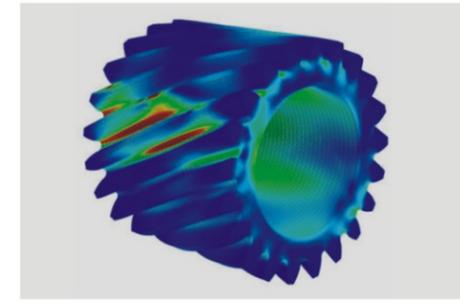






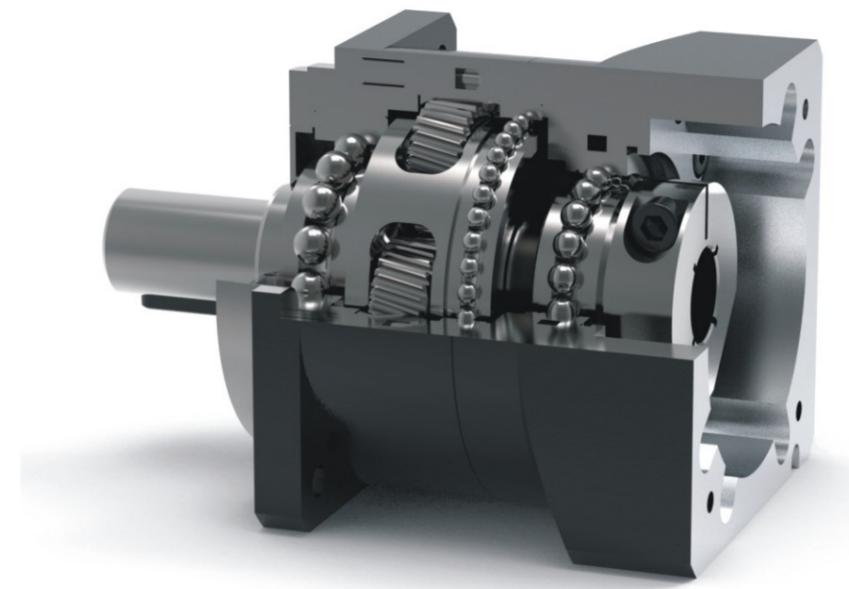
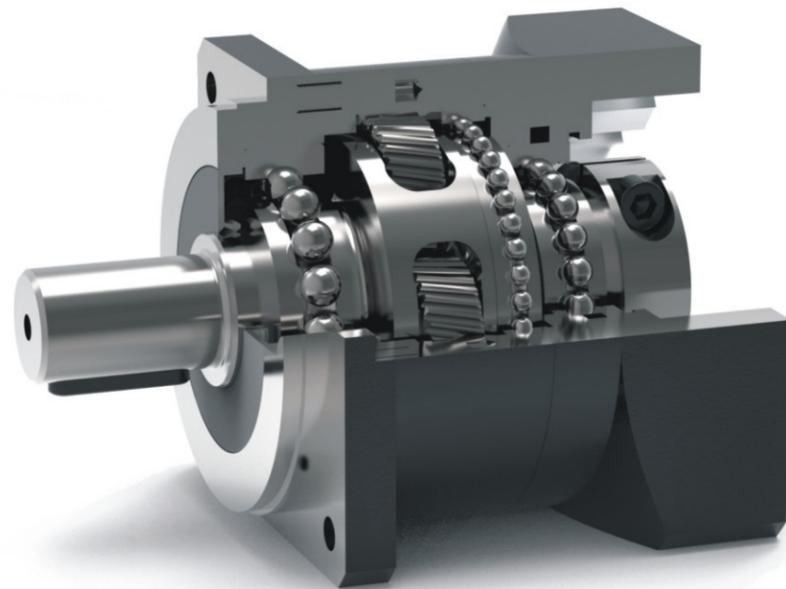
**Helical Gear System Technology**

Thanks to the tooth to tooth compact ratio more than 60%.The helical gearing and full needle bearing bring the benefits including higher torque capacity, smooth and lower noise running, decreased backlash and higher efficiency. Integrated housing engineering with super skiving gearing tooling craft.



**Super Gear Grinding and Heat Treatment Technology**

The global leading gear grinding technology brings the great improvement for the tooth profile optimization, with the high level carburizing and quenching heat treatment technology to reach high precision and gear harden performance.



KPLF-B Series Servo Planetary Gearbox

KPLF-B Series Servo Planetary Gearbox



**Master CageSpindle Planetary Carrier**

The patented Master CageSpindle integrated planetary carrier support planetary gearbox to increase constructional strength running stability and rigidity significantly. Synthetic grease lubrication allows maintenance free for gearbox whole service life.



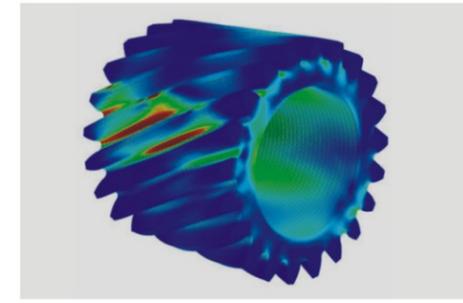
**Dynamic Balance Clamping and Sealing System**

For the gearbox input dynamic balance clamping design with perfect concentricity to decrease backlash and increase gearbox operation stability. The ultra sealing system offers grease leakage protection and support gearbox to reach IP65.



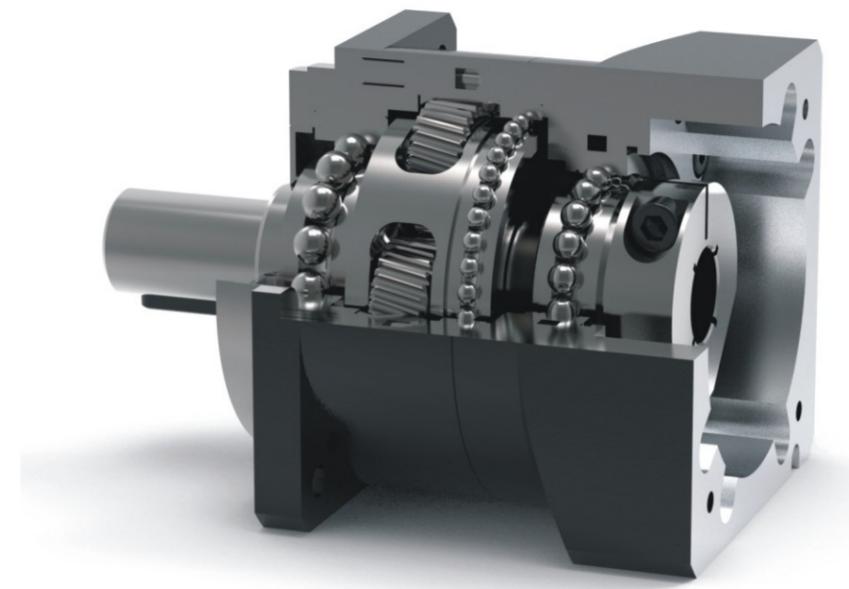
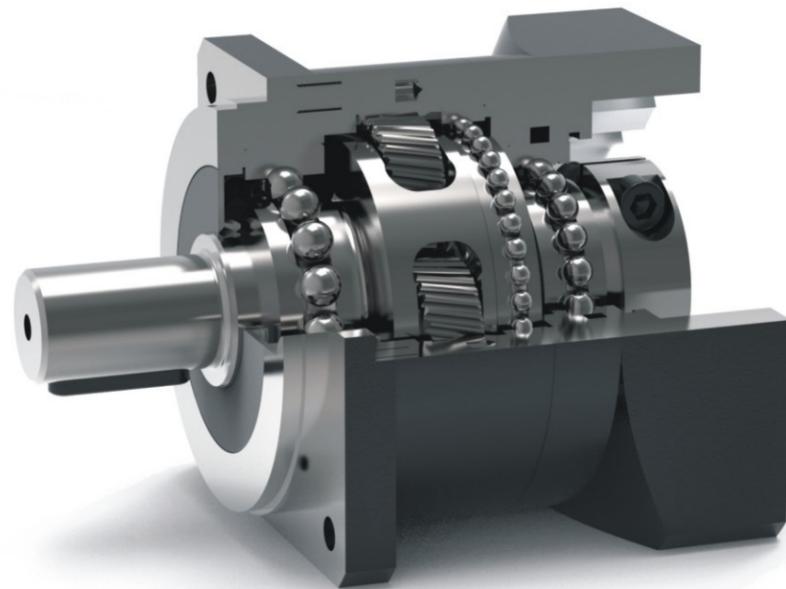
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**Dynamic Balance Clamping and Sealing System**

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KPLF-B050 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	20	21	21	20	19	17	15	15	
		in.lb	177	186	186	177	168	159	124	124	
Emergency Stop Torque	$T_{2Not}$	Nm	60	63	63	60	57	54	42	42	
		in.lb	531	558	558	531	504	478	372	372	
Maximum Acceleration Torque	$T_{2B}$	Nm	36	37.8	37.8	36	34.2	32.4	25.2	25.2	
		in.lb	319	335	335	319	303	287	223	223	
Maximum Torque	$T_{2a}$	Nm	40	42	42	40	38	36	28	28	
		in.lb	354	372	372	354	336	319	248	248	
Permitted Average Input Speed	$n_{1N}$	rpm	4000								
Maximum Input Speed	$n_{1Max}$	rpm	8000								
Mean No Load Running Torque	$T_{012}$	Nm	0.11	0.1	0.09	0.09	0.08	0.08	0.08	0.08	
		in.lb	0.97	0.89	0.80	0.80	0.71	0.71	0.71	0.71	
Standard Backlash P1	$j_1$	arcmin	≤ 6								
Reduced Low Backlash P0	$j_1$	arcmin	≤ 4								
Torsional Rigidity	$C_{D1}$	Nm/arcmin	2.7-3								
		in.lb/arcmin	23.90-26.55								
Maximum Radial Load	$F_{2AMax}$	N	770								
		lb <sub>r</sub>	173								
Maximum Axial Load	$F_{2OMax}$	N	380								
		lb <sub>r</sub>	85								
Max. Tilting Moment	$M_{2KMax}$	Nm	17.65								
		in.lb	156.21								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.031	0.022	0.019	0.017	0.017	0.017	0.017	0.017	
Operating Noise Level	$L_{PA}$	dB(A)	< 56								
Efficiency at Full loading	$\eta$	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	$L_{10}$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	$m$	kg	0.6								
		lb <sub>m</sub>	1.3								

KPLF-B050 2-stage

		2-stage																
Ratio	i		12	15	16	20	25	30	35	40	45	50	60	64	80	90	100	
Nominal Output Torque		Nm	20	20	21	21	21	21	21	21	21	21	20	17	17	15	15	
		in.lb	177	177	186	186	186	177	186	186	186	186	186	177	159	159	124	124
Emergency Stop Torque	$T_{2Not}$	Nm	60	60	63	63	63	60	63	63	63	63	60	54	54	42	42	
		in.lb	531	531	558	558	558	531	558	558	558	558	531	478	478	372	372	
Maximum Acceleration Torque	$T_{2B}$	Nm	36	36	37.8	37.8	37.8	36	37.8	37.8	37.8	37.8	36	32.4	32.4	25.2	25.2	
		in.lb	319	319	335	335	335	319	335	335	335	335	319	287	287	223	223	
Maximum Torque	$T_{2a}$	Nm	40	40	42	42	42	40	42	42	42	42	40	36	36	28	28	
		in.lb	354	354	372	372	372	354	372	372	372	372	354	319	319	248	248	
Permitted Average Input Speed	$n_{1N}$	rpm	4000															
Maximum Input Speed	$n_{1Max}$	rpm	8000															
Mean No Load Running Torque	$T_{012}$	Nm	0.1	0.1	0.1	0.1	0.1	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	
		in.lb	0.89	0.89	0.89	0.89	0.89	0.80	0.80	0.80	0.80	0.80	0.71	0.71	0.71	0.71	0.71	
Standard Backlash P1	$j_1$	arcmin	≤ 8															
Reduced Low Backlash P0	$j_1$	arcmin	≤ 6															
Torsional Rigidity	$C_{D1}$	Nm/arcmin	2.8-3															
		in.lb/arcmin	24.78-26.55															
Maximum Radial Load	$F_{2AMax}$	N	770															
		lb <sub>r</sub>	173															
Maximum Axial Load	$F_{2OMax}$	N	380															
		lb <sub>r</sub>	85															
Max. Tilting Moment	$M_{2KMax}$	Nm	17.65															
		in.lb	156.21															
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.029	0.027	0.022	0.019	0.017	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
Operating Noise Level	$L_{PA}$	dB(A)	< 56															
Efficiency at Full loading	$\eta$	%	95															
Operating Temperature		°C	-25 to +90															
		F	-13 to +194															
Lubrication			Synthetic Lubrication Grease															
Mouting Position			Any Directions															
Protection Class			IP 65															
Service lifetime	$L_{10}$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)															
Weight	$m$	kg	0.9															
		lb <sub>m</sub>	2															

KPLF-B050 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	20	21	21	20	19	17	15	15	
		in.lb	177	186	186	177	168	159	124	124	
Emergency Stop Torque	$T_{2Not}$	Nm	60	63	63	60	57	54	42	42	
		in.lb	531	558	558	531	504	478	372	372	
Maximum Acceleration Torque	$T_{2B}$	Nm	36	37.8	37.8	36	34.2	32.4	25.2	25.2	
		in.lb	319	335	335	319	303	287	223	223	
Maximum Torque	$T_{2a}$	Nm	40	42	42	40	38	36	28	28	
		in.lb	354	372	372	354	336	319	248	248	
Permitted Average Input Speed	$n_{1N}$	rpm	4000								
Maximum Input Speed	$n_{1Max}$	rpm	8000								
Mean No Load Running Torque	$T_{012}$	Nm	0.11	0.1	0.09	0.09	0.08	0.08	0.08	0.08	
		in.lb	0.97	0.89	0.80	0.80	0.71	0.71	0.71	0.71	
Standard Backlash P1	$j_1$	arcmin	≤ 6								
Reduced Low Backlash P0	$j_1$	arcmin	≤ 4								
Torsional Rigidity	$C_{D1}$	Nm/arcmin	2.7-3								
		in.lb/arcmin	23.90-26.55								
Maximum Radial Load	$F_{2AMax}$	N	770								
		lb <sub>r</sub>	173								
Maximum Axial Load	$F_{2OMax}$	N	380								
		lb <sub>r</sub>	85								
Max. Tilting Moment	$M_{2KMax}$	Nm	17.65								
		in.lb	156.21								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.031	0.022	0.019	0.017	0.017	0.017	0.017	0.017	
Operating Noise Level	$L_{PA}$	dB(A)	< 56								
Efficiency at Full loading	$\eta$	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	$L_{10}$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	$m$	kg	0.6								
		lb <sub>m</sub>	1.3								

KPLF-B050 2-stage

		2-stage																
Ratio	i		12	15	16	20	25	30	35	40	45	50	60	64	80	90	100	
Nominal Output Torque		Nm	20	20	21	21	21	21	21	21	21	21	20	17	17	15	15	
		in.lb	177	177	186	186	186	177	186	186	186	186	186	177	159	159	124	124
Emergency Stop Torque	$T_{2Not}$	Nm	60	60	63	63	63	60	63	63	63	63	60	54	54	42	42	
		in.lb	531	531	558	558	558	531	558	558	558	558	531	478	478	372	372	
Maximum Acceleration Torque	$T_{2B}$	Nm	36	36	37.8	37.8	37.8	36	37.8	37.8	37.8	37.8	36	32.4	32.4	25.2	25.2	
		in.lb	319	319	335	335	335	319	335	335	335	335	319	287	287	223	223	
Maximum Torque	$T_{2a}$	Nm	40	40	42	42	42	40	42	42	42	42	40	36	36	28	28	
		in.lb	354	354	372	372	372	354	372	372	372	372	354	319	319	248	248	
Permitted Average Input Speed	$n_{1N}$	rpm	4000															
Maximum Input Speed	$n_{1Max}$	rpm	8000															
Mean No Load Running Torque	$T_{012}$	Nm	0.1	0.1	0.1	0.1	0.1	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	
		in.lb	0.89	0.89	0.89	0.89	0.89	0.80	0.80	0.80	0.80	0.80	0.71	0.71	0.71	0.71	0.71	
Standard Backlash P1	$j_1$	arcmin	≤ 8															
Reduced Low Backlash P0	$j_1$	arcmin	≤ 6															
Torsional Rigidity	$C_{D1}$	Nm/arcmin	2.8-3															
		in.lb/arcmin	24.78-26.55															
Maximum Radial Load	$F_{2AMax}$	N	770															
		lb <sub>r</sub>	173															
Maximum Axial Load	$F_{2OMax}$	N	380															
		lb <sub>r</sub>	85															
Max. Tilting Moment	$M_{2KMax}$	Nm	17.65															
		in.lb	156.21															
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.029	0.027	0.022	0.019	0.017	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
Operating Noise Level	$L_{PA}$	dB(A)	< 56															
Efficiency at Full loading	$\eta$	%	95															
Operating Temperature		°C	-25 to +90															
		F	-13 to +194															
Lubrication			Synthetic Lubrication Grease															
Mouting Position			Any Directions															
Protection Class			IP 65															
Service lifetime	$L_{10}$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)															
Weight	$m$	kg	0.9															
		lb <sub>m</sub>	2															

KPLF-B070 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	56	52	52	48	48	43	43	43	
		in.lb	407	460	487	443	443	398	372	372	
Emergency Stop Torque	$T_{2Not}$	Nm	138	156	165	150	150	135	126	126	
		in.lb	1221	1381	1460	1328	1328	1195	1115	1115	
Maximum Acceleration Torque	$T_{2B}$	Nm	82.8	93.6	99	90	90	81	75.6	75.6	
		in.lb	733	828	876	797	797	717	669	669	
Maximum Torque	$T_{2a}$	Nm	92	104	110	100	100	90	84	84	
		in.lb	814	920	974	885	885	797	743	743	
Permitted Average Input Speed	$n_{1N}$	rpm	3000								
Maximum Input Speed	$n_{1Max}$	rpm	6000								
Mean No Load Running Torque	$T_{012}$	Nm	0.24	0.2	0.17	0.15	0.15	0.15	0.15	0.15	
		in.lb	2.12	1.77	1.50	1.33	1.33	1.33	1.33	1.33	
Standard Backlash P1	$j_i$	arcmin	≤ 5								
Reduced Low Backlash P0	$j_i$	arcmin	≤ 3								
Ultra Low Backlash PU	$j_i$	arcmin	≤ 1								
Torsional Rigidity	$C_{121}$	Nm/arcmin	6.5-7								
		in.lb/arcmin	57.53-61.95								
Maximum Radial Load	$F_{2AMax}$	N	1500								
		lb <sub>r</sub>	337								
Maximum Axial Load	$F_{2OMax}$	N	760								
		lb <sub>r</sub>	171								
Max. Tilting Moment	$M_{2KMax}$	Nm	28								
		in.lb	247.82								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.16	0.14	0.13	0.13	0.13	0.13	0.13	0.13	
Operating Noise Level	$L_{PA}$	dB(A)	< 58								
Efficiency at Full loading	$\eta$	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	$m$	kg	1.4								
		lb <sub>m</sub>	3.1								

KPLF-B070 2-stage

		2-stage																
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100
Nominal Output Torque		Nm	56	56	52	52	52	52	52	52	52	52	48	43	43	43	43	43
		in.lb	496	443	460	487	487	407	460	487	487	487	487	443	398	398	372	372
Emergency Stop Torque	$T_{2Not}$	Nm	168	150	156	165	165	138	156	165	165	165	150	135	135	126	126	126
		in.lb	1487	1328	1381	1460	1460	1221	1381	1460	1460	1460	1460	1328	1195	1195	1115	1115
Maximum Acceleration Torque	$T_{2B}$	Nm	100.8	90	93.6	99	99	82.8	93.6	99	99	99	90	81	81	75.6	75.6	75.6
		in.lb	892	797	828	876	876	733	828	876	876	876	876	797	717	717	669	669
Maximum Torque	$T_{2a}$	Nm	112	100	104	110	110	92	104	110	110	110	100	90	90	84	84	84
		in.lb	991	885	920	974	974	814	920	974	974	974	974	885	797	797	743	743
Permitted Average Input Speed	$n_{1N}$	rpm	3000															
Maximum Input Speed	$n_{1Max}$	rpm	6000															
Mean No Load Running Torque	$T_{012}$	Nm	0.2	0.17	0.2	0.17	0.17	0.15	0.2	0.15	0.15	0.15	0.15	0.17	0.15	0.15	0.15	0.15
		in.lb	1.77	1.50	1.77	1.50	1.50	1.33	1.77	1.33	1.33	1.33	1.33	1.50	1.33	1.33	1.33	1.33
Standard Backlash P1	$j_i$	arcmin	≤ 7															
Reduced Low Backlash P0	$j_i$	arcmin	≤ 5															
Ultra Low Backlash PU	$j_i$	arcmin	≤ 3															
Torsional Rigidity	$C_{121}$	Nm/arcmin	6.6-7															
		in.lb/arcmin	58.41-61.95															
Maximum Radial Load	$F_{2AMax}$	N	1500															
		lb <sub>r</sub>	337															
Maximum Axial Load	$F_{2OMax}$	N	760															
		lb <sub>r</sub>	171															
Max. Tilting Moment	$M_{2KMax}$	Nm	28															
		in.lb	247.82															
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.127	0.124	0.12	0.075	0.075	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.075	0.064	0.064	0.064
Operating Noise Level	$L_{PA}$	dB(A)	< 58															
Efficiency at Full loading	$\eta$	%	95															
Operating Temperature		°C	-25 to +90															
		F	-13 to +194															
Lubrication			Synthetic Lubrication Grease															
Mouting Position			Any Directions															
Protection Class			IP 65															
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)															
Weight	$m$	kg	1.6															
		lb <sub>m</sub>	3.5															

KPLF-B070 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	56	52	52	48	48	43	43	43	
		in.lb	407	460	487	443	443	398	372	372	
Emergency Stop Torque	$T_{2Not}$	Nm	138	156	165	150	150	135	126	126	
		in.lb	1221	1381	1460	1328	1328	1195	1115	1115	
Maximum Acceleration Torque	$T_{2B}$	Nm	82.8	93.6	99	90	90	81	75.6	75.6	
		in.lb	733	828	876	797	797	717	669	669	
Maximum Torque	$T_{2a}$	Nm	92	104	110	100	100	90	84	84	
		in.lb	814	920	974	885	885	797	743	743	
Permitted Average Input Speed	$n_{1N}$	rpm	3000								
Maximum Input Speed	$n_{1Max}$	rpm	6000								
Mean No Load Running Torque	$T_{012}$	Nm	0.24	0.2	0.17	0.15	0.15	0.15	0.15	0.15	
		in.lb	2.12	1.77	1.50	1.33	1.33	1.33	1.33	1.33	
Standard Backlash P1	$j_i$	arcmin	≤ 5								
Reduced Low Backlash P0	$j_i$	arcmin	≤ 3								
Ultra Low Backlash PU	$j_i$	arcmin	≤ 1								
Torsional Rigidity	$C_{121}$	Nm/arcmin	6.5-7								
		in.lb/arcmin	57.53-61.95								
Maximum Radial Load	$F_{2AMax}$	N	1500								
		lb <sub>r</sub>	337								
Maximum Axial Load	$F_{2OMax}$	N	760								
		lb <sub>r</sub>	171								
Max. Tilting Moment	$M_{2KMax}$	Nm	28								
		in.lb	247.82								
Mass Moment of Inertia	$j_i$	kgcm <sup>2</sup>	0.16	0.14	0.13	0.13	0.13	0.13	0.13	0.13	
Operating Noise Level	$L_{PA}$	dB(A)	< 58								
Efficiency at Full loading	$\eta$	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	$m$	kg	1.4								
		lb <sub>m</sub>	3.1								

KPLF-B070 2-stage

		2-stage																	
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100	
Nominal Output Torque		Nm	56	56	52	52	52	52	52	52	52	52	48	43	43	43	43	43	
		in.lb	496	443	460	487	487	407	460	487	487	487	487	443	398	398	372	372	
Emergency Stop Torque	$T_{2Not}$	Nm	168	150	156	165	165	138	156	165	165	165	150	135	135	126	126		
		in.lb	1487	1328	1381	1460	1460	1221	1381	1460	1460	1460	1460	1328	1195	1195	1115	1115	
Maximum Acceleration Torque	$T_{2B}$	Nm	100.8	90	93.6	99	99	82.8	93.6	99	99	99	90	81	81	75.6	75.6		
		in.lb	892	797	828	876	876	733	828	876	876	876	876	797	717	717	669	669	
Maximum Torque	$T_{2a}$	Nm	112	100	104	110	110	92	104	110	110	110	100	90	90	84	84		
		in.lb	991	885	920	974	974	814	920	974	974	974	974	885	797	797	743	743	
Permitted Average Input Speed	$n_{1N}$	rpm	3000																
Maximum Input Speed	$n_{1Max}$	rpm	6000																
Mean No Load Running Torque	$T_{012}$	Nm	0.2	0.17	0.2	0.17	0.17	0.15	0.2	0.15	0.15	0.15	0.15	0.17	0.15	0.15	0.15	0.15	
		in.lb	1.77	1.50	1.77	1.50	1.50	1.33	1.77	1.33	1.33	1.33	1.33	1.50	1.33	1.33	1.33	1.33	
Standard Backlash P1	$j_i$	arcmin	≤ 7																
Reduced Low Backlash P0	$j_i$	arcmin	≤ 5																
Ultra Low Backlash PU	$j_i$	arcmin	≤ 3																
Torsional Rigidity	$C_{121}$	Nm/arcmin	6.6-7																
		in.lb/arcmin	58.41-61.95																
Maximum Radial Load	$F_{2AMax}$	N	1500																
		lb <sub>r</sub>	337																
Maximum Axial Load	$F_{2OMax}$	N	760																
		lb <sub>r</sub>	171																
Max. Tilting Moment	$M_{2KMax}$	Nm	28																
		in.lb	247.82																
Mass Moment of Inertia	$j_i$	kgcm <sup>2</sup>	0.127	0.124	0.12	0.075	0.075	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.075	0.064	0.064	
Operating Noise Level	$L_{PA}$	dB(A)	< 58																
Efficiency at Full loading	$\eta$	%	95																
Operating Temperature		°C	-25 to +90																
		F	-13 to +194																
Lubrication			Synthetic Lubrication Grease																
Mouting Position			Any Directions																
Protection Class			IP 65																
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)																
Weight	$m$	kg	1.6																
		lb <sub>m</sub>	3.5																

KPLF-B090 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	160	158	158	150	145	142	142	142	
		in.lb	1106	1283	1372	1283	1195	1018	929	929	
Emergency Stop Torque	$T_{2Not}$	Nm	375	435	465	435	405	345	315	315	
		in.lb	3319	3850	4116	3850	3585	3053	2788	2788	
Maximum Acceleration Torque	$T_{2B}$	Nm	225	261	279	261	243	207	189	189	
		in.lb	1991	2310	2469	2310	2151	1832	1673	1673	
Maximum Torque	$T_{2a}$	Nm	250	290	310	290	270	230	210	210	
		in.lb	2213	2567	2744	2567	2390	2036	1859	1859	
Permitted Average Input Speed	$n_{1N}$	rpm	3000								
Maximum Input Speed	$n_{1Max}$	rpm	6000								
Mean No Load Running Torque	$T_{012}$	Nm	0.38	0.36	0.31	0.29	0.25	0.25	0.25	0.25	
		in.lb	3.36	3.19	2.74	2.57	2.21	2.21	2.21	2.21	
Standard Backlash P1	$j_i$	arcmin	≤ 5								
Reduced Low Backlash P0	$j_i$	arcmin	≤ 3								
Ultra Low Backlash PU	$j_i$	arcmin	≤ 1								
Torsional Rigidity	$C_{121}$	Nm/arcmin	12-14								
		in.lb/arcmin	106.21-123.91								
Maximum Radial Load	$F_{2AMax}$	N	3200								
		lb <sub>r</sub>	719								
Maximum Axial Load	$F_{2OMax}$	N	1600								
		lb <sub>r</sub>	360								
Max. Tilting Moment	$M_{2KMax}$	Nm	142.4								
		in.lb	1260.34								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.61	0.48	0.47	0.47	0.47	0.45	0.44	0.44	
Operating Noise Level	$L_{PA}$	dB(A)	< 60								
Efficiency at Full loading	$\eta$	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	$L_n$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	$m$	kg	3.3								
		lb <sub>m</sub>	7.3								

KPLF-B090 2-stage

		2-stage																	
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100	
Nominal Output Torque		Nm	160	160	158	158	158	158	158	158	158	158	158	150	142	142	142	142	
		in.lb	1106	1106	1283	1283	1372	1106	1283	1372	1372	1372	1372	1372	1283	1018	1018	929	929
Emergency Stop Torque	$T_{2Not}$	Nm	375	375	435	435	465	375	435	465	465	465	465	435	345	345	315	315	
		in.lb	3319	3319	3850	3850	4116	3319	3850	4116	4116	4116	4116	3850	3053	3053	2788	2788	
Maximum Acceleration Torque	$T_{2B}$	Nm	225	225	261	261	279	225	261	279	279	279	279	261	207	207	189	189	
		in.lb	1991	1991	2310	2310	2469	1991	2310	2469	2469	2469	2469	2310	1832	1832	1673	1673	
Maximum Torque	$T_{2a}$	Nm	250	250	290	290	310	250	290	310	310	310	310	290	230	230	210	210	
		in.lb	2213	2213	2567	2567	2744	2213	2567	2744	2744	2744	2744	2567	2036	2036	1859	1859	
Permitted Average Input Speed	$n_{1N}$	rpm	3000																
Maximum Input Speed	$n_{1Max}$	rpm	6000																
Mean No Load Running Torque	$T_{012}$	Nm	0.36	0.31	0.36	0.31	0.31	0.31	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
		in.lb	3.19	2.74	3.19	2.74	2.74	2.74	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21
Standard Backlash P1	$j_i$	arcmin	≤ 7																
Reduced Low Backlash P0	$j_i$	arcmin	≤ 5																
Ultra Low Backlash PU	$j_i$	arcmin	≤ 3																
Torsional Rigidity	$C_{121}$	Nm/arcmin	13-14																
		in.lb/arcmin	115.06-123.91																
Maximum Radial Load	$F_{2AMax}$	N	3200																
		lb <sub>r</sub>	719																
Maximum Axial Load	$F_{2OMax}$	N	1600																
		lb <sub>r</sub>	360																
Max. Tilting Moment	$M_{2KMax}$	Nm	142.4																
		in.lb	1260.34																
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.44	0.44	0.43	0.44	0.44	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	
Operating Noise Level	$L_{PA}$	dB(A)	< 60																
Efficiency at Full loading	$\eta$	%	95																
Operating Temperature		°C	-25 to +90																
		F	-13 to +194																
Lubrication			Synthetic Lubrication Grease																
Mouting Position			Any Directions																
Protection Class			IP 65																
Service lifetime	$L_n$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)																
Weight	$m$	kg	4.5																
		lb <sub>m</sub>	9.9																

KPLF-B090 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	160	158	158	150	145	142	142	142	
		in.lb	1106	1283	1372	1283	1195	1018	929	929	
Emergency Stop Torque	$T_{2Not}$	Nm	375	435	465	435	405	345	315	315	
		in.lb	3319	3850	4116	3850	3585	3053	2788	2788	
Maximum Acceleration Torque	$T_{2B}$	Nm	225	261	279	261	243	207	189	189	
		in.lb	1991	2310	2469	2310	2151	1832	1673	1673	
Maximum Torque	$T_{2a}$	Nm	250	290	310	290	270	230	210	210	
		in.lb	2213	2567	2744	2567	2390	2036	1859	1859	
Permitted Average Input Speed	$n_{1N}$	rpm	3000								
Maximum Input Speed	$n_{1Max}$	rpm	6000								
Mean No Load Running Torque	$T_{012}$	Nm	0.38	0.36	0.31	0.29	0.25	0.25	0.25	0.25	
		in.lb	3.36	3.19	2.74	2.57	2.21	2.21	2.21	2.21	
Standard Backlash P1	$j_i$	arcmin	≤ 5								
Reduced Low Backlash P0	$j_i$	arcmin	≤ 3								
Ultra Low Backlash PU	$j_i$	arcmin	≤ 1								
Torsional Rigidity	$C_{121}$	Nm/arcmin	12-14								
		in.lb/arcmin	106.21-123.91								
Maximum Radial Load	$F_{2AMax}$	N	3200								
		lb <sub>r</sub>	719								
Maximum Axial Load	$F_{2OMax}$	N	1600								
		lb <sub>r</sub>	360								
Max. Tilting Moment	$M_{2KMax}$	Nm	142.4								
		in.lb	1260.34								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.61	0.48	0.47	0.47	0.47	0.45	0.44	0.44	
Operating Noise Level	$L_{PA}$	dB(A)	< 60								
Efficiency at Full loading	$\eta$	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	$L_n$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	$m$	kg	3.3								
		lb <sub>m</sub>	7.3								

KPLF-B090 2-stage

		2-stage																	
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100	
Nominal Output Torque		Nm	160	160	158	158	158	158	158	158	158	158	158	150	142	142	142	142	
		in.lb	1106	1106	1283	1283	1372	1106	1283	1372	1372	1372	1372	1372	1283	1018	1018	929	929
Emergency Stop Torque	$T_{2Not}$	Nm	375	375	435	435	465	375	435	465	465	465	465	435	345	345	315	315	
		in.lb	3319	3319	3850	3850	4116	3319	3850	4116	4116	4116	4116	3850	3053	3053	2788	2788	
Maximum Acceleration Torque	$T_{2B}$	Nm	225	225	261	261	279	225	261	279	279	279	279	261	207	207	189	189	
		in.lb	1991	1991	2310	2310	2469	1991	2310	2469	2469	2469	2469	2310	1832	1832	1673	1673	
Maximum Torque	$T_{2a}$	Nm	250	250	290	290	310	250	290	310	310	310	310	290	230	230	210	210	
		in.lb	2213	2213	2567	2567	2744	2213	2567	2744	2744	2744	2744	2567	2036	2036	1859	1859	
Permitted Average Input Speed	$n_{1N}$	rpm	3000																
Maximum Input Speed	$n_{1Max}$	rpm	6000																
Mean No Load Running Torque	$T_{012}$	Nm	0.36	0.31	0.36	0.31	0.31	0.31	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
		in.lb	3.19	2.74	3.19	2.74	2.74	2.74	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21
Standard Backlash P1	$j_i$	arcmin	≤ 7																
Reduced Low Backlash P0	$j_i$	arcmin	≤ 5																
Ultra Low Backlash PU	$j_i$	arcmin	≤ 3																
Torsional Rigidity	$C_{121}$	Nm/arcmin	13-14																
		in.lb/arcmin	115.06-123.91																
Maximum Radial Load	$F_{2AMax}$	N	3200																
		lb <sub>r</sub>	719																
Maximum Axial Load	$F_{2OMax}$	N	1600																
		lb <sub>r</sub>	360																
Max. Tilting Moment	$M_{2KMax}$	Nm	142.4																
		in.lb	1260.34																
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	0.44	0.44	0.43	0.44	0.44	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	
Operating Noise Level	$L_{PA}$	dB(A)	< 60																
Efficiency at Full loading	$\eta$	%	95																
Operating Temperature		°C	-25 to +90																
		F	-13 to +194																
Lubrication			Synthetic Lubrication Grease																
Mouting Position			Any Directions																
Protection Class			IP 65																
Service lifetime	$L_n$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)																
Weight	$m$	kg	4.5																
		lb <sub>m</sub>	9.9																

KPLF-B120 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	335	330	330	310	305	295	295	295	
		in.lb	1859	2655	2832	2655	2567	2257	1947	1947	
Emergency Stop Torque	$T_{2Not}$	Nm	630	900	960	900	870	765	660	660	
		in.lb	5576	7966	8497	7966	7700	6771	5841	5841	
Maximum Acceleration Torque	$T_{2B}$	Nm	378	540	576	540	522	459	396	396	
		in.lb	3346	4779	5098	4779	4620	4062	3505	3505	
Maximum Torque	$T_{2a}$	Nm	420	600	640	600	580	510	440	440	
		in.lb	3717	5310	5664	5310	5133	4514	3894	3894	
Permitted Average Input Speed	$n_{1N}$	rpm	3000								
Maximum Input Speed	$n_{1Max}$	rpm	6000								
Mean No Load Running Torque	$T_{012}$	Nm	1	0.95	0.85	0.81	0.78	0.78	0.78	0.78	
		in.lb	8.85	8.41	7.52	7.17	6.90	6.90	6.90	6.90	
Standard Backlash P1	$j_i$	arcmin	≤ 5								
Reduced Low Backlash P0	$j_i$	arcmin	≤ 3								
Ultra Low Backlash PU	$j_i$	arcmin	≤ 1								
Torsional Rigidity	$C_{121}$	Nm/arcmin	22-26								
		in.lb/arcmin	194.72-230.12								
Maximum Radial Load	$F_{2AMax}$	N	6700								
		lb <sub>r</sub>	1506								
Maximum Axial Load	$F_{2OMax}$	N	3300								
		lb <sub>r</sub>	742								
Max. Tilting Moment	$M_{2KMax}$	Nm	406.2								
		in.lb	3595.15								
Mass Moment of Inertia	$j_i$	kgcm <sup>2</sup>	3.25	2.74	2.71	2.62	2.62	2.62	2.62	2.57	
Operating Noise Level	$L_{PA}$	dB(A)	< 63								
Efficiency at Full loading	$\eta$	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	$m$	kg	5.5								
		lb <sub>m</sub>	12.1								

KPLF-B120 2-stage

		2-stage																	
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100	
Nominal Output Torque		Nm	335	335	330	330	330	330	330	330	330	330	330	310	295	295	295	295	
		in.lb	2744	2744	2655	2655	2832	1859	2699	2832	2832	2832	2832	2655	2257	2257	1947	1947	
Emergency Stop Torque	$T_{2Not}$	Nm	930	930	900	900	960	630	915	960	960	960	960	900	765	765	660	660	
		in.lb	8231	8231	7966	7966	8497	5576	8098	8497	8497	8497	8497	7966	6771	6771	5841	5841	
Maximum Acceleration Torque	$T_{2B}$	Nm	558	558	540	540	576	378	549	576	576	576	576	540	459	459	396	396	
		in.lb	4939	4939	4779	4779	5098	3346	4859	5098	5098	5098	5098	4779	4062	4062	3505	3505	
Maximum Torque	$T_{2a}$	Nm	620	620	600	600	640	420	610	640	640	640	640	600	510	510	440	440	
		in.lb	5487	5487	5310	5310	5664	3717	5399	5664	5664	5664	5664	5310	4514	4514	3894	3894	
Permitted Average Input Speed	$n_{1N}$	rpm	3000																
Maximum Input Speed	$n_{1Max}$	rpm	6000																
Mean No Load Running Torque	$T_{012}$	Nm	0.95	0.85	0.95	0.85	0.85	0.81	0.78	0.78	0.78	0.78	0.78	0.81	0.78	0.78	0.78	0.78	
		in.lb	8.41	7.52	8.41	7.52	7.52	7.17	6.90	6.90	6.90	6.90	6.90	7.17	6.90	6.90	6.90	6.90	
Standard Backlash P1	$j_i$	arcmin	≤ 7																
Reduced Low Backlash P0	$j_i$	arcmin	≤ 5																
Ultra Low Backlash PU	$j_i$	arcmin	≤ 3																
Torsional Rigidity	$C_{121}$	Nm/arcmin	23-26																
		in.lb/arcmin	203.57-230.12																
Maximum Radial Load	$F_{2AMax}$	N	6700																
		lb <sub>r</sub>	1506																
Maximum Axial Load	$F_{2OMax}$	N	3300																
		lb <sub>r</sub>	742																
Max. Tilting Moment	$M_{2KMax}$	Nm	406.2																
		in.lb	3595.15																
Mass Moment of Inertia	$j_i$	kgcm <sup>2</sup>	2.56	2.58	1.75	1.5	1.49	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.5	1.3	1.3	
Operating Noise Level	$L_{PA}$	dB(A)	< 63																
Efficiency at Full loading	$\eta$	%	95																
Operating Temperature		°C	-25 to +90																
		F	-13 to +194																
Lubrication			Synthetic Lubrication Grease																
Mouting Position			Any Directions																
Protection Class			IP 65																
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)																
Weight	$m$	kg	8																
		lb <sub>m</sub>	17.6																

KPLF-B120 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	335	330	330	310	305	295	295	295	
		in.lb	1859	2655	2832	2655	2567	2257	1947	1947	
Emergency Stop Torque	$T_{2Not}$	Nm	630	900	960	900	870	765	660	660	
		in.lb	5576	7966	8497	7966	7700	6771	5841	5841	
Maximum Acceleration Torque	$T_{2B}$	Nm	378	540	576	540	522	459	396	396	
		in.lb	3346	4779	5098	4779	4620	4062	3505	3505	
Maximum Torque	$T_{2a}$	Nm	420	600	640	600	580	510	440	440	
		in.lb	3717	5310	5664	5310	5133	4514	3894	3894	
Permitted Average Input Speed	$n_{1N}$	rpm	3000								
Maximum Input Speed	$n_{1Max}$	rpm	6000								
Mean No Load Running Torque	$T_{012}$	Nm	1	0.95	0.85	0.81	0.78	0.78	0.78	0.78	
		in.lb	8.85	8.41	7.52	7.17	6.90	6.90	6.90	6.90	
Standard Backlash P1	$j_i$	arcmin	≤ 5								
Reduced Low Backlash P0	$j_i$	arcmin	≤ 3								
Ultra Low Backlash PU	$j_i$	arcmin	≤ 1								
Torsional Rigidity	$C_{121}$	Nm/arcmin	22-26								
		in.lb/arcmin	194.72-230.12								
Maximum Radial Load	$F_{2AMax}$	N	6700								
		lb <sub>r</sub>	1506								
Maximum Axial Load	$F_{2OMax}$	N	3300								
		lb <sub>a</sub>	742								
Max. Tilting Moment	$M_{2KMax}$	Nm	406.2								
		in.lb	3595.15								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	3.25	2.74	2.71	2.62	2.62	2.62	2.62	2.57	
Operating Noise Level	$L_{PA}$	dB(A)	< 63								
Efficiency at Full loading	$\eta$	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	$m$	kg	5.5								
		lb <sub>m</sub>	12.1								

KPLF-B120 2-stage

		2-stage																	
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100	
Nominal Output Torque		Nm	335	335	330	330	330	330	330	330	330	330	330	310	295	295	295	295	
		in.lb	2744	2744	2655	2655	2832	1859	2699	2832	2832	2832	2832	2655	2257	2257	1947	1947	
Emergency Stop Torque	$T_{2Not}$	Nm	930	930	900	900	960	630	915	960	960	960	960	900	765	765	660	660	
		in.lb	8231	8231	7966	7966	8497	5576	8098	8497	8497	8497	8497	7966	6771	6771	5841	5841	
Maximum Acceleration Torque	$T_{2B}$	Nm	558	558	540	540	576	378	549	576	576	576	576	540	459	459	396	396	
		in.lb	4939	4939	4779	4779	5098	3346	4859	5098	5098	5098	5098	4779	4062	4062	3505	3505	
Maximum Torque	$T_{2a}$	Nm	620	620	600	600	640	420	610	640	640	640	640	600	510	510	440	440	
		in.lb	5487	5487	5310	5310	5664	3717	5399	5664	5664	5664	5664	5310	4514	4514	3894	3894	
Permitted Average Input Speed	$n_{1N}$	rpm	3000																
Maximum Input Speed	$n_{1Max}$	rpm	6000																
Mean No Load Running Torque	$T_{012}$	Nm	0.95	0.85	0.95	0.85	0.85	0.81	0.78	0.78	0.78	0.78	0.78	0.81	0.78	0.78	0.78	0.78	
		in.lb	8.41	7.52	8.41	7.52	7.52	7.17	6.90	6.90	6.90	6.90	6.90	7.17	6.90	6.90	6.90	6.90	
Standard Backlash P1	$j_i$	arcmin	≤ 7																
Reduced Low Backlash P0	$j_i$	arcmin	≤ 5																
Ultra Low Backlash PU	$j_i$	arcmin	≤ 3																
Torsional Rigidity	$C_{121}$	Nm/arcmin	23-26																
		in.lb/arcmin	203.57-230.12																
Maximum Radial Load	$F_{2AMax}$	N	6700																
		lb <sub>r</sub>	1506																
Maximum Axial Load	$F_{2OMax}$	N	3300																
		lb <sub>a</sub>	742																
Max. Tilting Moment	$M_{2KMax}$	Nm	406.2																
		in.lb	3595.15																
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	2.56	2.58	1.75	1.5	1.49	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.5	1.3	1.3	1.3	
Operating Noise Level	$L_{PA}$	dB(A)	< 63																
Efficiency at Full loading	$\eta$	%	95																
Operating Temperature		°C	-25 to +90																
		F	-13 to +194																
Lubrication			Synthetic Lubrication Grease																
Mouting Position			Any Directions																
Protection Class			IP 65																
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)																
Weight	$m$	kg	8																
		lb <sub>m</sub>	17.6																

KPLF-B160 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	630	620	620	600	575	550	550	550	
		in.lb	3983	4868	5753	5399	4779	4514	3894	3894	
Emergency Stop Torque	$T_{2Not}$	Nm	1350	1650	1950	1830	1620	1530	1320	1320	
		in.lb	11948	14604	17259	16197	14338	13542	11683	11683	
Maximum Acceleration Torque	$T_{2a}$	Nm	810	990	1170	1098	972	918	792	792	
		in.lb	7169	8762	10355	9718	8603	8125	7010	7010	
Maximum Torque	$T_{2a}$	Nm	900	1100	1300	1220	1080	1020	880	880	
		in.lb	7966	9736	11506	10798	9559	9028	7789	7789	
Permitted Average Input Speed	$n_{1N}$	rpm	3000								
Maximum Input Speed	$n_{1Max}$	rpm	6000								
Mean No Load Running Torque	$T_{012}$	Nm	2.55	2.45	2.3	2.2	2.2	2.2	2.2	2.2	
		in.lb	22.57	21.68	20.36	19.47	19.47	19.47	19.47	19.47	
Standard Backlash P1	$j_i$	arcmin	≤ 5								
Reduced Low Backlash P0	$j_i$	arcmin	≤ 3								
Ultra Low Backlash PU	$j_i$	arcmin	≤ 1								
Torsional Rigidity	$C_{121}$	Nm/arcmin	45-52								
		in.lb/arcmin	398.28-460.24								
Maximum Radial Load	$F_{2AMax}$	N	9600								
		lb <sub>r</sub>	2158								
Maximum Axial Load	$F_{2OMax}$	N	4800								
		lb <sub>r</sub>	1079								
Max. Tilting Moment	$M_{2KMax}$	Nm	830.4								
		in.lb	7349.62								
Mass Moment of Inertia	$j_i$	kgcm <sup>2</sup>	12.31	7.54	7.42	7.25	7.25	7.14	7.14	7.14	
Operating Noise Level	$L_{PA}$	dB(A)	< 65								
Efficiency at Full loading	$\eta$	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	$m$	kg	20								
		lb <sub>m</sub>	44.1								

KPLF-B160 2-stage

		2-stage																	
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100	
Nominal Output Torque		Nm	630	630	620	620	620	620	620	620	620	620	620	600	550	550	550	550	
		in.lb	4425	4425	4868	5753	5753	3983	4868	5753	4868	5753	5753	5399	4514	4514	3894	3894	
Emergency Stop Torque	$T_{2Not}$	Nm	1500	1500	1650	1950	1950	1350	1650	1950	1650	1950	1950	1830	1530	1530	1320	1320	
		in.lb	13276	13276	14604	17259	17259	11948	14604	17259	14604	17259	16197	13542	13542	11683	11683		
Maximum Acceleration Torque	$T_{2a}$	Nm	900	900	990	1170	1170	810	990	1170	990	1170	1170	1098	918	918	792	792	
		in.lb	7966	7966	8762	10355	10355	7169	8762	10355	8762	10355	10355	9718	8125	8125	7010	7010	
Maximum Torque	$T_{2a}$	Nm	1000	1000	1100	1300	1300	900	1100	1300	1100	1300	1300	1220	1020	1020	880	880	
		in.lb	8851	8851	9736	11506	11506	7966	9736	11506	9736	11506	11506	10798	9028	9028	7789	7789	
Permitted Average Input Speed	$n_{1N}$	rpm	3000																
Maximum Input Speed	$n_{1Max}$	rpm	6000																
Mean No Load Running Torque	$T_{012}$	Nm	2.45	2.3	2.45	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	
		in.lb	21.68	20.36	21.68	20.36	20.36	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	
Standard Backlash P1	$j_i$	arcmin	≤ 7																
Reduced Low Backlash P0	$j_i$	arcmin	≤ 5																
Ultra Low Backlash PU	$j_i$	arcmin	≤ 3																
Torsional Rigidity	$C_{121}$	Nm/arcmin	45-52																
		in.lb/arcmin	398.28-460.24																
Maximum Radial Load	$F_{2AMax}$	N	9600																
		lb <sub>r</sub>	2158																
Maximum Axial Load	$F_{2OMax}$	N	4800																
		lb <sub>r</sub>	1079																
Max. Tilting Moment	$M_{2KMax}$	Nm	830.4																
		in.lb	7349.62																
Mass Moment of Inertia	$j_i$	kgcm <sup>2</sup>	12.35	12.35	7.47	6.65	5.81	6.34	6.34	5.36	4.08	5.36	4.08	7.40	7.50	7.40	7.40	7.40	
Operating Noise Level	$L_{PA}$	dB(A)	< 65																
Efficiency at Full loading	$\eta$	%	95																
Operating Temperature		°C	-25 to +90																
		F	-13 to +194																
Lubrication			Synthetic Lubrication Grease																
Mouting Position			Any Directions																
Protection Class			IP 65																
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)																
Weight	$m$	kg	25																
		lb <sub>m</sub>	55.1																

KPLF-B160 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	630	620	620	600	575	550	550	550	
		in.lb	3983	4868	5753	5399	4779	4514	3894	3894	
Emergency Stop Torque	$T_{2Not}$	Nm	1350	1650	1950	1830	1620	1530	1320	1320	
		in.lb	11948	14604	17259	16197	14338	13542	11683	11683	
Maximum Acceleration Torque	$T_{2a}$	Nm	810	990	1170	1098	972	918	792	792	
		in.lb	7169	8762	10355	9718	8603	8125	7010	7010	
Maximum Torque	$T_{2a}$	Nm	900	1100	1300	1220	1080	1020	880	880	
		in.lb	7966	9736	11506	10798	9559	9028	7789	7789	
Permitted Average Input Speed	$n_{1N}$	rpm	3000								
Maximum Input Speed	$n_{1Max}$	rpm	6000								
Mean No Load Running Torque	$T_{012}$	Nm	2.55	2.45	2.3	2.2	2.2	2.2	2.2	2.2	
		in.lb	22.57	21.68	20.36	19.47	19.47	19.47	19.47	19.47	
Standard Backlash P1	$j_i$	arcmin	≤ 5								
Reduced Low Backlash P0	$j_i$	arcmin	≤ 3								
Ultra Low Backlash PU	$j_i$	arcmin	≤ 1								
Torsional Rigidity	$C_{121}$	Nm/arcmin	45-52								
		in.lb/arcmin	398.28-460.24								
Maximum Radial Load	$F_{2AMax}$	N	9600								
		lb <sub>r</sub>	2158								
Maximum Axial Load	$F_{2OMax}$	N	4800								
		lb <sub>r</sub>	1079								
Max. Tilting Moment	$M_{2KMax}$	Nm	830.4								
		in.lb	7349.62								
Mass Moment of Inertia	$j_i$	kgcm <sup>2</sup>	12.31	7.54	7.42	7.25	7.25	7.14	7.14	7.14	
Operating Noise Level	$L_{PA}$	dB(A)	< 65								
Efficiency at Full loading	$\eta$	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	$m$	kg	20								
		lb <sub>m</sub>	44.1								

KPLF-B160 2-stage

		2-stage																		
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100		
Nominal Output Torque		Nm	630	630	620	620	620	620	620	620	620	620	620	600	550	550	550	550		
		in.lb	4425	4425	4868	5753	5753	3983	4868	5753	4868	5753	5753	5399	4514	4514	3894	3894		
Emergency Stop Torque	$T_{2Not}$	Nm	1500	1500	1650	1950	1950	1350	1650	1950	1650	1950	1950	1830	1530	1530	1320	1320		
		in.lb	13276	13276	14604	17259	17259	11948	14604	17259	14604	17259	16197	13542	13542	11683	11683			
Maximum Acceleration Torque	$T_{2a}$	Nm	900	900	990	1170	1170	810	990	1170	990	1170	1170	1098	918	918	792	792		
		in.lb	7966	7966	8762	10355	10355	7169	8762	10355	8762	10355	10355	9718	8125	8125	7010	7010		
Maximum Torque	$T_{2a}$	Nm	1000	1000	1100	1300	1300	900	1100	1300	1100	1300	1300	1220	1020	1020	880	880		
		in.lb	8851	8851	9736	11506	11506	7966	9736	11506	9736	11506	11506	10798	9028	9028	7789	7789		
Permitted Average Input Speed	$n_{1N}$	rpm	3000																	
Maximum Input Speed	$n_{1Max}$	rpm	6000																	
Mean No Load Running Torque	$T_{012}$	Nm	2.45	2.3	2.45	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2		
		in.lb	21.68	20.36	21.68	20.36	20.36	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47		
Standard Backlash P1	$j_i$	arcmin	≤ 7																	
Reduced Low Backlash P0	$j_i$	arcmin	≤ 5																	
Ultra Low Backlash PU	$j_i$	arcmin	≤ 3																	
Torsional Rigidity	$C_{121}$	Nm/arcmin	45-52																	
		in.lb/arcmin	398.28-460.24																	
Maximum Radial Load	$F_{2AMax}$	N	9600																	
		lb <sub>r</sub>	2158																	
Maximum Axial Load	$F_{2OMax}$	N	4800																	
		lb <sub>r</sub>	1079																	
Max. Tilting Moment	$M_{2KMax}$	Nm	830.4																	
		in.lb	7349.62																	
Mass Moment of Inertia	$j_i$	kgcm <sup>2</sup>	12.35	12.35	7.47	6.65	5.81	6.34	6.34	5.36	4.08	5.36	4.08	7.40	7.50	7.40	7.40			
Operating Noise Level	$L_{PA}$	dB(A)	< 65																	
Efficiency at Full loading	$\eta$	%	95																	
Operating Temperature		°C	-25 to +90																	
		F	-13 to +194																	
Lubrication			Synthetic Lubrication Grease																	
Mouting Position			Any Directions																	
Protection Class			IP 65																	
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)																	
Weight	$m$	kg	25																	
		lb <sub>m</sub>	55.1																	

KPLF-B205 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	1220	1170	1170	1100	1100	1060	1060	1060	
		in.lb	5753	11063	10621	8851	8851	8851	8054	8054	
Emergency Stop Torque	$T_{2Not}$	Nm	1950	3750	3600	3000	3000	3000	2730	2730	
		in.lb	17259	33190	31863	26552	26552	26552	24162	24162	
Maximum Acceleration Torque	$T_{2a}$	Nm	1170	2250	2160	1800	1800	1800	1638	1638	
		in.lb	10355	19914	19118	15931	15931	15931	14497	14497	
Maximum Torque	$T_{2a}$	Nm	1300	2500	2400	2000	2000	2000	1820	1820	
		in.lb	11506	22127	21242	17701	17701	17701	16108	16108	
Permitted Average Input Speed	$n_{1N}$	rpm	3000								
Maximum Input Speed	$n_{1Max}$	rpm	4000								
Mean No Load Running Torque	$T_{012}$	Nm	3.5	3.3	3.15	3	3	3	3	3	
		in.lb	30.98	29.21	27.88	26.55	26.55	26.55	26.55	26.55	
Standard Backlash P1	$j_1$	arcmin	≤ 5								
Reduced Low Backlash P0	$j_1$	arcmin	≤ 3								
Ultra Low Backlash PU	$j_1$	arcmin	≤ 1								
Torsional Rigidity	$C_{121}$	Nm/arcmin	120-138								
		in.lb/arcmin	1062.08-1221.40								
Maximum Radial Load	$F_{2AMax}$	N	14000								
		lb <sub>r</sub>	3147								
Maximum Axial Load	$F_{2OMax}$	N	7000								
		lb <sub>r</sub>	1574								
Max. Tilting Moment	$M_{2KMax}$	Nm	1386								
		in.lb	12267.07								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	28.98	23.67	22.75	22.48	22.48	22.59	22.59	22.55	
Operating Noise Level	$L_{PA}$	dB(A)	< 67								
Efficiency at Full loading	$\eta$	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	$m$	kg	31								
		lb <sub>m</sub>	68.3								

KPLF-B205 2-stage

		2-stage																	
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100	
Nominal Output Torque		Nm	1220	1220	1170	1170	1170	1170	1170	1170	1170	1170	1170	1100	1060	1060	1060	1060	
		in.lb	5753	7523	11063	10621	10621	5753	11063	10621	10621	10621	10621	10621	8851	8851	8851	8054	8054
Emergency Stop Torque	$T_{2Not}$	Nm	1950	2550	3750	3600	3600	1950	3750	3600	3600	3600	3600	3000	3000	3000	2730	2730	
		in.lb	17259	22569	33190	31863	31863	17259	33190	31863	31863	31863	31863	26552	26552	26552	24162	24162	
Maximum Acceleration Torque	$T_{2a}$	Nm	1170	1530	2250	2160	2160	1170	2250	2160	2160	2160	2160	1800	1800	1800	1638	1638	
		in.lb	10355	13542	19914	19118	19118	10355	19914	19118	19118	19118	19118	15931	15931	15931	14497	14497	
Maximum Torque	$T_{2a}$	Nm	1300	1700	2500	2400	2400	1300	2500	2400	2400	2400	2400	2000	2000	2000	1820	1820	
		in.lb	11506	15046	22127	21242	21242	11506	22127	21242	21242	21242	21242	17701	17701	17701	16108	16108	
Permitted Average Input Speed	$n_{1N}$	rpm	3000																
Maximum Input Speed	$n_{1Max}$	rpm	4000																
Mean No Load Running Torque	$T_{012}$	Nm	2.45	2.3	2.45	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	
		in.lb	21.68	20.36	21.68	20.36	20.36	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	
Standard Backlash P1	$j_1$	arcmin	≤ 7																
Reduced Low Backlash P0	$j_1$	arcmin	≤ 5																
Ultra Low Backlash PU	$j_1$	arcmin	≤ 3																
Torsional Rigidity	$C_{121}$	Nm/arcmin	125-138																
		in.lb/arcmin	1106.34-1221.40																
Maximum Radial Load	$F_{2AMax}$	N	14000																
		lb <sub>r</sub>	3147																
Maximum Axial Load	$F_{2OMax}$	N	7000																
		lb <sub>r</sub>	1574																
Max. Tilting Moment	$M_{2KMax}$	Nm	1386																
		in.lb	12267.07																
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	12.35	12.30	7.54	7.42	7.54	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	
Operating Noise Level	$L_{PA}$	dB(A)	< 67																
Efficiency at Full loading	$\eta$	%	95																
Operating Temperature		°C	-25 to +90																
		F	-13 to +194																
Lubrication			Synthetic Lubrication Grease																
Mouting Position			Any Directions																
Protection Class			IP 65																
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)																
Weight	$m$	kg	39																
		lb <sub>m</sub>	86																

KPLF-B205 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	1220	1170	1170	1100	1100	1060	1060	1060	
		in.lb	5753	11063	10621	8851	8851	8851	8054	8054	
Emergency Stop Torque	$T_{2Not}$	Nm	1950	3750	3600	3000	3000	3000	2730	2730	
		in.lb	17259	33190	31863	26552	26552	26552	24162	24162	
Maximum Acceleration Torque	$T_{2B}$	Nm	1170	2250	2160	1800	1800	1800	1638	1638	
		in.lb	10355	19914	19118	15931	15931	15931	14497	14497	
Maximum Torque	$T_{2a}$	Nm	1300	2500	2400	2000	2000	2000	1820	1820	
		in.lb	11506	22127	21242	17701	17701	17701	16108	16108	
Permitted Average Input Speed	$n_{1N}$	rpm	3000								
Maximum Input Speed	$n_{1Max}$	rpm	4000								
Mean No Load Running Torque	$T_{012}$	Nm	3.5	3.3	3.15	3	3	3	3	3	
		in.lb	30.98	29.21	27.88	26.55	26.55	26.55	26.55	26.55	
Standard Backlash P1	$j_1$	arcmin	≤ 5								
Reduced Low Backlash P0	$j_1$	arcmin	≤ 3								
Ultra Low Backlash PU	$j_1$	arcmin	≤ 1								
Torsional Rigidity	$C_{121}$	Nm/arcmin	120-138								
		in.lb/arcmin	1062.08-1221.40								
Maximum Radial Load	$F_{2AMax}$	N	14000								
		lb <sub>r</sub>	3147								
Maximum Axial Load	$F_{2OMax}$	N	7000								
		lb <sub>r</sub>	1574								
Max. Tilting Moment	$M_{2KMax}$	Nm	1386								
		in.lb	12267.07								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	28.98	23.67	22.75	22.48	22.48	22.59	22.59	22.55	
Operating Noise Level	$L_{PA}$	dB(A)	< 67								
Efficiency at Full loading	$\eta$	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	$m$	kg	31								
		lb <sub>m</sub>	68.3								

KPLF-B205 2-stage

		2-stage																		
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100		
Nominal Output Torque		Nm	1220	1220	1170	1170	1170	1170	1170	1170	1170	1170	1170	1100	1060	1060	1060	1060		
		in.lb	5753	7523	11063	10621	10621	5753	11063	10621	10621	10621	10621	10621	8851	8851	8851	8054	8054	
Emergency Stop Torque	$T_{2Not}$	Nm	1950	2550	3750	3600	3600	1950	3750	3600	3600	3600	3600	3000	3000	3000	2730	2730		
		in.lb	17259	22569	33190	31863	31863	17259	33190	31863	31863	31863	31863	26552	26552	26552	24162	24162		
Maximum Acceleration Torque	$T_{2B}$	Nm	1170	1530	2250	2160	2160	1170	2250	2160	2160	2160	2160	1800	1800	1800	1638	1638		
		in.lb	10355	13542	19914	19118	19118	10355	19914	19118	19118	19118	19118	15931	15931	15931	14497	14497		
Maximum Torque	$T_{2a}$	Nm	1300	1700	2500	2400	2400	1300	2500	2400	2400	2400	2400	2000	2000	2000	1820	1820		
		in.lb	11506	15046	22127	21242	21242	11506	22127	21242	21242	21242	21242	17701	17701	17701	16108	16108		
Permitted Average Input Speed	$n_{1N}$	rpm	3000																	
Maximum Input Speed	$n_{1Max}$	rpm	4000																	
Mean No Load Running Torque	$T_{012}$	Nm	2.45	2.3	2.45	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2		
		in.lb	21.68	20.36	21.68	20.36	20.36	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47	19.47		
Standard Backlash P1	$j_1$	arcmin	≤ 7																	
Reduced Low Backlash P0	$j_1$	arcmin	≤ 5																	
Ultra Low Backlash PU	$j_1$	arcmin	≤ 3																	
Torsional Rigidity	$C_{121}$	Nm/arcmin	125-138																	
		in.lb/arcmin	1106.34-1221.40																	
Maximum Radial Load	$F_{2AMax}$	N	14000																	
		lb <sub>r</sub>	3147																	
Maximum Axial Load	$F_{2OMax}$	N	7000																	
		lb <sub>r</sub>	1574																	
Max. Tilting Moment	$M_{2KMax}$	Nm	1386																	
		in.lb	12267.07																	
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	12.35	12.30	7.54	7.42	7.54	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14	7.14		
Operating Noise Level	$L_{PA}$	dB(A)	< 67																	
Efficiency at Full loading	$\eta$	%	95																	
Operating Temperature		°C	-25 to +90																	
		F	-13 to +194																	
Lubrication			Synthetic Lubrication Grease																	
Mouting Position			Any Directions																	
Protection Class			IP 65																	
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)																	
Weight	$m$	kg	39																	
		lb <sub>m</sub>	86																	

KPLF-B235 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	2050	2000	2000	1900	1900	1800	1800	1800	
		in.lb	10621	15931	18144	16374	15489	13719	13276	13276	
Emergency Stop Torque	$T_{2Not}$	Nm	3600	5400	6150	5550	5250	4650	4500	4500	
		in.lb	31863	47794	54432	49121	46466	41156	39828	39828	
Maximum Acceleration Torque	$T_{2B}$	Nm	2160	3240	3690	3330	3150	2790	2700	2700	
		in.lb	19118	28676	32659	29473	27880	24693	23897	23897	
Maximum Torque	$T_{2a}$	Nm	2400	3600	4100	3700	3500	3100	3000	3000	
		in.lb	21242	31863	36288	32748	30977	27437	26552	26552	
Permitted Average Input Speed	$n_{1N}$	rpm	2000								
Maximum Input Speed	$n_{1Max}$	rpm	4000								
Mean No Load Running Torque	$T_{012}$	Nm	5.2	5	4.85	4.67	4.67	4.67	4.67	4.67	
		in.lb	46.02	44.25	42.93	41.33	41.33	41.33	41.33	41.33	
Standard Backlash P1	$j_i$	arcmin	≤ 5								
Reduced Low Backlash P0	$j_i$	arcmin	≤ 3								
Ultra Low Backlash PU	$j_i$	arcmin	≤ 1								
Torsional Rigidity	$C_{121}$	Nm/arcmin	200-220								
		in.lb/arcmin	1770.14-1947.15								
Maximum Radial Load	$F_{2AMax}$	N	16000								
		lb <sub>r</sub>	3597								
Maximum Axial Load	$F_{2OMax}$	N	8000								
		lb <sub>r</sub>	1798								
Max. Tilting Moment	$M_{2KMax}$	Nm	1936								
		in.lb	17134.96								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	69.61	54.37	53.27	50.84	50.84	50.84	50.84	50.56	
Operating Noise Level	$L_{PA}$	dB(A)	< 70								
Efficiency at Full loading	$\eta$	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	$m$	kg	53								
		lb <sub>m</sub>	117								

KPLF-B235 2-stage

		2-stage																	
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100	
Nominal Output Torque		Nm	2050	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	1900	1800	1800	1800	1800	
		in.lb	10621	10621	15931	18144	18144	10621	15931	18144	18144	18144	18144	16374	13719	13719	13276	13276	
Emergency Stop Torque	$T_{2Not}$	Nm	3600	3600	5400	6150	6150	3600	5400	6150	6150	6150	6150	5550	4650	4650	4500	4500	
		in.lb	31863	31863	47794	54432	54432	31863	47794	54432	54432	54432	54432	49121	41156	41156	39828	39828	
Maximum Acceleration Torque	$T_{2B}$	Nm	2160	2160	3240	3690	3690	2160	3240	3690	3690	3690	3690	3330	2790	2790	2700	2700	
		in.lb	19118	19118	28676	32659	32659	19118	28676	32659	32659	32659	32659	29473	24693	24693	23897	23897	
Maximum Torque	$T_{2a}$	Nm	2400	2400	3600	4100	4100	2400	3600	4100	4100	4100	4100	3700	3100	3100	3000	3000	
		in.lb	21242	21242	31863	36288	36288	21242	31863	36288	36288	36288	36288	32748	27437	27437	26552	26552	
Permitted Average Input Speed	$n_{1N}$	rpm	2000																
Maximum Input Speed	$n_{1Max}$	rpm	4000																
Mean No Load Running Torque	$T_{012}$	Nm	3.3	3.15	3.3	3.15	3.15	3	3	3	3	3	3	3	3	3	3	3	
		in.lb	29.21	27.88	29.21	27.88	27.88	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	
Standard Backlash P1	$j_i$	arcmin	≤ 7																
Reduced Low Backlash P0	$j_i$	arcmin	≤ 5																
Ultra Low Backlash PU	$j_i$	arcmin	≤ 3																
Torsional Rigidity	$C_{121}$	Nm/arcmin	205-220																
		in.lb/arcmin	1814.39-1947.15																
Maximum Radial Load	$F_{2AMax}$	N	16000																
		lb <sub>r</sub>	3597																
Maximum Axial Load	$F_{2OMax}$	N	8000																
		lb <sub>r</sub>	1798																
Max. Tilting Moment	$M_{2KMax}$	Nm	1936																
		in.lb	17134.96																
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	28.98	28.92	23.67	22.75	22.75	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	
Operating Noise Level	$L_{PA}$	dB(A)	< 70																
Efficiency at Full loading	$\eta$	%	95																
Operating Temperature		°C	-25 to +90																
		F	-13 to +194																
Lubrication			Synthetic Lubrication Grease																
Mouting Position			Any Directions																
Protection Class			IP 65																
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)																
Weight	$m$	kg	66																
		lb <sub>m</sub>	145.5																

KPLF-B235 1-stage

		1-stage									
Ratio	i		3	4	5	6	7	8	9	10	
Nominal Output Torque		Nm	2050	2000	2000	1900	1900	1800	1800	1800	
		in.lb	10621	15931	18144	16374	15489	13719	13276	13276	
Emergency Stop Torque	$T_{2Not}$	Nm	3600	5400	6150	5550	5250	4650	4500	4500	
		in.lb	31863	47794	54432	49121	46466	41156	39828	39828	
Maximum Acceleration Torque	$T_{2B}$	Nm	2160	3240	3690	3330	3150	2790	2700	2700	
		in.lb	19118	28676	32659	29473	27880	24693	23897	23897	
Maximum Torque	$T_{2a}$	Nm	2400	3600	4100	3700	3500	3100	3000	3000	
		in.lb	21242	31863	36288	32748	30977	27437	26552	26552	
Permitted Average Input Speed	$n_{1N}$	rpm	2000								
Maximum Input Speed	$n_{1Max}$	rpm	4000								
Mean No Load Running Torque	$T_{012}$	Nm	5.2	5	4.85	4.67	4.67	4.67	4.67	4.67	
		in.lb	46.02	44.25	42.93	41.33	41.33	41.33	41.33	41.33	
Standard Backlash P1	$j_i$	arcmin	≤ 5								
Reduced Low Backlash P0	$j_i$	arcmin	≤ 3								
Ultra Low Backlash PU	$j_i$	arcmin	≤ 1								
Torsional Rigidity	$C_{121}$	Nm/arcmin	200-220								
		in.lb/arcmin	1770.14-1947.15								
Maximum Radial Load	$F_{2AMax}$	N	16000								
		lb <sub>r</sub>	3597								
Maximum Axial Load	$F_{2OMax}$	N	8000								
		lb <sub>r</sub>	1798								
Max. Tilting Moment	$M_{2KMax}$	Nm	1936								
		in.lb	17134.96								
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	69.61	54.37	53.27	50.84	50.84	50.84	50.84	50.56	
Operating Noise Level	$L_{PA}$	dB(A)	< 70								
Efficiency at Full loading	$\eta$	%	97								
Operating Temperature		°C	-25 to +90								
		F	-13 to +194								
Lubrication			Synthetic Lubrication Grease								
Mouting Position			Any Directions								
Protection Class			IP 65								
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)								
Weight	$m$	kg	53								
		lb <sub>m</sub>	117								

KPLF-B235 2-stage

		2-stage																	
Ratio	i		12	15	16	20	25	30	32	35	40	45	50	60	64	80	90	100	
Nominal Output Torque		Nm	2050	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	1900	1800	1800	1800	1800	
		in.lb	10621	10621	15931	18144	18144	10621	15931	18144	18144	18144	18144	18144	16374	13719	13719	13276	13276
Emergency Stop Torque	$T_{2Not}$	Nm	3600	3600	5400	6150	6150	3600	5400	6150	6150	6150	6150	5550	4650	4650	4500	4500	
		in.lb	31863	31863	47794	54432	54432	31863	47794	54432	54432	54432	54432	49121	41156	41156	39828	39828	
Maximum Acceleration Torque	$T_{2B}$	Nm	2160	2160	3240	3690	3690	2160	3240	3690	3690	3690	3690	3330	2790	2790	2700	2700	
		in.lb	19118	19118	28676	32659	32659	19118	28676	32659	32659	32659	32659	29473	24693	24693	23897	23897	
Maximum Torque	$T_{2a}$	Nm	2400	2400	3600	4100	4100	2400	3600	4100	4100	4100	4100	3700	3100	3100	3000	3000	
		in.lb	21242	21242	31863	36288	36288	21242	31863	36288	36288	36288	36288	32748	27437	27437	26552	26552	
Permitted Average Input Speed	$n_{1N}$	rpm	2000																
Maximum Input Speed	$n_{1Max}$	rpm	4000																
Mean No Load Running Torque	$T_{012}$	Nm	3.3	3.15	3.3	3.15	3.15	3	3	3	3	3	3	3	3	3	3	3	
		in.lb	29.21	27.88	29.21	27.88	27.88	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	26.55	
Standard Backlash P1	$j_i$	arcmin	≤ 7																
Reduced Low Backlash P0	$j_i$	arcmin	≤ 5																
Ultra Low Backlash PU	$j_i$	arcmin	≤ 3																
Torsional Rigidity	$C_{121}$	Nm/arcmin	205-220																
		in.lb/arcmin	1814.39-1947.15																
Maximum Radial Load	$F_{2AMax}$	N	16000																
		lb <sub>r</sub>	3597																
Maximum Axial Load	$F_{2OMax}$	N	8000																
		lb <sub>r</sub>	1798																
Max. Tilting Moment	$M_{2KMax}$	Nm	1936																
		in.lb	17134.96																
Mass Moment of Inertia	$j_1$	kgcm <sup>2</sup>	28.98	28.92	23.67	22.75	22.75	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	22.59	
Operating Noise Level	$L_{PA}$	dB(A)	< 70																
Efficiency at Full loading	$\eta$	%	95																
Operating Temperature		°C	-25 to +90																
		F	-13 to +194																
Lubrication			Synthetic Lubrication Grease																
Mouting Position			Any Directions																
Protection Class			IP 65																
Service lifetime	$L_h$	h	S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs)																
Weight	$m$	kg	66																
		lb <sub>m</sub>	145.5																





