

比例尺: 3:1 单位: mm

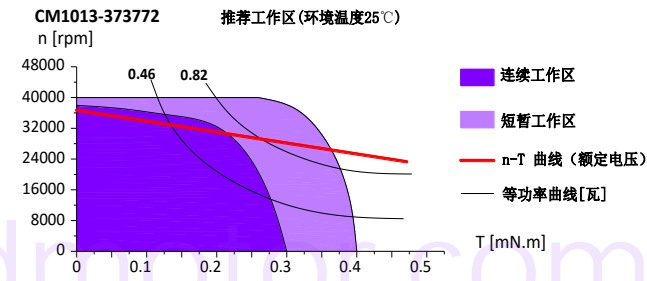


规格	A	B
刷片类型		贵金属刷片
轴承类型	滚珠轴承	滑动轴承
换向器片数		5片
极对数		1对
出线方式	引线	端子
重量		7.1克

CM1013 系列			032968	373772						
电机基本参数										
1	额定电压	U_N	V	3.0	3.7					
2	空载转速	n_0	rpm	28866	36650					
3	空载电流	I_0	A	0.05	0.07					
4	额定转速	n_N	rpm	24530	31762					
5	额定扭矩	T_N	mN.m	0.27	0.27					
6	额定电流	I_N	A	0.283	0.292					
7	堵转扭矩	T_S	mN.m	1.8	2.0					
8	堵转电流	I_S	A	1.6	1.9					
9	最大效率	η	%	67.8	71.6					
电机特性参数										
10	端电阻	R_{t-h}	Ω	1.88	1.95					
11	端电感	L_{t-h}	mH	0.08	0.16					
12	转矩常数	K_T	mN.m/A	1.16	1.08					
13	速度常数	K_n	rpm/V	9932	10146					
14	速度/转矩梯度	K_v	rpm/mN.m	13277	15997					
15	机械时间常数	K_m	ms	6.26	8.54					
16	转子转动惯量	J	gcm ²	0.045	0.051					

温度参数		
17	热阻 (机壳-环境)	45.5 K/W
18	热阻 (绕组-机壳)	19.5 K/W
19	绕组热时间常数	3.16 s
20	电机热时间常数	108 s
21	环境温度	-20...+65°C
22	绕组最大允许温度	+85°C

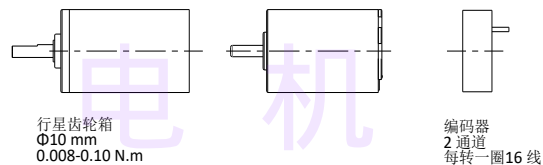
工作特性曲线

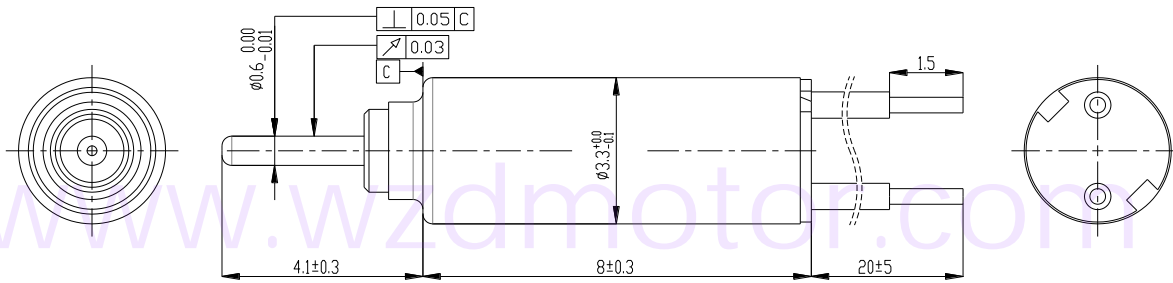


机械性能参数 (滑动轴承)		
23	最大允许速度	40000 rpm
24	轴向游隙	0.05-0.15 mm
25	径向游隙	0.012 mm
26	最大轴向载荷 (动态)	0.15 N
27	最大承压力 (静态)	15 N
28	最大径向负载 (距离法兰 5mm)	0.4 N

特殊配置

机壳: 整体机壳/分体机壳 (包括铁制法兰和铝制法兰);
 换向器: 压敏/电容 (贵金属刷和碳刷);
 轴承: 滚珠轴承/滑动轴承;
 轴: 长度大小/直径大小/扁位类型;
 电气连接: 端子或引线方式/三角形连接/引线长度/连接类型;
 更多需求: 根据客户需求独家定制, 详情请联系我们的售后工程师。



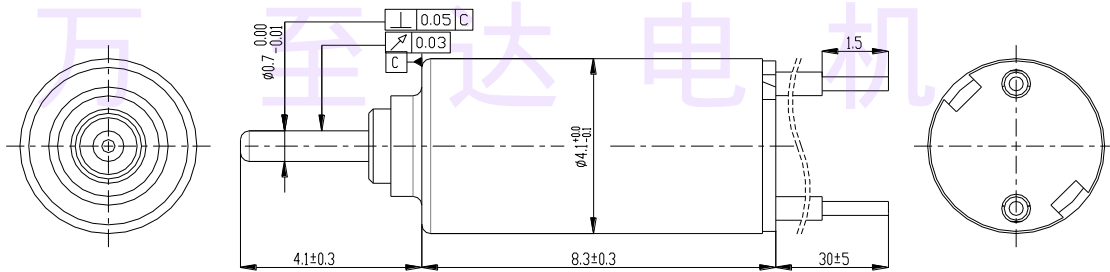


Scale:10:1 Unit:mm

Specifications	A	B
Brushes	Precious Metal Brushes	
Bearings	Sleeve Bearings	
Segments of Commutator	3 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	
Weight	0.3g	

Motor Data		CM0308 Series		366207				
1	Nominal voltage	U_N	V	3.6				
2	No load speed	n_0	rpm	62000				
3	No load current	I_0	A	0.08				
4	Stall current	I_s	A	0.16				
5	Terminal resistance	R_{t-h}	Ω	24				

More: Customized according to customer requirements, please contact our sales engineers

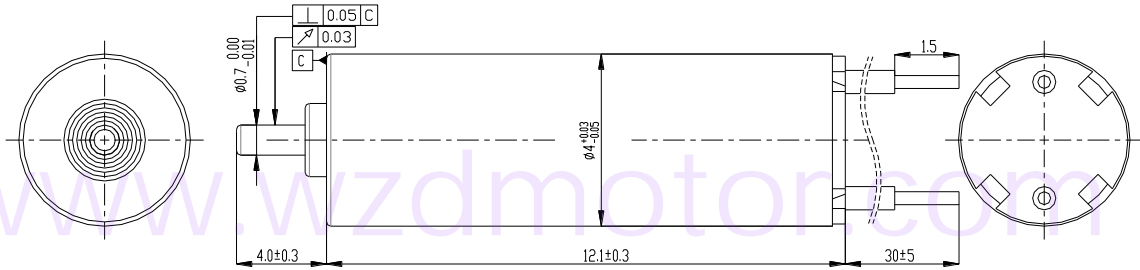


Scale:10:1 Unit:mm

Specifications	A	B
Brushes	Precious Metal Brushes	
Bearings	Sleeve Bearings	
Segments of Commutator	3 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	
Weight	0.35g	

Motor Data		CM0408 Series			035223	347015	058224		
1	Nominal voltage	U_N	V	3.0	3.4	5.0			
2	No load speed	n_0	rpm	51500	69600	82300			
3	No load current	I_0	A	0.035	0.056	0.057			
4	Stall current	I_s	A	0.13	0.149	0.21			
5	Terminal resistance	R_{t-h}	Ω	23.1	22.8	23.8			

More: Customized according to customer requirements, please contact our sales engineers

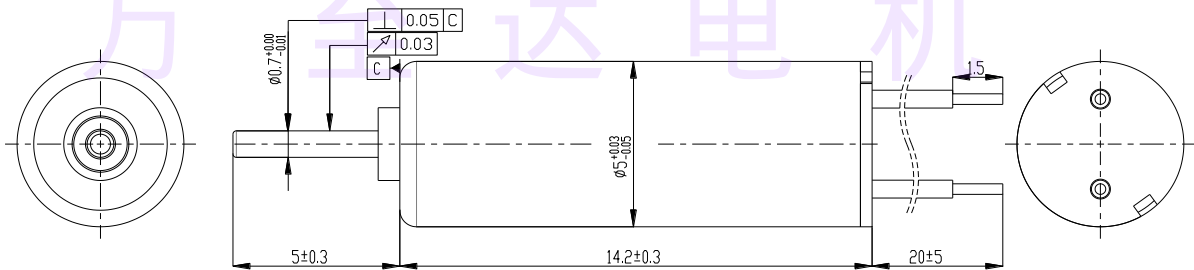


Scale:10:1 Unit:mm

Specifications	A	B
Brushes		Precious Metal Brushes
Bearings		Sleeve Bearings
Segments of Commutator		3 Segments
Number of pole pairs		1
Style of leadwire		Cable
Weight		0.7g

CM0412 Series			152707	375048				
Motor Data								
1	Nominal voltage	U_N	V	1.5	3.7			
2	No load speed	n_0	rpm	26800	49600			
3	No load current	I_0	A	0.028	0.025			
4	Stall current	I_s	A	0.21	0.27			
5	Max. efficiency	η	%	40.3	48.4			
6	Terminal resistance	R_{t-h}	Ω	7.14	13.7			

More: Customized according to customer requirements, please contact our sales engineers

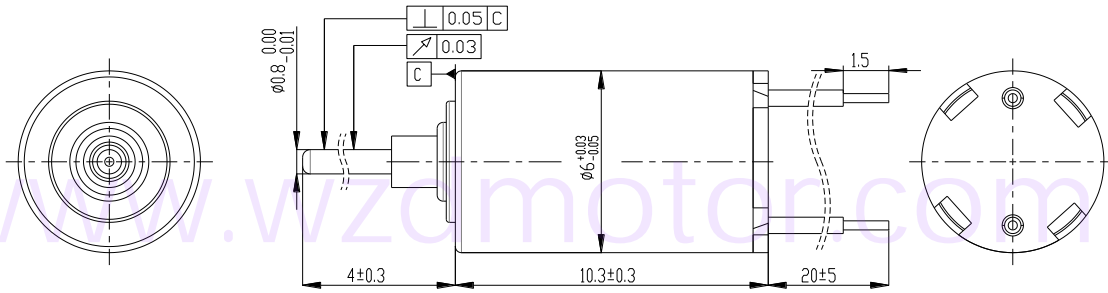


Scale:10:1 Unit:mm

Specifications	A	B
Brushes		Precious Metal Brushes
Bearings		Sleeve Bearings
Segments of Commutator		3 Segments
Number of pole pairs		1
Style of leadwire		Cable
Weight		1.3g

CM0514 Series			035059	314860				
Motor Data								
1	Nominal voltage	U_N	V	3.0	3.1			
2	No load speed	n_0	rpm	50300	47900			
3	No load current	I_0	A	0.04	0.04			
4	Stall current	I_s	A	0.76	0.8			
5	Max. efficiency	η	%	59.3	60.2			
6	Terminal resistance	R_{t-h}	Ω	3.94	3.87			

More: Customized according to customer requirements, please contact our sales engineers



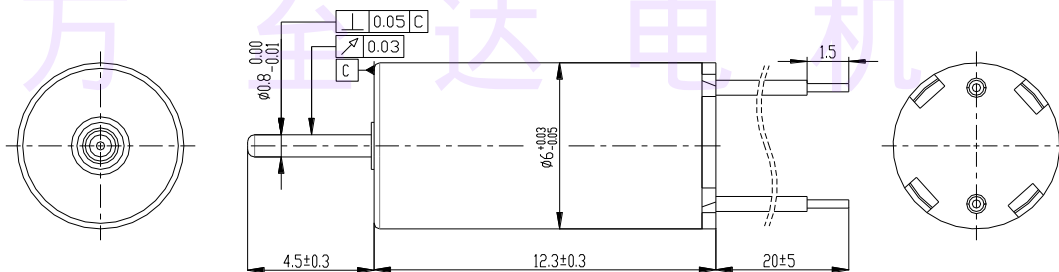
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Specifications		A	B
Brushes		Precious Metal Brushes	
Bearings		Sleeve Bearings	
Segments of Commutator		3/5 Segments	
Number of pole pairs		1	
Style of leadwire		Cable	
Weight		1.45g	

Motor Data		CM0610 Series		375647		
1	Nominal voltage	U_N	V	3.7		
2	No load speed	n_0	rpm	55600		
3	No load current	I_0	A	0.04		
4	Nominal speed	n_N	rpm	42241		
5	Nominal torque	T_N	mN.m	0.07		
6	Nominal current	I_N	A	0.12		
7	Stall torque	T_S	mN.m	0.3		

Characteristics		375647			
8	Stall current	I_s	A	0.4	
9	Max. efficiency	η	%	46.7	
10	Terminal resistance	R_{t-h}	Ω	9.25	
11	Torque constant	K_T	mN.m/A	0.83	
12	Speed constant	K_n	rpm/V	16697	
13	Speed/torque gradient	K_v	rpm/mN.m	127298	

More: Customized according to customer requirements, please contact our sales engineers



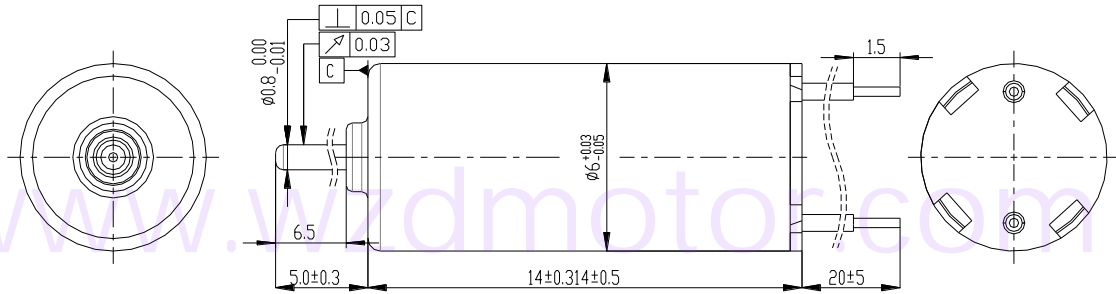
Scale:10:1 Unit:mm

Specifications		A	B
Brushes		Precious Metal Brushes	
Bearings		Sleeve Bearings	
Segments of Commutator		3/5 Segments	
Number of pole pairs		1	
Style of leadwire		Cable	
Weight		1.53g	

Motor Data		CM0612 Series		376064	124547	
1	Nominal voltage	U_N	V	3.7	12.0	
2	No load speed	n_0	rpm	60000	44500	
3	No load current	I_0	A	0.07	0.011	
4	Nominal speed	n_N	rpm	49878	33808	
5	Nominal torque	T_N	mN.m	0.15	0.07	
6	Nominal current	I_N	A	0.34	0.03	
7	Stall torque	T_S	mN.m	0.9	0.3	

Characteristics		376064		124547	
8	Stall current	I_s	A	1.7	0.11
9	Max. efficiency	η	%	63.5	46.7
10	Terminal resistance	R_{t-h}	Ω	2.17	109.09
11	Torque constant	K_T	mN.m/A	0.5	3
12	Speed constant	K_n	rpm/V	16910	4120
13	Speed/torque gradient	K_v	rpm/mN.m	82888	115748

More: Customized according to customer requirements, please contact our sales engineers



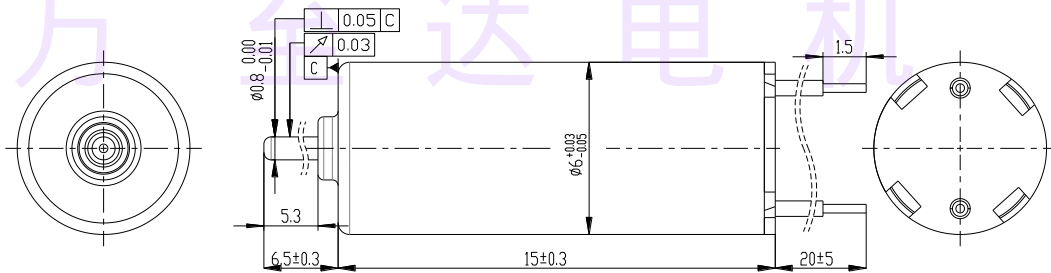
Scale:6:1 Unit:mm

Specifications	A	B
Brushes	Precious Metal Brushes	
Bearings	Sleeve Bearings	
Segments of Commutator	3/5 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	
Weight	1.68g	

CM0614 Series		375269		
Motor Data				
1	Nominal voltage	U_N	V	3.7
2	No load speed	n_0	rpm	51500
3	No load current	I_0	A	0.05
4	Nominal speed	n_N	rpm	44071
5	Nominal torque	T_N	mN.m	0.17
6	Nominal current	I_N	A	0.29
7	Stall torque	T_S	mN.m	1.2

Characteristics		375269		
8	Stall current	I_s	A	1.76
9	Max. efficiency	η	%	69.1
10	Terminal resistance	R_{t-h}	Ω	2.1
11	Torque constant	K_T	mN.m/A	0.7
12	Speed constant	K_n	rpm/V	14325
13	Speed/torque gradient	K_v	rpm/mN.m	40926

More: Customized according to customer requirements, please contact our sales engineers



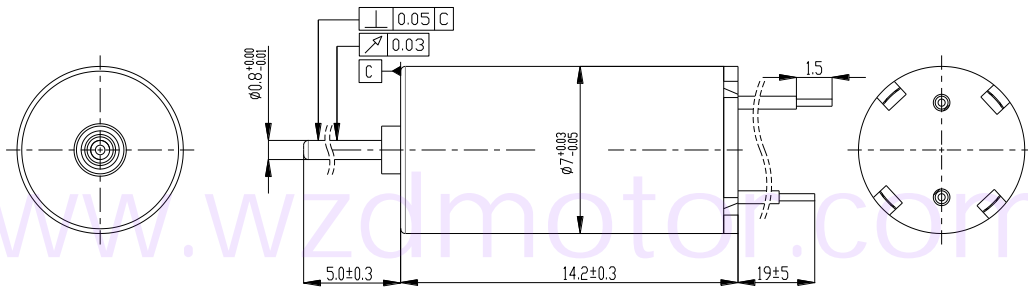
Scale:6:1 Unit:mm

Specifications	A	B
Brushes	Precious Metal Brushes	
Bearings	Sleeve Bearings	
Segments of Commutator	3/5 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	
Weight	1.72g	

CM0615 Series		345172	345568	
Motor Data				
1	Nominal voltage	U_N	V	3.4 3.4
2	No load speed	n_0	rpm	50500 54500
3	No load current	I_0	A	0.05 0.08
4	Nominal speed	n_N	rpm	43897 46380
5	Nominal torque	T_N	mN.m	0.01 0.19
6	Nominal current	I_N	A	0.33 0.45
7	Stall torque	T_S	mN.m	1.15 1.3

Characteristics		345172	345568	
8	Stall current	I_s	A	2.21 2.61
9	Max. efficiency	η	%	72.1 68
10	Terminal resistance	R_{t-h}	Ω	1.53 1.3
11	Torque constant	K_T	mN.m/A	0.5 0.5
12	Speed constant	K_n	rpm/V	15195 16535
13	Speed/torque gradient	K_v	rpm/mN.m	51623 47171

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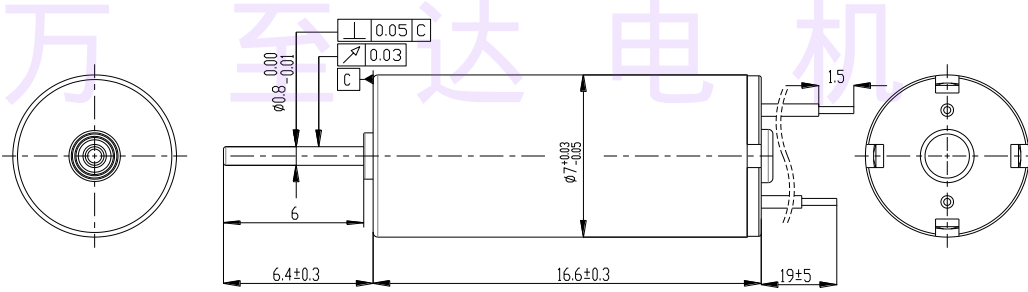
Scale:5:1 Unit:mm

Specifications		A	B
Brushes		Precious Metal Brushes	
Bearings		Sleeve Bearings	
Segments of Commutator		5 Segments	
Number of pole pairs		1	
Style of leadwire		Cable	
Weight		2.37g	

CM0714 Series		345874		
Motor Data				
1	Nominal voltage	U_N	V	3.4
2	No load speed	n_0	rpm	58100
3	No load current	I_0	A	0.07
4	Nominal speed	n_N	rpm	50855
5	Nominal torque	T_N	mN.m	0.19
6	Nominal current	I_N	A	0.49
7	Stall torque	T_S	mN.m	3.45

Characteristics			345874		
8	Stall current	I_s	A	3.45	
9	Max. efficiency	η	%	73.5	
10	Terminal resistance	R_{t-h}	Ω	0.98	
11	Torque constant	K_T	mN.m/A	0.47	
12	Speed constant	K_n	rpm/V	17440	
13	Speed/torque gradient	K_v	rpm/mN.m	42911	

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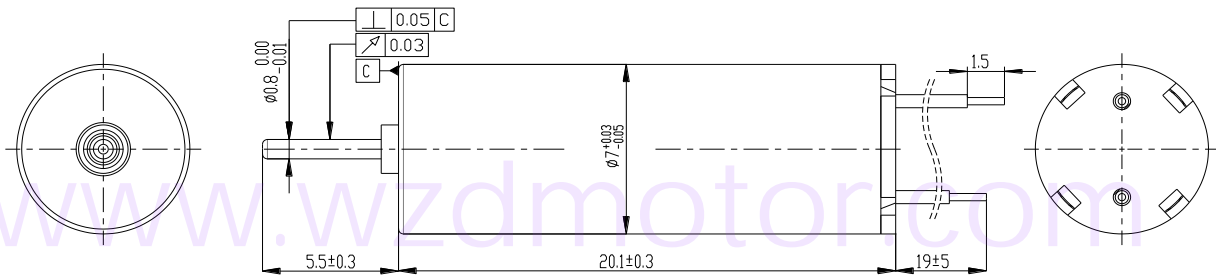
Scale:5:1 Unit:mm

Specifications		A	B
Brushes		Precious Metal Brushes	
Bearings		Sleeve Bearings	
Segments of Commutator		5 Segments	
Number of pole pairs		1	
Style of leadwire		Cable	
Weight		2.72g	

CM0717 Series		346072	375277	121968
Motor Data				
1	Nominal voltage	U_N	V	3.4 3.7 12.0
2	No load speed	n_0	rpm	60000 52400 18700
3	No load current	I_0	A	0.13 0.05 0.004
4	Nominal speed	n_N	rpm	52127 46732 15909
5	Nominal torque	T_N	mN.m	0.32 0.2 0.11
6	Nominal current	I_N	A	0.86 0.41 0.02
7	Stall torque	T_S	mN.m	2.45 1.85 0.8

Characteristics			346072	375277	121968	
8	Stall current	I_s	A	5.7	3.4	0.13
9	Max. efficiency	η	%	72	77	67.9
10	Terminal resistance	R_{t-h}	Ω	0.59	1.08	92.3
11	Torque constant	K_T	mN.m/A	0.44	0.55	6.3
12	Speed constant	K_n	rpm/V	18054	14372	1608
13	Speed/torque gradient	K_v	rpm/mN.m	29234	33847	21866

More: Customized according to customer requirements, please contact our sales engineers



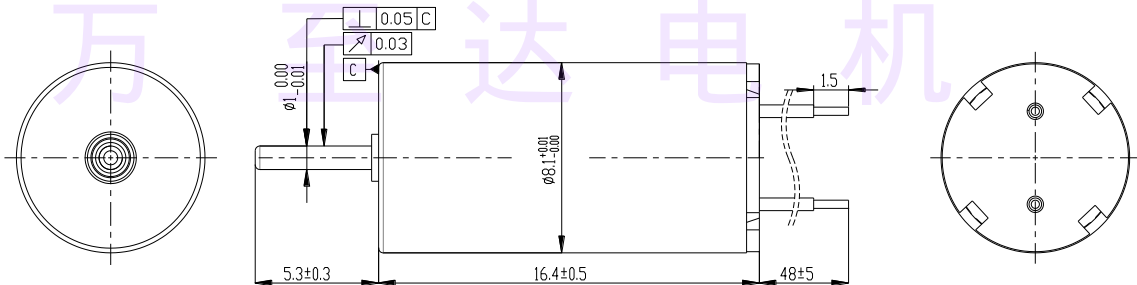
Scale:5:1 Unit:mm

Specifications		A	B
Brushes		Precious Metal Brushes	
Bearings		Sleeve Bearings	
Segments of Commutator		5 Segments	
Number of pole pairs		1	
Style of leadwire		Cable	
Weight		3.55g	

CM0720 Series		033771	344875
Motor Data			
1	Nominal voltage	U_N V	3 3.4
2	No load speed	n_0 rpm	37000 47800
3	No load current	I_0 A	0.1 0.1
4	Nominal speed	n_N rpm	31921 42213
5	Nominal torque	T_N mN.m	0.36 0.4
6	Nominal current	I_N A	0.62 0.75
7	Stall torque	T_S mN.m	2.69 3.5

Characteristics		033771	344875
8	Stall current	I_s A	3.95 5.71
9	Max. efficiency	η %	70.7 75.2
10	Terminal resistance	R_{th} Ω	0.75 0.59
11	Torque constant	K_T mN.m/A	0.7 0.6
12	Speed constant	K_n rpm/V	12650 14307
13	Speed/torque gradient	K_v rpm/mN.m	14700 14516

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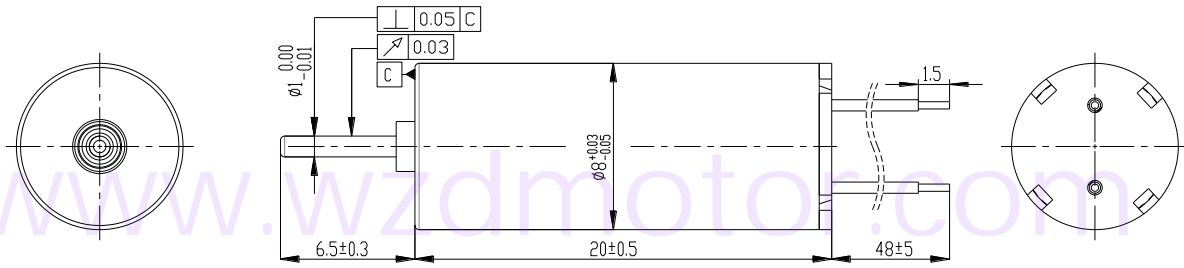
Scale:5:1 Unit:mm

Specifications		A	B
Brushes		Precious Metal Brushes	
Bearings		Sleeve Bearings	
Segments of Commutator		5 Segments	
Number of pole pairs		1	
Style of leadwire		Cable	
Weight		4.2g	

CM0816 Series		344676	344074
Motor Data			
1	Nominal voltage	U_N V	3.4 3.4
2	No load speed	n_0 rpm	46100 40000
3	No load current	I_0 A	0.11 0.1
4	Nominal speed	n_N rpm	40793 35169
5	Nominal torque	T_N mN.m	0.47 0.42
6	Nominal current	I_N A	0.84 0.72
7	Stall torque	T_S mN.m	4.1 3.5

Characteristics		344676	344074
8	Stall current	I_s A	6.5 5.3
9	Max. efficiency	η %	75.6 74.4
10	Terminal resistance	R_{th} Ω	0.52 0.64
11	Torque constant	K_T mN.m/A	0.64 0.67
12	Speed constant	K_n rpm/V	13790 11990
13	Speed/torque gradient	K_v rpm/mN.m	12085 13494

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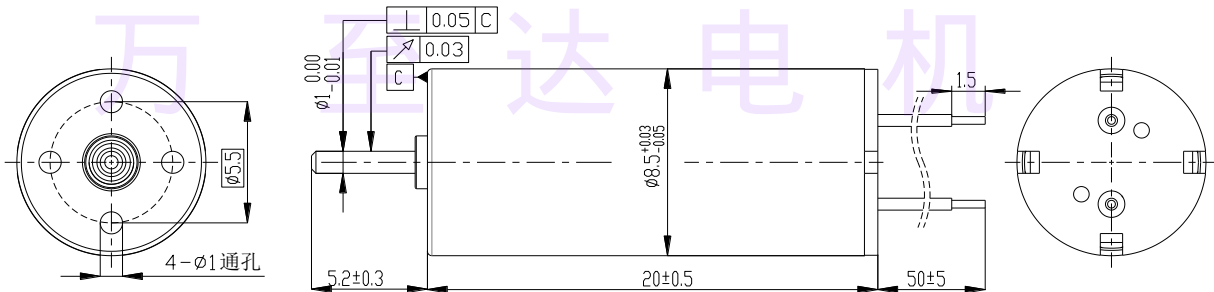
Scale:4:1 Unit:mm

Specifications		A	B
Brushes	Precious Metal Brushes		
Bearings	Sleeve Bearings		
Segments of Commutator	5 Segments		
Number of pole pairs	1		
Style of leadwire	Cable		
Weight	4.31g		

CM0820 Series		263172		
Motor Data				
1	Nominal voltage	U_N	V	2.6
2	No load speed	n_0	rpm	31000
3	No load current	I_0	A	0.07
4	Nominal speed	n_N	rpm	26978
5	Nominal torque	T_N	mN.m	0.29
6	Nominal current	I_N	A	0.46
7	Stall torque	T_S	mN.m	2.3

Characteristics			263172		
8	Stall current	I_s	A	3.15	
9	Max. efficiency	η	%	72	
10	Terminal resistance	R_{th}	Ω	0.82	
11	Torque constant	K_T	mN.m/A	0.75	
12	Speed constant	K_n	rpm/V	12192	
13	Speed/torque gradient	K_v	rpm/mN.m	14070	

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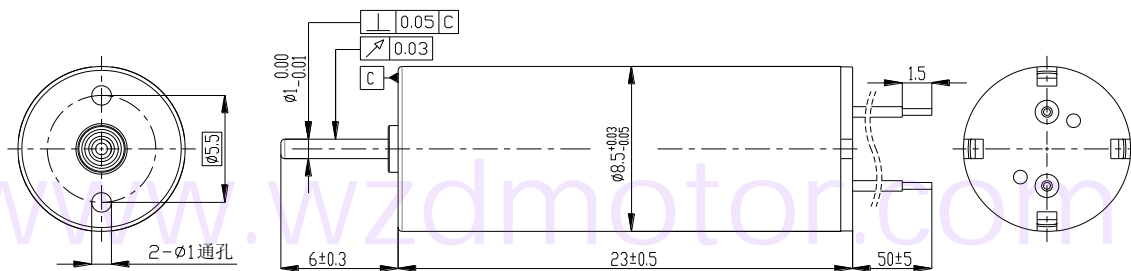
Scale:4:1 Unit:mm

Specifications		A	B
Brushes	Precious Metal Brushes		
Bearings	Sleeve Bearings		
Segments of Commutator	5 Segments		
Number of pole pairs	1		
Style of leadwire	Cable		
Weight	5.25g		

CM8520 Series		344278	345076	
Motor Data				
1	Nominal voltage	U_N	V	3.4 3.4
2	No load speed	n_0	rpm	42000 49600
3	No load current	I_0	A	0.11 0.16
4	Nominal speed	n_N	rpm	37640 43897
5	Nominal torque	T_N	mN.m	0.51 0.64
6	Nominal current	I_N	A	0.94 1.23
7	Stall torque	T_S	mN.m	5.0 5.6

Characteristics			344278	345076	
8	Stall current	I_s	A	8.2	9.48
9	Max. efficiency	η	%	78.1	75.7
10	Terminal resistance	R_{th}	Ω	0.41	0.35
11	Torque constant	K_T	mN.m/A	0.62	0.6
12	Speed constant	K_n	rpm/V	12519	14833
13	Speed/torque gradient	K_v	rpm/mN.m	10251	9284

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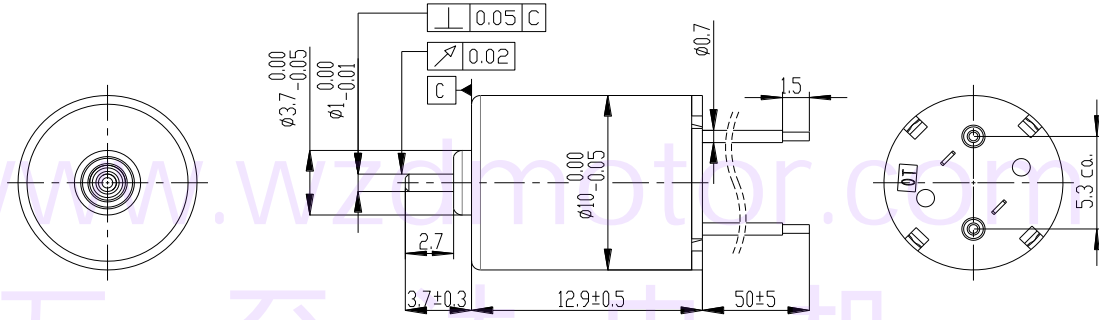
Scale:4:1 Unit:mm

Specifications		A	B
Brushes		Precious Metal Brushes	
Bearings		Sleeve Bearings	
Segments of Commutator		5 Segments	
Number of pole pairs		1	
Style of leadwire		Cable	
Weight		5.72g	

CM8523 Series		033578	684776
Motor Data			
1	Nominal voltage	U_N	V
2	No load speed	n_0	rpm
3	No load current	I_0	A
4	Nominal speed	n_N	rpm
5	Nominal torque	T_N	mN.m
6	Nominal current	I_N	A
7	Stall torque	T_S	mN.m

Characteristics		033578	684776
8	Stall current	I_s	A
9	Max. efficiency	η	%
10	Terminal resistance	R_{th}	Ω
11	Torque constant	K_T	mN.m/A
12	Speed constant	K_n	rpm/V
13	Speed/torque gradient	K_v	rpm/mN.m

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Scale:3:1 Unit:mm

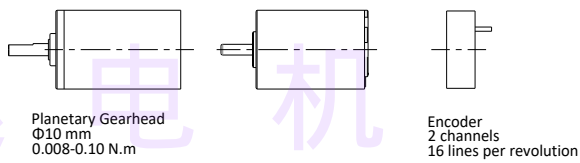
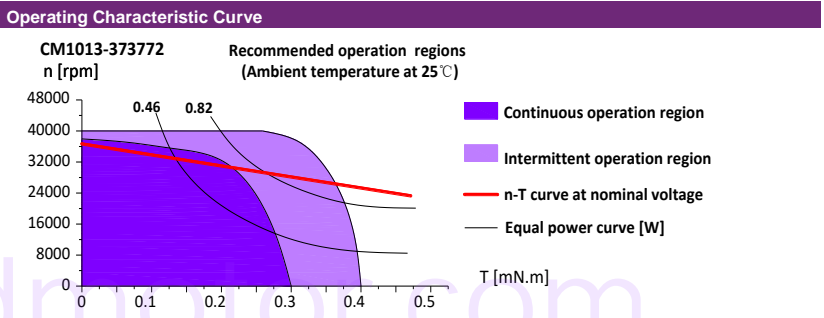
Specifications		A	B
Brushes		Precious Metal Brushes	
Bearings		Ball Bearings	Sleeve Bearings
Segments of Commutator		5 Segments	
Number of pole pairs		1	
Style of leadwire		Cable	Terminals
Weight		7.1g	

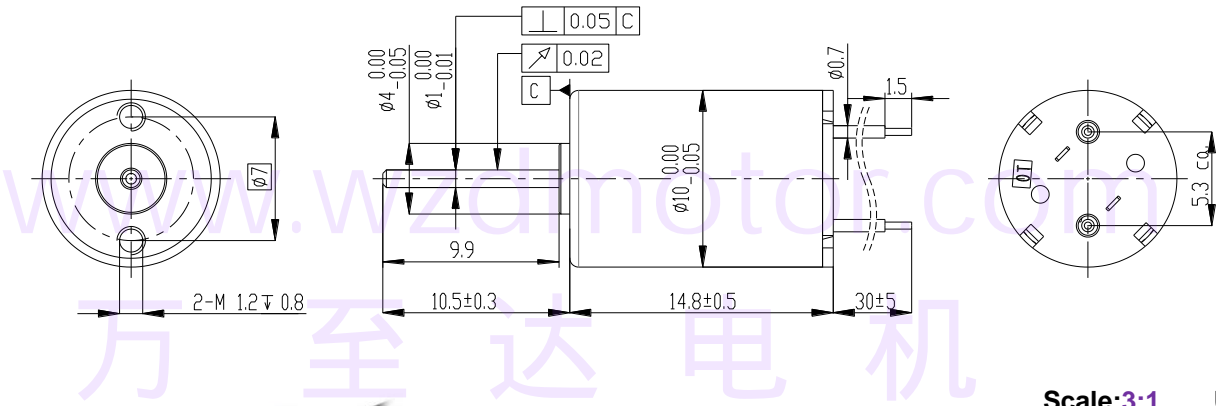
			CM1013 Series		032968	373772							
Motor Data													
1	Nominal voltage	U_N	V		3.0	3.7							
2	No load speed	n_0	rpm		28866	36650							
3	No load current	I_0	A		0.05	0.07							
4	Nominal speed	n_N	rpm		24530	31762							
5	Nominal torque	T_N	mN.m		0.27	0.27							
6	Nominal current	I_N	A		0.283	0.292							
7	Stall torque	T_S	mN.m		1.8	2.0							
8	Stall current	I_S	A		1.6	1.9							
9	Max. efficiency	η	%		67.8	71.6							
Characteristics													
10	Terminal resistance	R_{t-h}	Ω		1.88	1.95							
11	Terminal inductance	L_{t-h}	mH		0.08	0.16							
12	Torque constant	K_T	mN.m/A		1.16	1.08							
13	Speed constant	K_n	rpm/V		9932	10146							
14	Speed/torque gradient	K_v	rpm/mN.m		13277	15997							
15	Mechanical time constant	K_m	ms		6.26	8.54							
16	Rotor inertia	J	gcm ²		0.045	0.051							

Thermal data		
17	Thermal resistance housing-ambient	45.5 K/W
18	Thermal resistance winding-housing	19.5 K/W
19	Thermal time constant winding	3.16 s
20	Thermal time constant motor	108 s
21	Ambient temperature	-20...+65°C
22	Max. permissible winding temperature	+85°C

Mechanical data (sleeve bearings)		
23	Max. permissible speed	40000 rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.012 mm
26	Max. axial load (dynamic)	0.15 N
27	Max. force for press fits (static)	15 N
28	Max. radial loading, 5 mm from flange	0.4 N

Configuration
 Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:3:1 Unit:mm

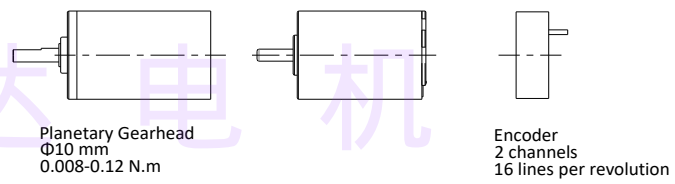
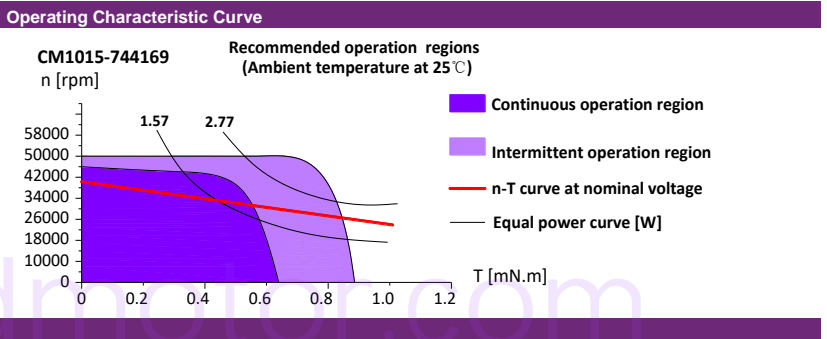
Specifications		A	B
Brushes		Precious Metal Brushes	
Bearings		Ball Bearings	Sleeve Bearings
Segments of Commutator		5 Segments	
Number of pole pairs		1	
Style of leadwire		Cable	Terminals
Weight		7.2g	

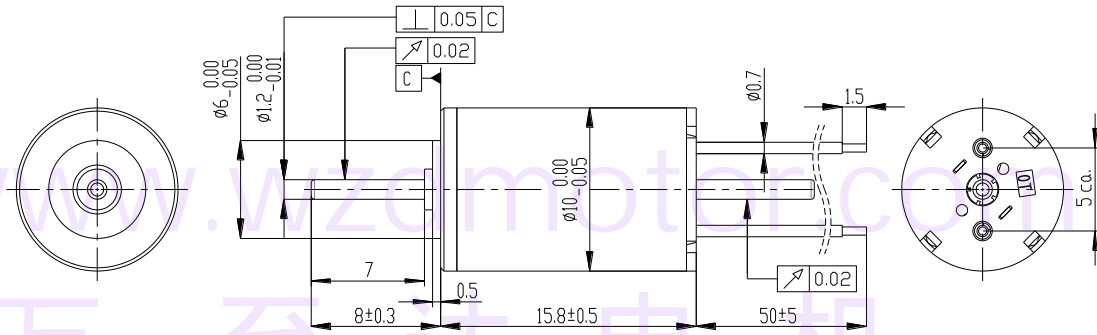
			CM1015 Series		052874	744169								
Motor Data														
1	Nominal voltage	U_N	V		5.0	7.4								
2	No load speed	n_0	rpm		28100	40900								
3	No load current	I_0	A		0.04	0.06								
4	Nominal speed	n_N	rpm		24633	34986								
5	Nominal torque	T_N	mN.m		0.3	0.55								
6	Nominal current	I_N	A		0.284	0.355								
7	Stall torque	T_S	mN.m		2.5	3.8								
8	Stall current	I_S	A		2.02	2.1								
9	Max. efficiency	η	%		73.8	69.1								
Characteristics														
10	Terminal resistance	R_{t-h}	Ω		2.48	3.52								
11	Terminal inductance	L_{t-h}	mH		0.05	1.1								
12	Torque constant	K_T	mN.m/A		1.26	1.86								
13	Speed constant	K_n	rpm/V		5733	5689								
14	Speed/torque gradient	K_v	rpm/mN.m		14827	9698								
15	Mechanical time constant	K_m	ms		7.92	5.38								
16	Rotor inertia	J	gcm ²		0.051	0.053								

Thermal data		
17	Thermal resistance housing-ambient	45.5 K/W
18	Thermal resistance winding-housing	19.5K/W
19	Thermal time constant winding	3.16 s
20	Thermal time constant motor	108 s
21	Ambient temperature	-20...+65°C
22	Max. permissible winding temperature	+85°C

Mechanical data (sleeve bearings)		
23	Max. permissible speed	50000 rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.012 mm
26	Max. axial load (dynamic)	0.15 N
27	Max. force for press fits (static)	15 N
28	Max. radial loading, 5 mm from flange	0.4 N

Configuration
 Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:3:1 Unit:mm

Specifications	A	B
Brushes	Precious Metal Brushes	
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator	5/7 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	Terminals
Weight	7.3g	

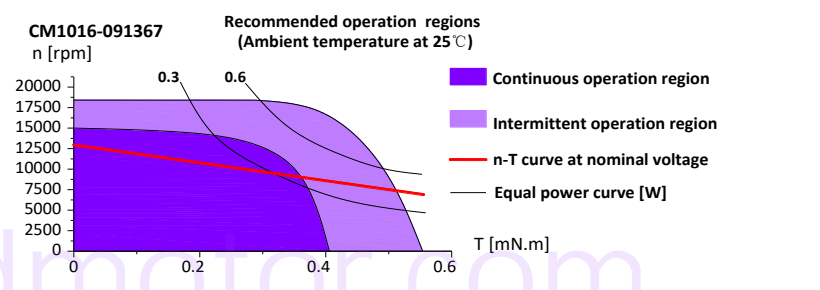
CM1016 Series			031565	091367						
Motor Data										
1	Nominal voltage	U_N	V	3.0	9.0					
2	No load speed	n_0	rpm	15300	12800					
3	No load current	I_0	A	0.025	0.010					
4	Nominal speed	n_N	rpm	12807	10800					
5	Nominal torque	T_N	mN.m	0.16	0.19					
6	Nominal current	I_N	A	0.128	0.055					
7	Stall torque	T_S	mN.m	1	1.25					
8	Stall current	I_S	A	0.66	0.3					
9	Max. efficiency	η	%	64.9	66.8					

Characteristics										
10	Terminal resistance	R_{t-h}	Ω	4.55	30					
11	Terminal inductance	L_{t-h}	mH	0.07	0.72					
12	Torque constant	K_T	mN.m/A	1.57	4.31					
13	Speed constant	K_n	rpm/V	5301	1471					
14	Speed/torque gradient	K_v	rpm/mN.m	17502	15419					
15	Mechanical time constant	K_m	ms	9.53	9.04					
16	Rotor inertia	J	gcm ²	0.052	0.056					

Thermal data		
17	Thermal resistance housing-ambient	45.5 K/W
18	Thermal resistance winding-housing	19.5K/W
19	Thermal time constant winding	3.16 s
20	Thermal time constant motor	108 s
21	Ambient temperature	-20...+65°C
22	Max. permissible winding temperature	+85°C

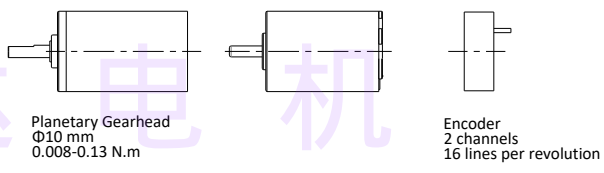
Mechanical data (sleeve bearings)		
23	Max. permissible speed	18000 rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.012 mm
26	Max. axial load (dynamic)	0.15 N
27	Max. force for press fits (static)	15 N
28	Max. radial loading, 5 mm from flange	0.4 N

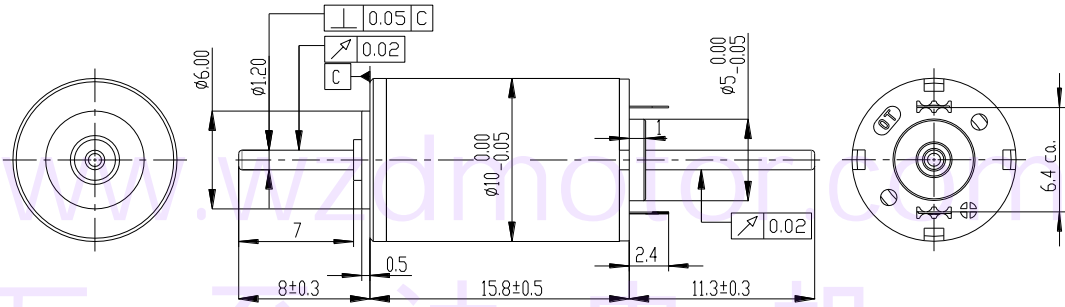
Operating Characteristic Curve



Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connector/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:3:1 Unit:mm



Specifications	A	B
Brushes		Graphite Brushes
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator		5/7 Segments
Number of pole pairs		1
Style of leadwire	Cable	Terminals
Weight		7.5g

CM1016 Series			744169	121364										
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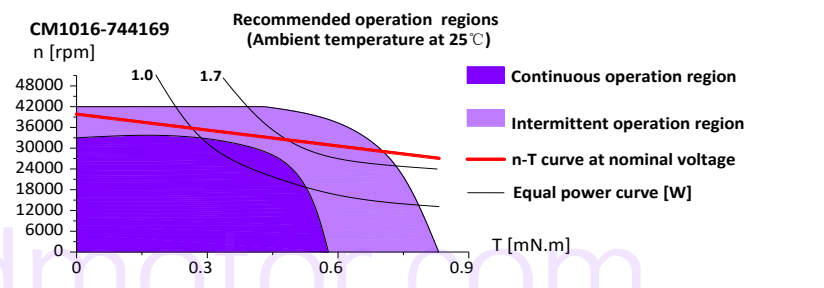
Motor Data														
1	Nominal voltage	U_N	V	7.4	12.0									
2	No load speed	n_0	rpm	40900	12800									
3	No load current	I_0	A	0.06	0.01									
4	Nominal speed	n_N	rpm	34986	3980									
5	Nominal torque	T_N	mN.m	0.54	0.7									
6	Nominal current	I_N	A	0.35	0.15									
7	Stall torque	T_S	mN.m	3.8	1.2									
8	Stall current	I_S	A	2.1	0.25									
9	Max. efficiency	η	%	69	64									

Characteristics														
10	Terminal resistance	R_{t-h}	Ω	3.5	48									
11	Terminal inductance	L_{t-h}	mH	0.08	0.90									
12	Torque constant	K_T	mN.m/A	1.86	5.0									
13	Speed constant	K_n	rpm/V	5698	1111									
14	Speed/torque gradient	K_v	rpm/mN.m	10722	18335									
15	Mechanical time constant	K_m	ms	6.7	12.5									
16	Rotor inertia	J	gcm ²	0.066	0.065									

Thermal data		
17	Thermal resistance housing-ambient	45.5K/W
18	Thermal resistance winding-housing	19.5K/W
19	Thermal time constant winding	3.16 s
20	Thermal time constant motor	108 s
21	Ambient temperature	-20...+65°C
22	Max. permissible winding temperature	+85°C

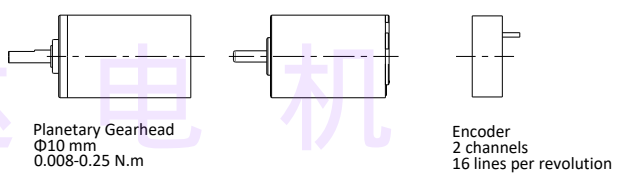
Mechanical data (sleeve bearings)		
23	Max. permissible speed	42000 rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.012 mm
26	Max. axial load (dynamic)	0.15 N
27	Max. force for press fits (static)	15 N
28	Max. radial loading, 5 mm from flange	0.4 N

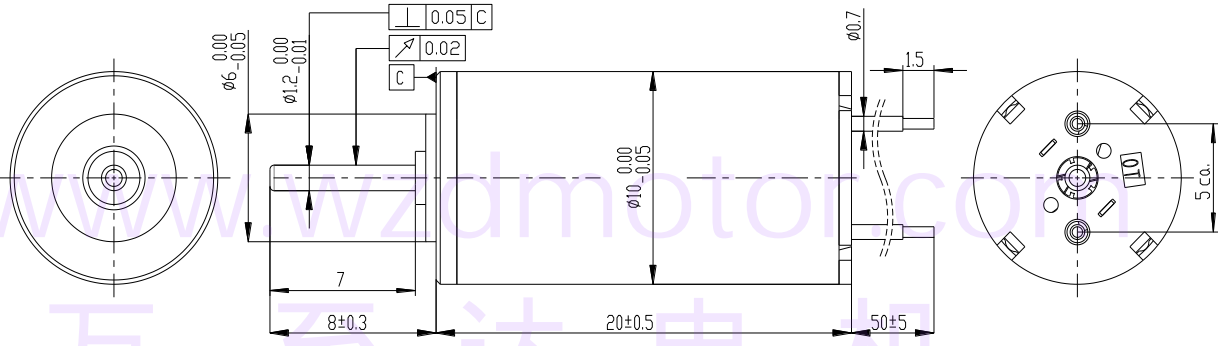
Operating Characteristic Curve



Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:3:1 Unit:mm

Specifications	A	B
Brushes	Precious Metal Brushes	
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator	5 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	Terminals
Weight	8.4g	

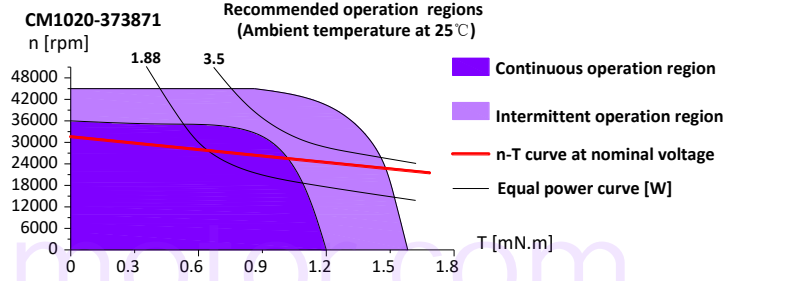
CM1020 Series			373871	743274						
Motor Data										
1	Nominal voltage	U_N	V	3.7	7.4					
2	No load speed	n_0	rpm	38000	31500					
3	No load current	I_0	A	0.15	0.060					
4	Nominal speed	n_N	rpm	32812	27653					
5	Nominal torque	T_N	mN.m	1.16	0.81					
6	Nominal current	I_N	A	0.949	0.43					
7	Stall torque	T_S	mN.m	8.5	6.6					
8	Stall current	I_S	A	6	3.1					
9	Max. efficiency	η	%	70.9	74.1					

Characteristics										
10	Terminal resistance	R_{t-h}	Ω	0.62	2.39					
11	Terminal inductance	L_{t-h}	mH	0.018	0.2					
12	Torque constant	K_T	mN.m/A	1.45	2.17					
13	Speed constant	K_n	rpm/V	10534	4341					
14	Speed/torque gradient	K_v	rpm/mN.m	2789	4836					
15	Mechanical time constant	K_m	ms	3.04	8.1					
16	Rotor inertia	J	gcm ²	0.104	0.2					

Thermal data		
17	Thermal resistance housing-ambient	45.5K/W
18	Thermal resistance winding-housing	19.5K/W
19	Thermal time constant winding	3.16 s
20	Thermal time constant motor	108 s
21	Ambient temperature	-20...+65°C
22	Max. permissible winding temperature	+85°C

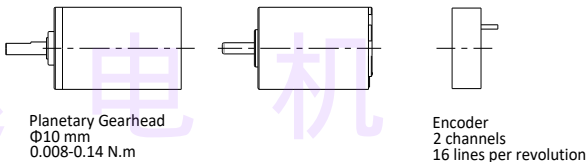
Mechanical data (sleeve bearings)		
23	Max. permissible speed	45000 rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.012 mm
26	Max. axial load (dynamic)	0.15 N
27	Max. force for press fits (static)	15 N
28	Max. radial loading, 5 mm from flange	0.4 N

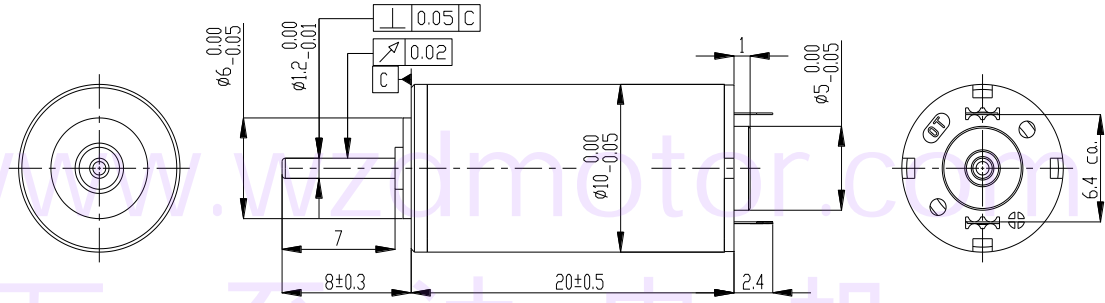
Operating Characteristic Curve



Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:3:1 Unit:mm

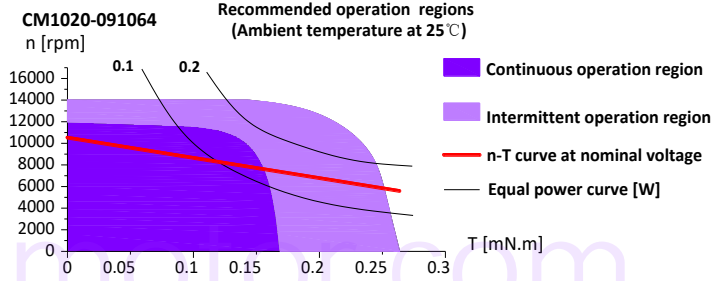
Specifications		A	B
Brushes			Graphite Brushes
Bearings		Ball Bearings	Sleeve Bearings
Segments of Commutator			5 Segments
Number of pole pairs			1
Style of leadwire		Cable	Terminals
Weight			8.5g

			CM1020 Series			
			061167	743666	091064	121165
Motor Data						
1	Nominal voltage	U_N V	6.0	7.4	9.0	12.0
2	No load speed	n_0 rpm	11250	36100	10350	11460
3	No load current	I_0 A	0.011	0.06	0.007	0.005
4	Nominal speed	n_N rpm	9513	30391	8604	9581
5	Nominal torque	T_N mN.m	0.17	0.28	0.16	0.16
6	Nominal current	I_N A	0.06	0.319	0.034	0.025
7	Stall torque	T_S mN.m	1.1	1.8	0.96	1.0
8	Stall current	I_S A	0.33	1.7	0.17	0.13
9	Max. efficiency	η %	66.8	66.0	63.5	64.6
Characteristics						
10	Terminal resistance	R_{t-h} Ω	26.1	4.35	52.9	92.3
11	Terminal inductance	L_{t-h} mH	0.018	0.11	0.18	0.2
12	Torque constant	K_T mN.m/A	5.0	1.1	5.89	8.0
13	Speed constant	K_n rpm/V	1969	5057	1199	993
14	Speed/torque gradient	K_v rpm/mN.m	9874	34506	14575	13773
15	Mechanical time constant	K_m ms	10.7	18.1	9.16	9.8
16	Rotor inertia	J gcm ²	0.104	0.05	0.06	0.068

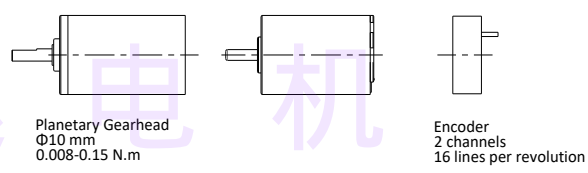
Thermal data	
17	Thermal resistance housing-ambient 45.5K/W
18	Thermal resistance winding-housing 19.5K/W
19	Thermal time constant winding 3.16 s
20	Thermal time constant motor 108 s
21	Ambient temperature -20...+65°C
22	Max. permissible winding temperature +85°C

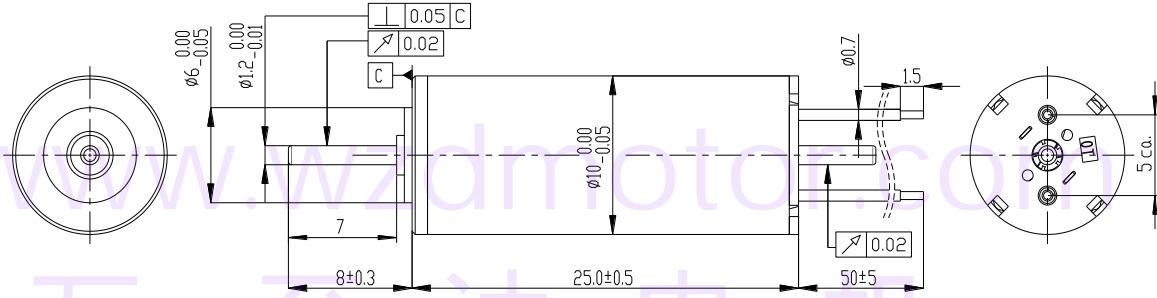
Mechanical data (sleeve bearings)	
23	Max. permissible speed 14000 rpm
24	Axial play 0.05-0.15 mm
25	Radial play 0.012 mm
26	Max. axial load (dynamic) 0.15 N
27	Max. force for press fits (static) 15 N
28	Max. radial loading, 5 mm from flange 0.4 N

Operating Characteristic Curve



Configuration
 Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:3:1 Unit:mm

Specifications	A	B
Brushes	Precious Metal Brushes	
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator	5 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	Terminals
Weight	9.8g	

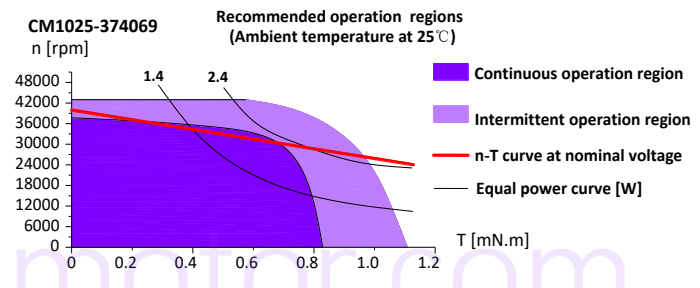
CM1025 Series			374069	373370						
Motor Data										
1	Nominal voltage	U_N	V	3.7	3.7					
2	No load speed	n_0	rpm	40000	33200					
3	No load current	I_0	A	0.22	0.18					
4	Nominal speed	n_N	rpm	34151	28460					
5	Nominal torque	T_N	mN.m	0.8	0.76					
6	Nominal current	I_N	A	1.29	1.08					
7	Stall torque	T_S	mN.m	5.5	5.3					
8	Stall current	I_S	A	7.5	6.5					
9	Max. efficiency	η	%	68.7	69.5					

Characteristics										
10	Terminal resistance	R_{t-h}	Ω	0.49	0.57					
11	Terminal inductance	L_{t-h}	mH	0.017	0.029					
12	Torque constant	K_T	mN.m/A	0.76	0.84					
13	Speed constant	K_n	rpm/V	11138	9229					
14	Speed/torque gradient	K_v	rpm/mN.m	8254	7729					
15	Mechanical time constant	K_m	ms	9.51	9.71					
16	Rotor inertia	J	gcm ²	0.11	0.12					

Thermal data		
17	Thermal resistance housing-ambient	37.5K/W
18	Thermal resistance winding-housing	9K/W
19	Thermal time constant winding	2.22 s
20	Thermal time constant motor	135 s
21	Ambient temperature	-20...+65°C
22	Max. permissible winding temperature	+85°C

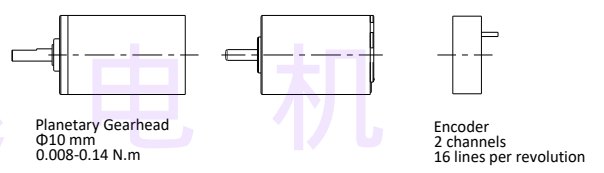
Mechanical data (sleeve bearings)		
23	Max. permissible speed	43000 rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.012 mm
26	Max. axial load (dynamic)	0.15 N
27	Max. force for press fits (static)	15 N
28	Max. radial loading, 5 mm from flange	0.4 N

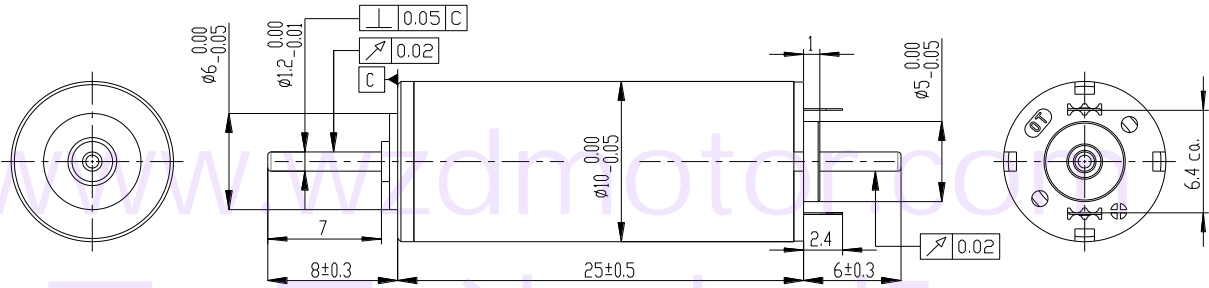
Operating Characteristic Curve



Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:3:1 Unit:mm



Specifications	A	B
Brushes		Graphite Brushes
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator		5 Segments
Number of pole pairs		1
Style of leadwire	Cable	Terminals
Weight		10g

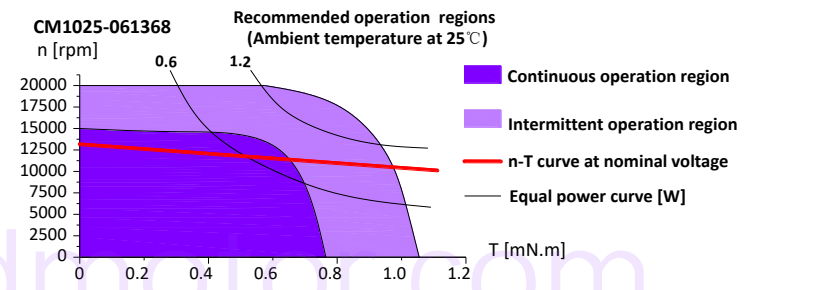
CM1025 Series			061368	091369	121267	
Motor Data						
1	Nominal voltage	U_N	V	6.0	9.0	12.0
2	No load speed	n_0	rpm	13200	12800	11900
3	No load current	I_0	A	0.028	0.019	0.015
4	Nominal speed	n_N	rpm	11329	10931	10063
5	Nominal torque	T_N	mN.m	0.67	0.72	0.68
6	Nominal current	I_N	A	0.16	0.11	0.082
7	Stall torque	T_S	mN.m	4.5	4.9	4.4
8	Stall current	I_S	A	0.92	0.65	0.45
9	Max. efficiency	η	%	68.2	68.7	66.8

Characteristics						
10	Terminal resistance	R_{t-h}	Ω	6.52	13.85	26.7
11	Terminal inductance	L_{t-h}	mH	0.017	0.019	0.02
12	Torque constant	K_T	mN.m/A	5.04	7.77	10.1
13	Speed constant	K_n	rpm/V	2269	1466	1026
14	Speed/torque gradient	K_v	rpm/mN.m	2447	2193	2489
15	Mechanical time constant	K_m	ms	2.82	2.53	2.87
16	Rotor inertia	J	gcm ²	0.11	0.11	0.11

Thermal data		
17	Thermal resistance housing-ambient	37.5K/W
18	Thermal resistance winding-housing	9K/W
19	Thermal time constant winding	2.22 s
20	Thermal time constant motor	135 s
21	Ambient temperature	-20...+65°C
22	Max. permissible winding temperature	+85°C

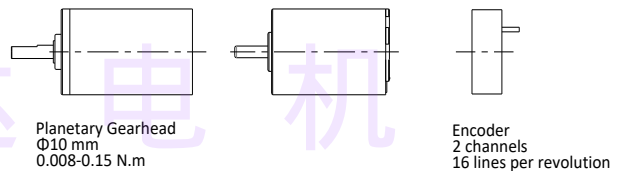
Mechanical data (sleeve bearings)		
23	Max. permissible speed	20000 rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.012 mm
26	Max. axial load (dynamic)	0.15 N
27	Max. force for press fits (static)	15 N
28	Max. radial loading, 5 mm from flange	0.4 N

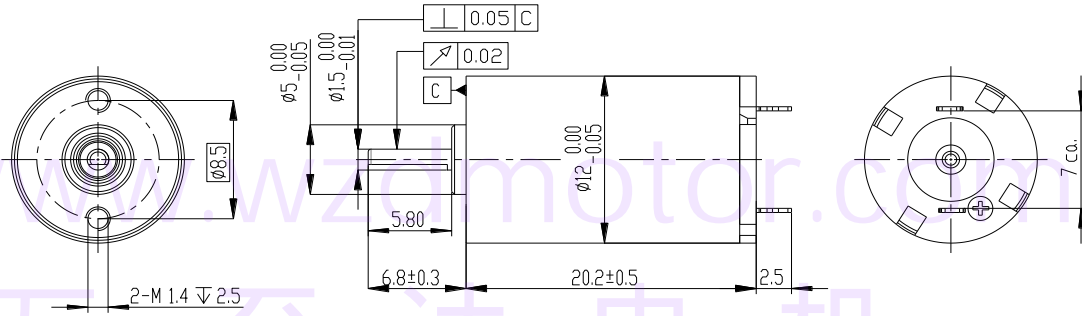
Operating Characteristic Curve



Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:2.5:1 Unit:mm

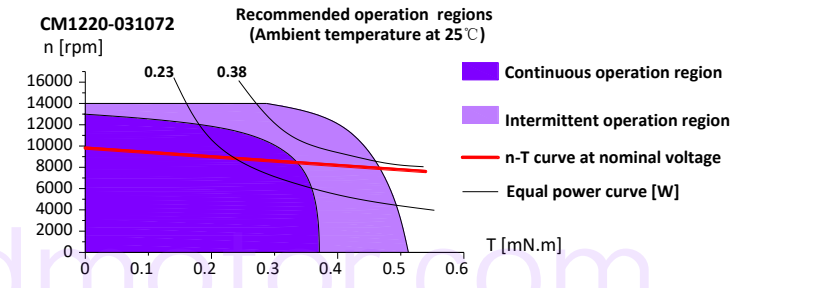
Specifications	A	B
Brushes	Precious Metal Brushes	
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator	5 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	Terminals
Weight	12.2g	

CM1220 Series			031072	340671	451175	
Motor Data						
1	Nominal voltage	U_N	V	3.0	3.4	4.5
2	No load speed	n_0	rpm	9750	5550	11300
3	No load current	I_0	A	0.020	0.008	0.015
4	Nominal speed	n_N	rpm	8447	4792	9939
5	Nominal torque	T_N	mN.m	0.33	0.27	0.39
6	Nominal current	I_N	A	0.13	0.051	0.11
7	Stall torque	T_S	mN.m	2.5	2.0	3.2
8	Stall current	I_S	A	0.84	0.32	0.8
9	Max. efficiency	η	%	71.5	70.9	74.5
Characteristics						
10	Terminal resistance	R_{t-h}	Ω	3.57	10.6	5.63
11	Terminal inductance	L_{t-h}	mH	0.02	0.025	0.025
12	Torque constant	K_T	mN.m/A	3.05	6.41	4.08
13	Speed constant	K_n	rpm/V	3329	1674	2559
14	Speed/torque gradient	K_v	rpm/mN.m	3669	2469	3232
15	Mechanical time constant	K_m	ms	5.76	5.43	6.77
16	Rotor inertia	J	gcm ²	0.15	0.21	0.2

Thermal data		
17	Thermal resistance housing-ambient	41 K/W
18	Thermal resistance winding-housing	11 K/W
19	Thermal time constant winding	3.8 s
20	Thermal time constant motor	102 s
21	Ambient temperature	-20...+65°C
22	Max. permissible winding temperature	+85°C

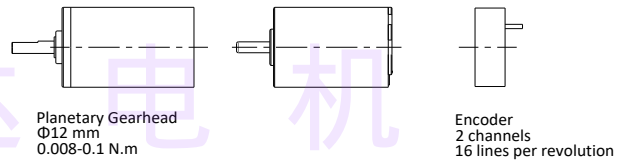
Mechanical data (sleeve bearings)		
23	Max. permissible speed	14000 rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.012 mm
26	Max. axial load (dynamic)	0.15 N
27	Max. force for press fits (static)	15 N
28	Max. radial loading, 5 mm from flange	0.4 N

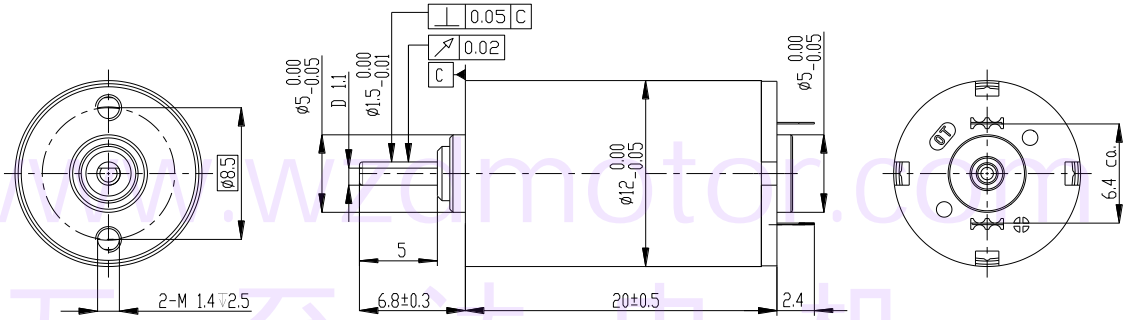
Operating Characteristic Curve



Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





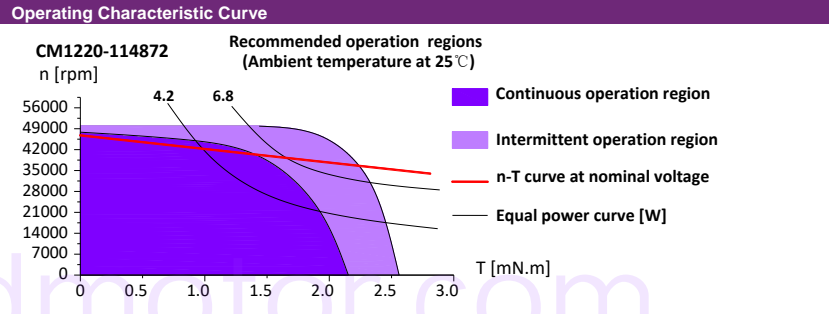
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Specifications		A	B
Brushes			Graphite Brushes
Bearings		Ball Bearings	Sleeve Bearings
Segments of Commutator			5 Segments
Number of pole pairs			1
Style of leadwire		Cable	Terminals
Weight			12.5g

CM1220 Series			743972	114872	121775	
Motor Data						
1	Nominal voltage	U_N	V	7.4	11.1	12
2	No load speed	n_0	rpm	39375	47500	17200
3	No load current	I_0	A	0.248	0.14	0.03
4	Nominal speed	n_N	rpm	34193	41294	15183
5	Nominal torque	T_N	mN.m	2.37	1.69	1.4
6	Nominal current	I_N	A	1.64	0.93	0.226
7	Stall torque	T_S	mN.m	18	13	12
8	Stall current	I_S	A	10.8	6.2	1.7
9	Max. efficiency	η	%	72	72.2	75.2

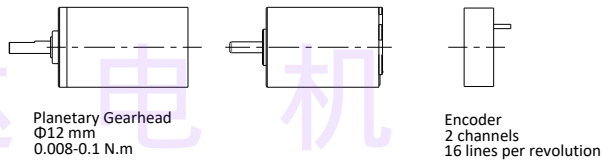
Characteristics						
10	Terminal resistance	R_{t-h}	Ω	0.69	1.79	7.06
11	Terminal inductance	L_{t-h}	mH	0.02	0.03	0.05
12	Torque constant	K_T	mN.m/A	1.7	2.15	7.19
13	Speed constant	K_n	rpm/V	5446	4378	1459
14	Speed/torque gradient	K_v	rpm/mN.m	2247	3815	1305
15	Mechanical time constant	K_m	ms	3.53	6.22	2.19
16	Rotor inertia	J	gcm ²	0.15	0.16	0.16

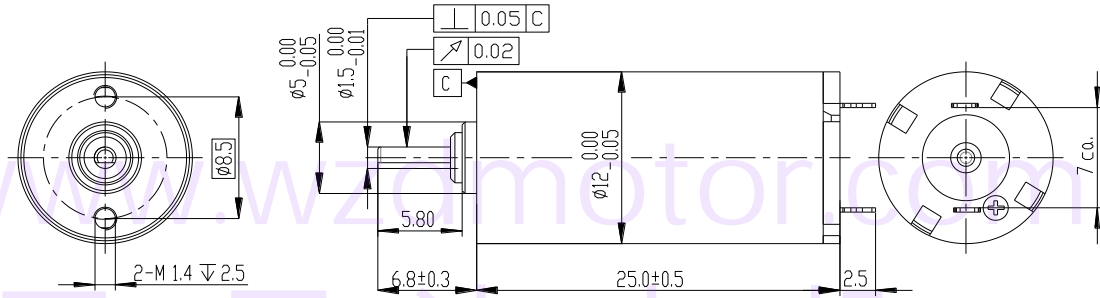
Thermal data		
17	Thermal resistance housing-ambient	41 K/W
18	Thermal resistance winding-housing	11 K/W
19	Thermal time constant winding	3.8 s
20	Thermal time constant motor	102 s
21	Ambient temperature	-20...+65°C
22	Max. permissible winding temperature	+85°C



Mechanical data (sleeve bearings)		
23	Max. permissible speed	50000 rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.012 mm
26	Max. axial load (dynamic)	0.15 N
27	Max. force for press fits (static)	15 N
28	Max. radial loading, 5 mm from flange	0.4 N

Configuration
 Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:2.5:1 Unit:mm

Specifications	A	B
Brushes	Precious Metal Brushes	
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator	5 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	Terminals
Weight	14g	

			CM1225 Series		
			060980	120979	180979
Motor Data					
1	Nominal voltage	U_N V	6.0	12.0	18.0
2	No load speed	n_0 rpm	8950	8930	8925
3	No load current	I_0 A	0.018	0.009	0.006
4	Nominal speed	n_N rpm	8079	8048	8043
5	Nominal torque	T_N mN.m	1.03	1.04	1.03
6	Nominal current	I_N A	0.17	0.08	0.055
7	Stall torque	T_S mN.m	10.6	10.6	10.5
8	Stall current	I_S A	1.55	0.75	0.50
9	Max. efficiency	η %	79.6	79.3	79.3

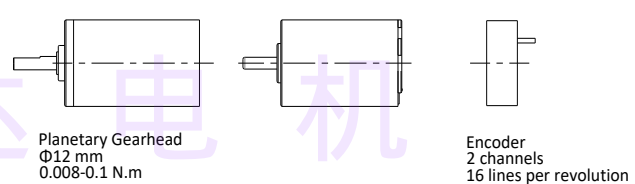
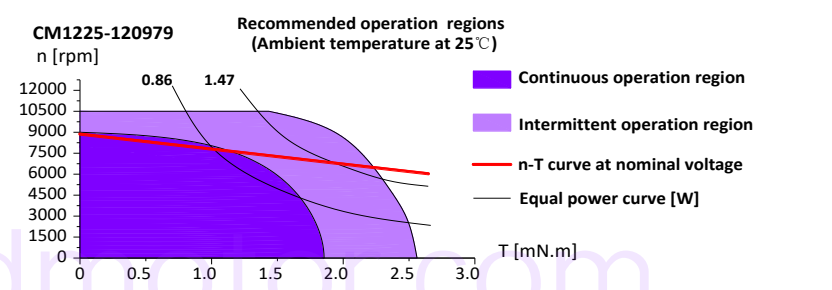
Characteristics					
10	Terminal resistance	R_{t-h} Ω	3.87	16.0	36
11	Terminal inductance	L_{t-h} mH	0.07	0.5	0.9
12	Torque constant	K_T mN.m/A	6.92	14.3	21.3
13	Speed constant	K_n rpm/V	1509	753	511.2
14	Speed/torque gradient	K_v rpm/mN.m	772	747	864
15	Mechanical time constant	K_m ms	2.43	3.13	4.3
16	Rotor inertia	J gcm ²	0.3	0.4	0.3

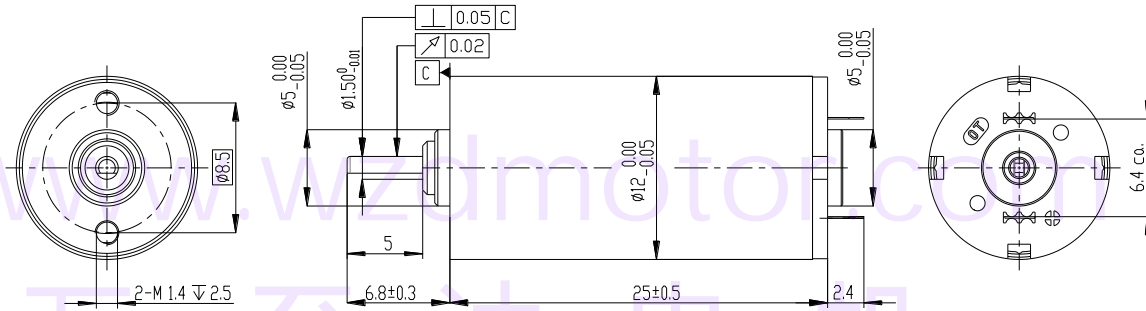
Thermal data		
17	Thermal resistance housing-ambient	41 K/W
18	Thermal resistance winding-housing	11 K/W
19	Thermal time constant winding	3.8 s
20	Thermal time constant motor	102 s
21	Ambient temperature	-20...+65°C
22	Max. permissible winding temperature	+85°C

Mechanical data (sleeve bearings)		
23	Max. permissible speed	10000 rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.012 mm
26	Max. axial load (dynamic)	0.15 N
27	Max. force for press fits (static)	15 N
28	Max. radial loading, 5 mm from flange	0.4 N

Configuration
 Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers

Operating Characteristic Curve





Scale:3:1 Unit:mm

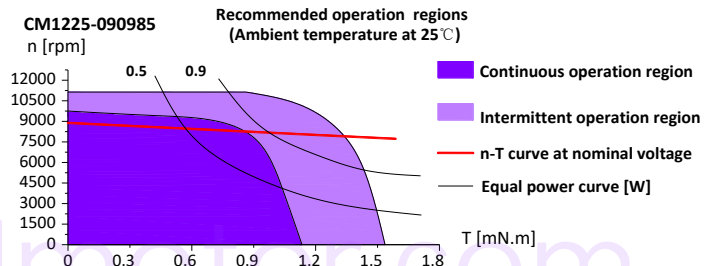
Specifications		A	B
Brushes			Graphite Brushes
Bearings		Ball Bearings	Sleeve Bearings
Segments of Commutator			5 Segments
Number of pole pairs			1
Style of leadwire		Cable	Terminals
Weight			14.5g

CM1225 Series			030981	090985						
Motor Data										
1	Nominal voltage	U_N	V	3.0	9.0					
2	No load speed	n_0	rpm	8775	8756					
3	No load current	I_0	A	0.03	0.01					
4	Nominal speed	n_N	rpm	7995	8000					
5	Nominal torque	T_N	mN.m	0.91	1.04					
6	Nominal current	I_N	A	0.31	0.106					
7	Stall torque	T_S	mN.m	10.2	12.0					
8	Stall current	I_S	A	3.15	1.22					
9	Max. efficiency	η	%	81.4	84.6					
Characteristics										
10	Terminal resistance	R_{t-h}	Ω	0.95	7.38					
11	Terminal inductance	L_{t-h}	mH	0.08	0.21					
12	Torque constant	K_T	mN.m/A	3.27	9.92					
13	Speed constant	K_n	rpm/V	2953	981					
14	Speed/torque gradient	K_v	rpm/mN.m	851	716					
15	Mechanical time constant	K_m	ms	4.28	6.68					
16	Rotor inertia	J	gcm ²	0.48	0.89					

Thermal data		
17	Thermal resistance housing-ambient	41 K/W
18	Thermal resistance winding-housing	11 K/W
19	Thermal time constant winding	3.8 s
20	Thermal time constant motor	102 s
21	Ambient temperature	-20...+65°C
22	Max. permissible winding temperature	+85°C

Mechanical data (sleeve bearings)		
23	Max. permissible speed	11000 rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.014 mm
26	Max. axial load (dynamic)	0.8 N
27	Max. force for press fits (static)	15 N
28	Max. radial loading, 5 mm from flange	1.4 N

Operating Characteristic Curve



Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)

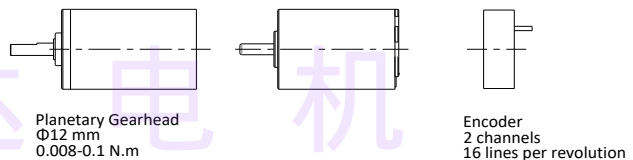
Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)

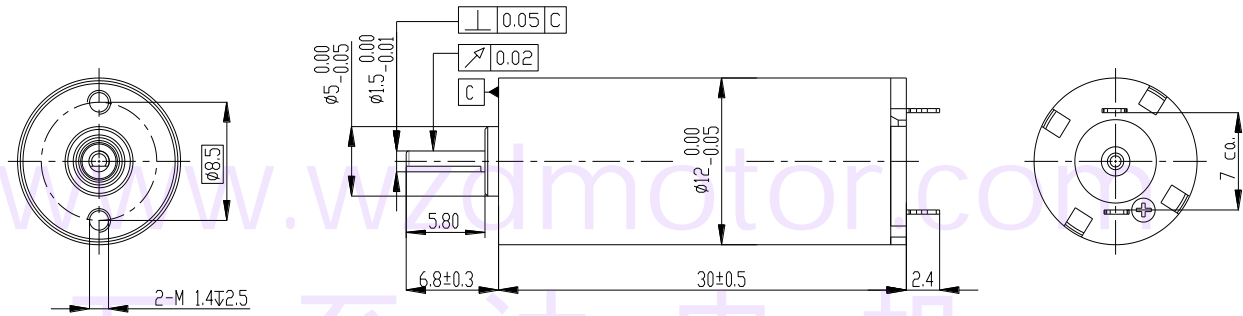
Bearing: Ball bearing/sleeve bearing

Shaft: Length/diameter/flat face

Electric connection: Terminals or cable/alignment of connection/ cable length/connector type

More: Customized according to customer requirements, please contact our sales engineers





Scale:3:1 Unit:mm

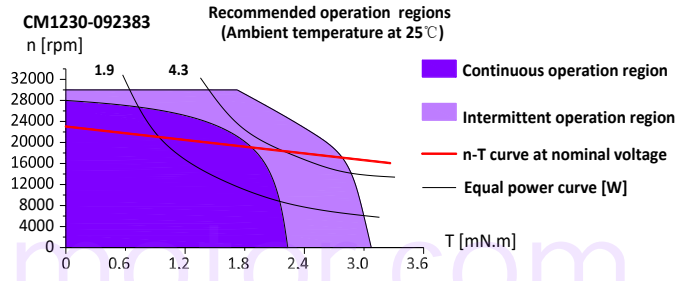
Specifications	A	B
Brushes	Precious Metal Brushes	
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator	9 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	Terminals
Weight	16.8g	

CM1230 Series			051081	062181	092383	121082	
Motor Data							
1	Nominal voltage	U_N	V	5.0	6.0	9.0	12.0
2	No load speed	n_0	rpm	10080	20900	22900	10200
3	No load current	I_0	A	0.025	0.031	0.021	0.015
4	Nominal speed	n_N	rpm	9164	19000	20977	9300
5	Nominal torque	T_N	mN.m	1.02	1.0	0.92	1.06
6	Nominal current	I_N	A	0.25	0.31	0.23	0.155
7	Stall torque	T_S	mN.m	11.2	11.0	11.0	12
8	Stall current	I_S	A	2.5	3.1	2.5	1.6
9	Max. efficiency	η	%	81.0	81.0	82.5	81.6

Characteristics							
10	Terminal resistance	R_{th}	Ω	2.0	1.94	3.6	9.91
11	Terminal inductance	L_{th}	mH	0.02	0.04	0.05	0.09
12	Torque constant	K_T	mN.m/A	4.53	3.58	4.44	10
13	Speed constant	K_n	rpm/V	2036	3519	2566	861
14	Speed/torque gradient	K_v	rpm/mN.m	933	14396	1746	946
15	Mechanical time constant	K_m	ms	5.47	8.44	9.14	9.81
16	Rotor inertia	J	gcm^2	0.56	0.56	0.50	0.75

Thermal data		
17	Thermal resistance housing-ambient	41 K/W
18	Thermal resistance winding-housing	11 K/W
19	Thermal time constant winding	3.8 s
20	Thermal time constant motor	102 s
21	Ambient temperature	-20...+65°C
22	Max. permissible winding temperature	+85°C

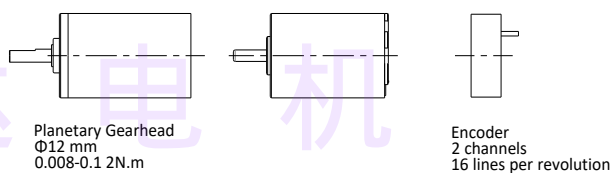
Operating Characteristic Curve

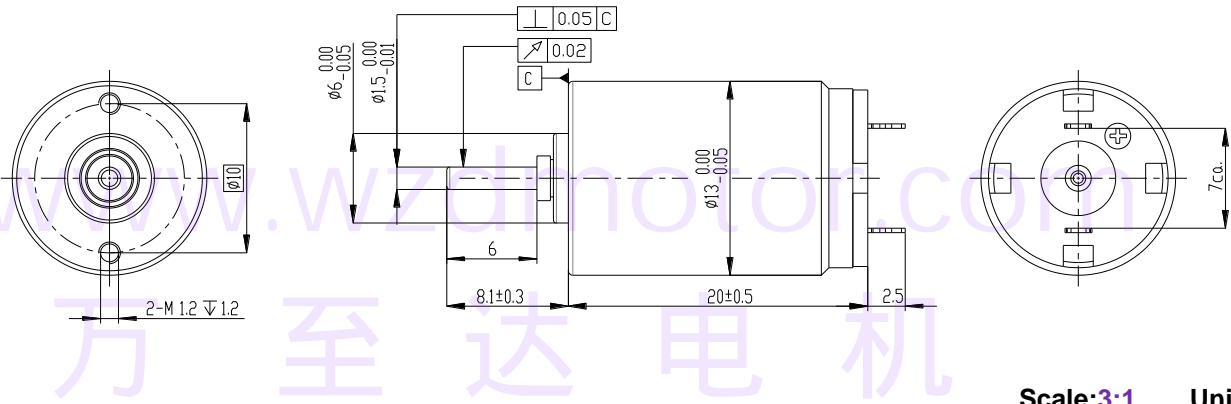


Mechanical data (sleeve bearings)		
23	Max. permissible speed	30000 rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.014 mm
26	Max. axial load (dynamic)	0.8 N
27	Max. force for press fits (static)	15 N
28	Max. radial loading, 5 mm from flange	1.4 N

Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:3:1 Unit:mm

Specifications	A	B
Brushes	Precious Metal Brushes	
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator	5 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	Terminals
Weight	12g	

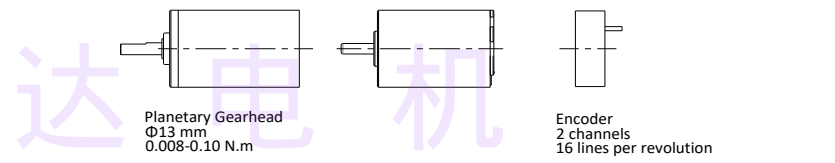
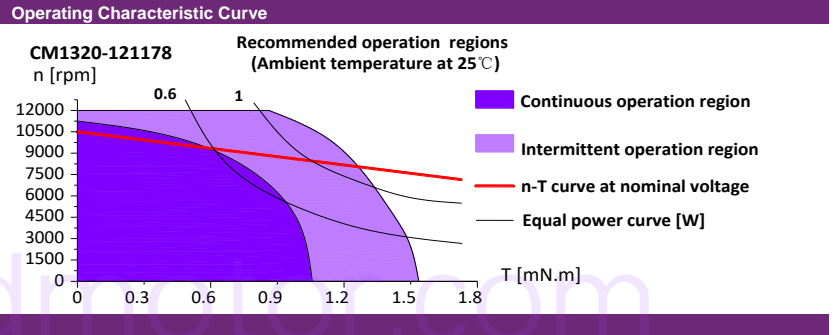
CM1320 Series			121178	120985	120984	
Motor Data						
1	Nominal voltage	U_N	V	12.0	12.0	12.0
2	No load speed	n_0	rpm	10500	9400	8871
3	No load current	I_0	A	0.007	0.004	0.004
4	Nominal speed	n_N	rpm	9389	8716	8185
5	Nominal torque	T_N	mN.m	0.58	0.55	0.49
6	Nominal current	I_N	A	0.05	0.05	0.04
7	Stall torque	T_S	mN.m	5.5	7.6	6.4
8	Stall current	I_S	A	0.5	0.65	0.57
9	Max. efficiency	η	%	77.7	84.9	83.9

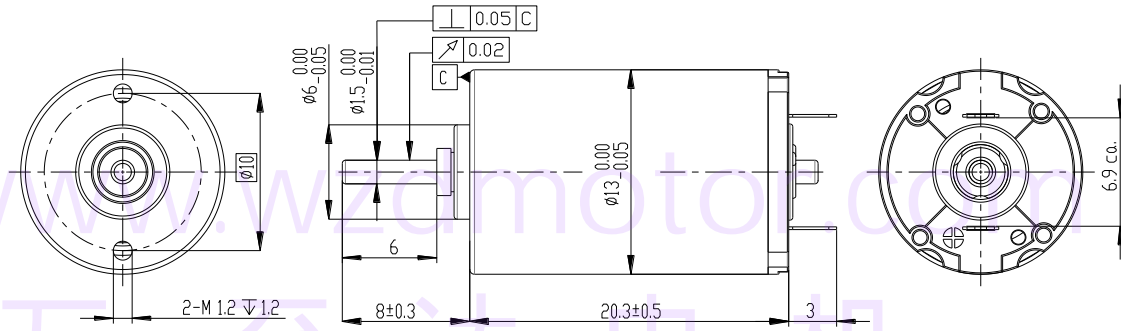
Characteristics						
10	Terminal resistance	R_{t-h}	Ω	24	18.46	21.05
11	Terminal inductance	L_{t-h}	mH	0.02	0.03	0.03
12	Torque constant	K_T	mN.m/A	11.1	11.7	11.3
13	Speed constant	K_n	rpm/V	887	788.2	744.5
14	Speed/torque gradient	K_v	rpm/mN.m	1860	1288	1574
15	Mechanical time constant	K_m	ms	8.8	8.7	8.7
16	Rotor inertia	J	gcm^2	0.50	0.49	0.49

Thermal data		
17	Thermal resistance housing-ambient	46 K/W
18	Thermal resistance winding-housing	14 K/W
19	Thermal time constant winding	5.18 s
20	Thermal time constant motor	76.1 s
21	Ambient temperature	-20...+65°C
22	Max. permissible winding temperature	+85°C

Mechanical data (sleeve bearings)		
23	Max. permissible speed	12000 rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.014 mm
26	Max. axial load (dynamic)	0.8 N
27	Max. force for press fits (static)	15 N
28	Max. radial loading, 5 mm from flange	1.4 N

Configuration
 Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





Scale:3:1 Unit:mm

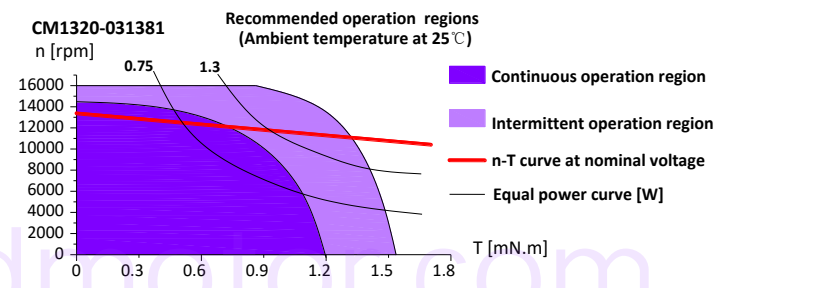
Specifications		A	B
Brushes			Graphite Brushes
Bearings		Ball Bearings	Sleeve Bearings
Segments of Commutator			5 Segments
Number of pole pairs			1
Style of leadwire		Cable	Terminals
Weight			12.5g

			CM1320 Series			031381	061381	091280						
Motor Data														
1	Nominal voltage	U_N	V	3	6.0	9.0								
2	No load speed	n_0	rpm	13300	12800	12400								
3	No load current	I_0	A	0.04	0.021	0.015								
4	Nominal speed	n_N	rpm	12062	11644	11197								
5	Nominal torque	T_N	mN.m	1.02	1.04	1.17								
6	Nominal current	I_N	A	0.39	0.211	0.14								
7	Stall torque	T_S	mN.m	11.0	11.5	12.1								
8	Stall current	I_S	A	3.8	2.13	1.3								
9	Max. efficiency	η	%	80.5	81.1	79.7								

Characteristics														
10	Terminal resistance	R_{t-h}	Ω	0.79	2.82	6.92								
11	Terminal inductance	L_{t-h}	mH	0.02	0.03	0.03								
12	Torque constant	K_T	mN.m/A	2.93	5.45	9.42								
13	Speed constant	K_n	rpm/V	4480	2155	1394								
14	Speed/torque gradient	K_v	rpm/mN.m	881	905	746								
15	Mechanical time constant	K_m	ms	7.56	8.53	8.59								
16	Rotor inertia	J	gcm ²	0.82	0.9	1.10								

Thermal data		
17	Thermal resistance housing-ambient	46K/W
18	Thermal resistance winding-housing	14K/W
19	Thermal time constant winding	5.18 s
20	Thermal time constant motor	231 s
21	Ambient temperature	-20...+85°C
22	Max. permissible winding temperature	+125°C

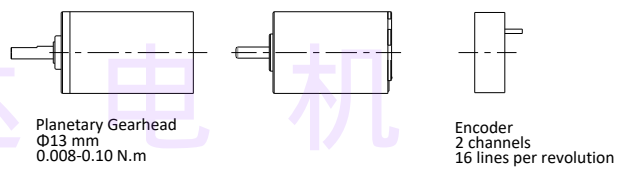
Operating Characteristic Curve

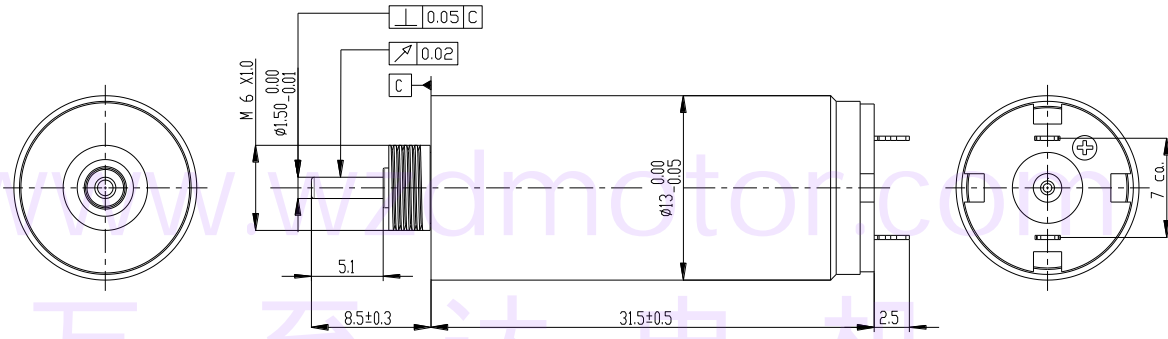


Mechanical data (sleeve bearings)		
23	Max. permissible speed	15000 rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.014 mm
26	Max. axial load (dynamic)	0.8 N
27	Max. force for press fits (static)	15 N
28	Max. radial loading, 5 mm from flange	1.4 N

Configuration

Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers





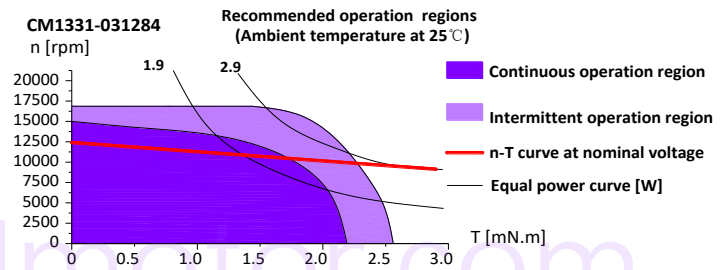
Scale:3:1 Unit:mm

Specifications	A	B
Brushes	Precious Metal Brushes	
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator	5 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	Terminals
Weight	18.9g	

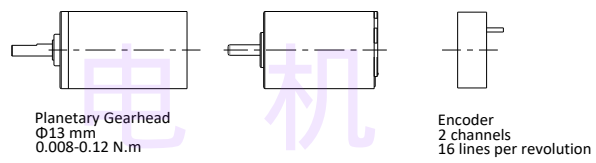
CM1331 Series			031284	060681	080882	121785
Motor Data						
1	Nominal voltage	U_N V	3.0	6.0	8.0	12.0
2	No load speed	n_0 rpm	12350	6032	8000	16800
3	No load current	I_0 A	0.03	0.009	0.012	0.015
4	Nominal speed	n_N rpm	11414	5484	7310	15544
5	Nominal torque	T_N mN.m	0.72	0.68	1.07	1.12
6	Nominal current	I_N A	0.366	0.09	0.12	0.18
7	Stall torque	T_S mN.m	9.5	7.5	12.5	15
8	Stall current	I_S A	4.46	0.9	1.35	2.3
9	Max. efficiency	η %	84.3	81	82	84.5
Characteristics						
10	Terminal resistance	R_{th} Ω	0.67	6.67	5.92	5.22
11	Terminal inductance	L_{th} mH	0.03	0.11	0.22	0.49
12	Torque constant	K_T mN.m/A	2.14	8.42	9.34	6.5
13	Speed constant	K_n rpm/V	4145	1015	1009	1409
14	Speed/torque gradient	K_v rpm/mN.m	1397	898	648	1539
15	Mechanical time constant	K_m ms	8.04	7.53	5.77	9.67
16	Rotor inertia	J gcm ²	0.55	0.80	0.85	0.6

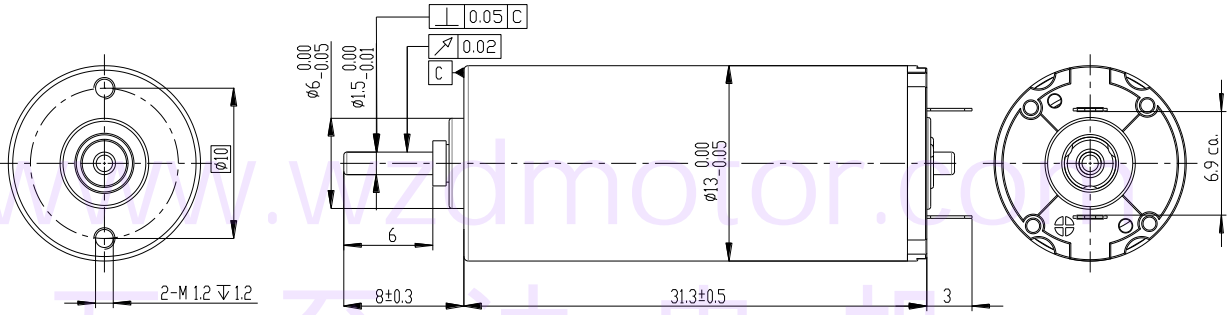
Thermal data	
17	Thermal resistance housing-ambient 33K/W
18	Thermal resistance winding-housing 7K/W
19	Thermal time constant winding 4.88 s
20	Thermal time constant motor 229 s
21	Ambient temperature -20...+65°C
22	Max. permissible winding temperature +85°C
Mechanical data (sleeve bearings)	
23	Max. permissible speed 17000 rpm
24	Axial play 0.05-0.15 mm
25	Radial play 0.014 mm
26	Max. axial load (dynamic) 0.8 N
27	Max. force for press fits (static) 15 N
28	Max. radial loading, 5 mm from flange 1.4 N

Operating Characteristic Curve



Configuration
 Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
 Bearing: Ball bearing/sleeve bearing
 Shaft: Length/diameter/flat face
 Electric connection: Terminals or cable/alignment of connection/ cable length/connector type
 More: Customized according to customer requirements, please contact our sales engineers



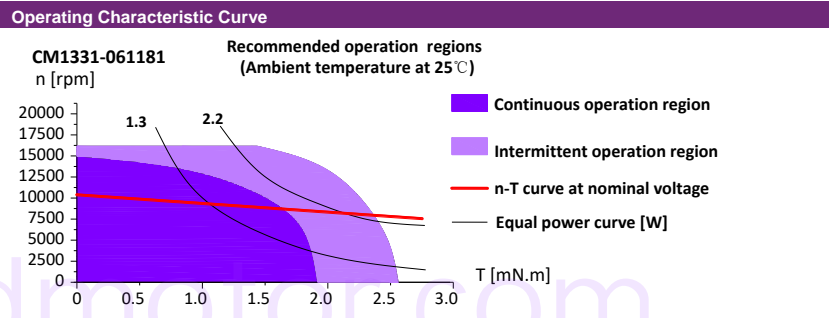


Scale:3:1 Unit:mm

Specifications	A	B
Brushes		Graphite Brushes
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator		5 Segments
Number of pole pairs		1
Style of leadwire	Cable	Terminals
Weight		20.3g

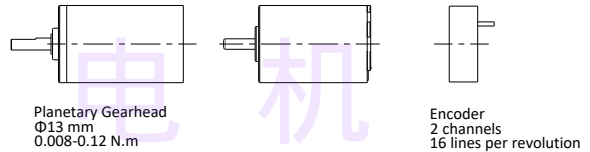
CM1331 Series			061181	121080	241181	
Motor Data						
1	Nominal voltage	U_N	V	6.0	12.0	24.0
2	No load speed	n_0	rpm	10700	10000	10600
3	No load current	I_0	A	0.02	0.012	0.006
4	Nominal speed	n_N	rpm	9749	9054	9636
5	Nominal torque	T_N	mN.m	0.89	0.9	0.89
6	Nominal current	I_N	A	0.205	0.115	0.06
7	Stall torque	T_S	mN.m	10.0	9.5	9.8
8	Stall current	I_S	A	2.1	1.1	0.5
9	Max. efficiency	η	%	81.4	80.2	81.0
Characteristics						
10	Terminal resistance	R_{t-h}	Ω	2.86	10.91	40.0
11	Terminal inductance	L_{t-h}	mH	0.11	0.49	1.8
12	Torque constant	K_T	mN.m/A	4.81	8.73	16.5
13	Speed constant	K_n	rpm/V	1800	843	446
14	Speed/torque gradient	K_v	rpm/mN.m	1180	1366	1403
15	Mechanical time constant	K_m	ms	6.3	8.59	8.82
16	Rotor inertia	J	gcm ²	0.51	0.60	0.6

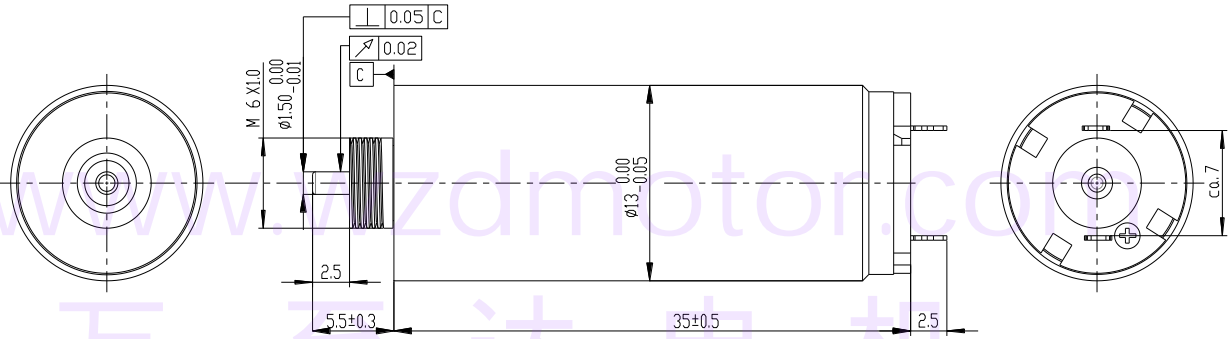
Thermal data		
17	Thermal resistance housing-ambient	33 K/W
18	Thermal resistance winding-housing	7 K/W
19	Thermal time constant winding	4.88 s
20	Thermal time constant motor	259 s
21	Ambient temperature	-20...+65°C
22	Max. permissible winding temperature	+85°C



Mechanical data (sleeve bearings)		
23	Max. permissible speed	16000 rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.014 mm
26	Max. axial load (dynamic)	0.8 N
27	Max. force for press fits (static)	15 N
28	Max. radial loading, 5 mm from flange	1.4 N

Configuration
 Housing: Integer style/split style (Include iron flange and aluminium flange)
 Commutator: Pressure-sensitive/electric capacity(with precious metal brushes or graphite)
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 Shaft: Length/diameter/flat face
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Scale:3:1 Unit:mm

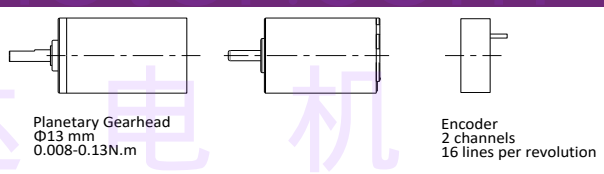
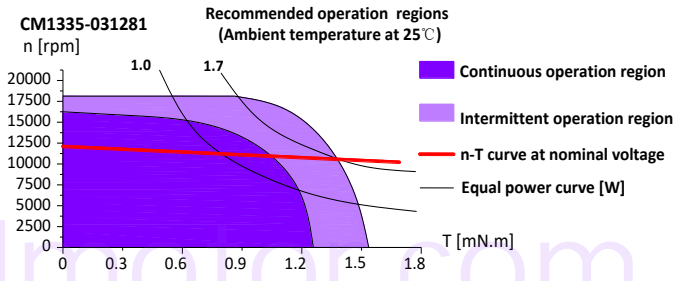
Specifications	A	B
Brushes	Precious Metal Brushes	
Bearings	Ball Bearings	Sleeve Bearings
Segments of Commutator	5 Segments	
Number of pole pairs	1	
Style of leadwire	Cable	Terminals
Weight	25g	

CM1335 Series			031281	121282						
Motor Data										
1	Nominal voltage	U_N	V	3.0	12.0					
2	No load speed	n_0	rpm	12100	12000					
3	No load current	I_0	A	0.040	0.01					
4	Nominal speed	n_N	rpm	10987	10938					
5	Nominal torque	T_N	mN.m	0.99	1.2					
6	Nominal current	I_N	A	0.395	13.5					
7	Stall torque	T_s	mN.m	10.8	13.5					
8	Stall current	I_s	A	3.9	1.06					
9	Max. efficiency	η	%	80.8	81.5					
Characteristics										
10	Terminal resistance	R_{t-h}	Ω	0.77	11.32					
11	Terminal inductance	L_{t-h}	mH	0.025	0.49					
12	Torque constant	K_T	mN.m/A	2.8	12.86					
13	Speed constant	K_n	rpm/V	4075	1010					
14	Speed/torque gradient	K_v	rpm/mN.m	938	654					
15	Mechanical time constant	K_m	ms	5.9	4.11					
16	Rotor inertia	J	gcm^2	0.60	0.60					

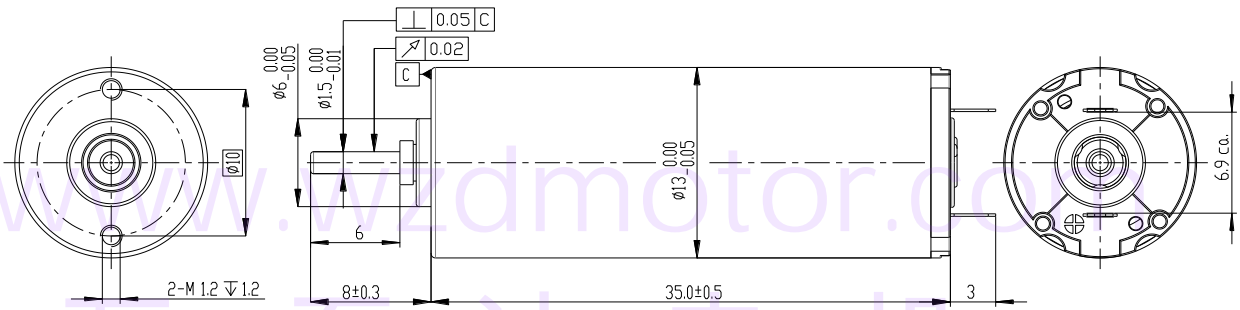
Thermal data	
17	Thermal resistance housing-ambient 33K/W
18	Thermal resistance winding-housing 7K/W
19	Thermal time constant winding 4.88 s
20	Thermal time constant motor 229 s
21	Ambient temperature -40...+65°C
22	Max. permissible winding temperature +85°C

Mechanical data (sleeve bearings)	
23	Max. permissible speed 18000 rpm
24	Axial play 0.05-0.15 mm
25	Radial play 0.014 mm
26	Max. axial load (dynamic) 0.8 N
27	Max. force for press fits (static) 15 N
28	Max. radial loading, 5 mm from flange 1.4 N

Operating Characteristic Curve



Configuration
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Scale:3:1 Unit:mm

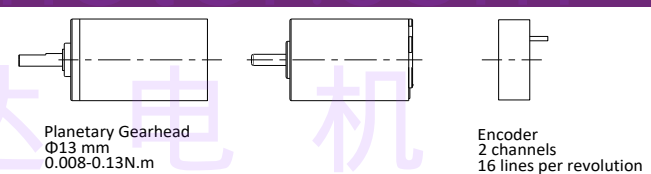
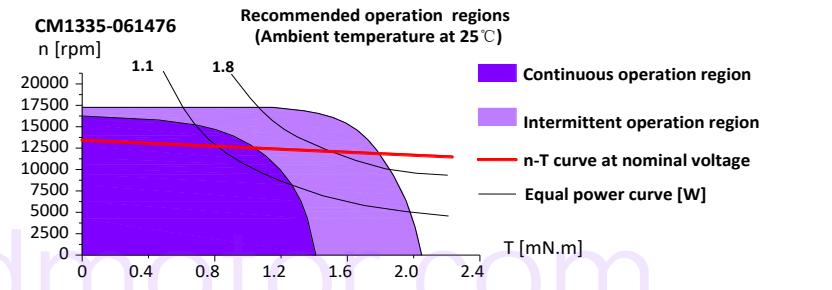
Specifications		A	B
Brushes			Graphite Brushes
Bearings		Ball Bearings	Sleeve Bearings
Segments of Commutator			5 Segments
Number of pole pairs			1
Style of leadwire		Cable	Terminals
Weight			25g

CM1335 Series			031378	061476	091477	
Motor Data						
1	Nominal voltage	U_N	V	3.0	6.0	9.0
2	No load speed	n_0	rpm	13000	13700	13800
3	No load current	I_0	A	0.05	0.03	0.02
4	Nominal speed	n_N	rpm	11662	12171	12516
5	Nominal torque	T_N	mN.m	1.39	1.43	1.32
6	Nominal current	I_N	A	0.436	0.239	0.195
7	Stall torque	T_S	mN.m	13.5	12.8	14.2
8	Stall current	I_S	A	3.8	1.9	1.3
9	Max. efficiency	η	%	78.4	76.4	76.7
Characteristics						
10	Terminal resistance	R_{t-h}	Ω	0.79	3.16	6.92
11	Terminal inductance	L_{t-h}	mH	0.02	0.09	0.16
12	Torque constant	K_T	mN.m/A	3.6	6.84	11.09
13	Speed constant	K_n	rpm/V	4391	2320	1557
14	Speed/torque gradient	K_v	rpm/mN.m	582	644	537
15	Mechanical time constant	K_m	ms	4.14	5.80	5.51
16	Rotor inertia	J	gcm ²	0.68	0.86	0.98

Thermal data		
17	Thermal resistance housing-ambient	33 K/W
18	Thermal resistance winding-housing	7 K/W
19	Thermal time constant winding	4.88 s
20	Thermal time constant motor	259 s
21	Ambient temperature	-20...+65°C
22	Max. permissible winding temperature	+85°C

Mechanical data (sleeve bearings)		
23	Max. permissible speed	17000 rpm
24	Axial play	0.05-0.15 mm
25	Radial play	0.014 mm
26	Max. axial load (dynamic)	0.8 N
27	Max. force for press fits (static)	15 N
28	Max. radial loading, 5 mm from flange	1.4 N

Operating Characteristic Curve



Configuration
 Housing: Integer style/split style (Include iron flange and aluminium flange)
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