	9,940	11,060	8.4	9.5	94 x 290 x 255	39	370.5
	11,360	12,640	6.3	8.1	94 x 290 x 245	54	437.4
	14,200	15,800	6.3	10.2	94 x 290 x 265	39	397.8

Bobbin 1 ; Lower than 3,000 denier



Bobbin 2 ; Higher than 5,680 denier



Dimension	
Width [mm]	1,100
Depth [mm]	1,100
Height (1) [mm]	900
Height (2) [mm]	120

The Following technical information and data should be considered representative or typical only and should not be used for specification