

# ALUMINUM ELECTROLYTIC CAPACITORS

## LZG series ULTRAL LOW IMPEDANCE, HIGH RELIABILITY

- ULTRA. Low impedance at 100kHz
- Load life:105°C 4000~7000 hours
- HIGH QUALITY

### SPECIFICATIONS

Item	Performance Characteristics																																
Operating Temperature Range	-55°C~105°C																																
Rated Voltage Range	6.3~100W.V.																																
Capacitance Range	0.22~18000uF																																
Capacitance Tolerance	±20%, 120Hz, 20°C																																
Leakage Current (MAX)	I=0.01CV or 3uA whichever is greater.(after 2 minutes) I=Leakage Current(uA), C=Nominal Capacitance(uF), V=Rated Voltage(V)																																
Dissipation Factor (tan δ)	When nominal capacitance is over 1000uF, tan δ shall be added 0.02 to the listed value with increase of every 1000uF, <table border="1"> <thead> <tr> <th>Rated voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>80</th> <th>100</th> <th>MAX</th> </tr> </thead> <tbody> <tr> <td>Tan δ</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.09</td> <td>0.08</td> <td>(20°C 120Hz)</td> </tr> </tbody> </table>	Rated voltage (V)	6.3	10	16	25	35	50	63	80	100	MAX	Tan δ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.09	0.08	(20°C 120Hz)										
Rated voltage (V)	6.3	10	16	25	35	50	63	80	100	MAX																							
Tan δ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.09	0.08	(20°C 120Hz)																							
Low Temperature Stability Impedance Ratio	<table border="1"> <thead> <tr> <th>Rated Voltage(V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>80</th> <th>100</th> <th>MAX</th> </tr> </thead> <tbody> <tr> <td>Z(-25°C)/Z(+20°C)</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td rowspan="2">(120Hz)</td> </tr> <tr> <td>Z(-55°C)/Z(+20°C)</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	Rated Voltage(V)	6.3	10	16	25	35	50	63	80	100	MAX	Z(-25°C)/Z(+20°C)	4	3	2	2	2	2	2	2	2	(120Hz)	Z(-55°C)/Z(+20°C)	8	6	4	3	3	3	3	3	3
Rated Voltage(V)	6.3	10	16	25	35	50	63	80	100	MAX																							
Z(-25°C)/Z(+20°C)	4	3	2	2	2	2	2	2	2	(120Hz)																							
Z(-55°C)/Z(+20°C)	8	6	4	3	3	3	3	3	3																								
Load Life	After life test at conditions stated in the table below, the capacitors shall meet the following requirement <table border="1"> <thead> <tr> <th>Leakage Current</th> <th>Capacitance Change</th> <th>Dissipation Factor</th> <th>Case Dia</th> <th>Life Time(hrs)</th> </tr> </thead> <tbody> <tr> <td>Not more than the specified value</td> <td>Within ±25% of initial value.</td> <td>Not more than 200% of the specified value</td> <td>φ D ≤ 6.3</td> <td>4000</td> </tr> <tr> <td></td> <td></td> <td></td> <td>φ D = 8</td> <td>5000</td> </tr> <tr> <td></td> <td></td> <td></td> <td>φ D = 10</td> <td>6000</td> </tr> <tr> <td></td> <td></td> <td></td> <td>φ D ≥ 12.5</td> <td>7000</td> </tr> </tbody> </table>	Leakage Current	Capacitance Change	Dissipation Factor	Case Dia	Life Time(hrs)	Not more than the specified value	Within ±25% of initial value.	Not more than 200% of the specified value	φ D ≤ 6.3	4000				φ D = 8	5000				φ D = 10	6000				φ D ≥ 12.5	7000							
Leakage Current	Capacitance Change	Dissipation Factor	Case Dia	Life Time(hrs)																													
Not more than the specified value	Within ±25% of initial value.	Not more than 200% of the specified value	φ D ≤ 6.3	4000																													
			φ D = 8	5000																													
			φ D = 10	6000																													
			φ D ≥ 12.5	7000																													
Shelf Life	After leaving capacitors under no load at 105°C for 1000 hours and applying voltage according to JIS C-5102 4-3, they meet the specified value for load life characteristics listed above.																																
Standard	According to JIS C 5141																																

### MULTIPLIER FOR RIPPLE CURRENT

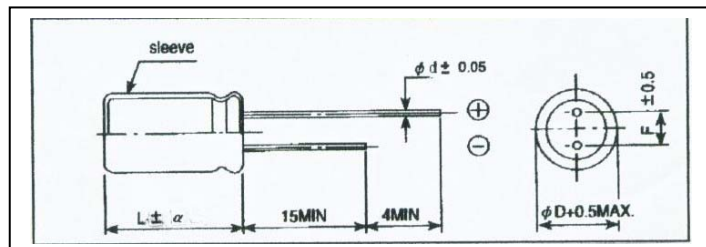
#### Frequency coefficient

Frequency(Hz) Cap(uF)	60(50)	120	1k	10k	≥ 100k
0.22-33	0.45	0.55	0.75	0.90	1.00
39-330	0.60	0.70	0.85	0.95	1.00
390-1000	0.65	0.75	0.90	0.98	1.00
1200-18000	0.75	0.80	0.95	1.00	1.00

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## LZG series ULTRAL LOW IMPEDANCE, HIGH RELIABILITY

### DIMENSIONS (mm)



$\varphi D$	5	6.3	8	10	12.5	16	18
$\varphi d$	0.5		0.6			0.8	
F	2.0	2.5	3.5	5.0		7.5	
$\alpha$	$L \leq 16: \alpha = 1.5, L \geq 20: \alpha = 2.0$						

### STANDARD SIZE PERMISSIBLE RIPPLE CURRENT

Ripple Current (mA 105°C, 100kHz) r.m.s

Rated voltage 6.3V (0J)				
Nominal capacitance (uF)	Size $\varphi D \times L$ (mm)	Ripple Current	Impedance ( $\Omega$ MAX)	
			20°C, 100kHz	-10°C, 100kHz
47	5 x11	130	1.68	4.12
68	5 x11	136	1.48	3.59
120	5 x11	150	0.66	1.98
150	5 x11	200	0.57	1.20
220	5 x11	237	0.48	1.02
220	6.3 x11	290	0.35	0.75
330	6.3 x11	350	0.21	0.48
470	6.3 x11	505	0.175	0.385
390	8 x11.5	466	0.18	0.410
470	8 x11.5	582	0.15	0.338
680	8 x11.5	660	0.13	0.29
820	8 x11.5	755	0.108	0.24
1000	8 x11.5	755	0.108	0.24
	10 x12.5	1050	0.070	0.145
1200	8 x20	1050	0.070	0.15
	10 x12.5	1225	0.058	0.125
1500	8 x20	1225	0.058	0.125
	10 x12.5	870	0.080	0.16
1800	10 x16	1300	0.058	0.123
2200	10 x20	1525	0.044	0.098
2700	10 x23	1780	0.040	0.088
	12.5 x20	1950	0.041	0.087
3300	10 x30	1917	0.032	0.073
	12.5 x20	1910	0.035	0.080
3900	12.5 x25	2230	0.026	0.055
	16 x20	2210	0.043	0.090
4700	12.5 x30	2650	0.024	0.052
	16 x25	2790	0.022	0.050
5600	12.5 x35	2880	0.020	0.046
	16 x25	2765	0.020	0.046
6800	12.5 x40	3350	0.017	0.039
	16 x25	2930	0.020	0.048
	18 x20	2860	0.026	0.054
8200	16 x31.5	3450	0.017	0.035
	18 X25	3610	0.016	0.034
10000	16 x35.5	3610	0.015	0.034
	18 x25	3140	0.019	0.043
12000	16 x40	4100	0.012	0.028
	18 x31.5	4170	0.015	0.033
15000	18 x35.5	4220	0.014	0.032
18000	18 x40	4300	0.011	0.024

# ALUMINUM ELECTROLYTIC CAPACITORS

## LZG series ULTRAL LOW IMPEDANCE, HIGH RELIABILITY

Ripple Current (mA 105°C, 100kHz) r.m.s

Rated voltage 10V (1A)				
Nominal capacitance (uF)	Size	Ripple Current	Impedance ( $\Omega$ MAX)	
	$\phi$ D x L (mm)		20°C, 100kHz	-10°C, 100kHz
47	5 x11	150	0.66	1.98
68	5 x11	175	0.615	1.59
100	5 x11	200	0.57	1.20
150	5 x11	237	0.48	1.02
220	5 X11	256	0.435	0.93
	6.3 x11	350	0.21	0.48
270	6.3 x11	427	0.19	0.43
330	6.3 x11	505	0.17	0.385
	8 x11.5	582	0.15	0.338
390	8 x11.5	620	0.14	0.314
470	8 x11.5	660	0.13	0.29
560	8 x11.5	700	0.12	0.265
680	8 x11.5	755	0.108	0.24
	10 x12.5	870	0.080	0.16
820	8 x20	1000	0.074	0.16
	10 x12.5	960	0.075	0.153
1000	8 X20	1050	0.070	0.15
	10 x16	1230	0.060	0.13
1200	10 x20	1400	0.046	0.10
1500	10 x20	1530	0.042	0.093
	12.5 X16	1450	0.049	0.093
1800	10 x20	1595	0.040	0.089
	12.5 X20	1680	0.042	0.095
2200	10 x28	1920	0.030	0.070
	12.5 x20	1910	0.035	0.080
	16 x16	1950	0.041	0.087
2700	12.5 x25	2070	0.031	0.068
	18 x16	2210	0.043	0.090
3300	12.5 x25	2230	0.026	0.055
3900	12.5 x30	2650	0.024	0.052
	16 X20	2530	0.027	0.062
4700	12.5 x30	2765	0.022	0.056
	16 x25	2730	0.024	0.055
5600	16 x25	2930	0.021	0.048
	18 x20	2860	0.026	0.054
6800	16 x31.5	3450	0.017	0.035
	18 x25	3140	0.019	0.043
8200	16 x35.5	3610	0.015	0.034
	18 x31.5	4170	0.015	0.033
10000	16 x40	4100	0.012	0.028
	18 x35.5	4220	0.014	0.032
12000	18 x40	4300	0.011	0.024



# ALUMINUM ELECTROLYTIC CAPACITORS

## LZG series ULTRAL LOW IMPEDANCE, HIGH RELIABILITY

Ripple Current (mA 105°C, 100kHz) r.m.s

Rated voltage 16V (1C)				
Nominal capacitance (uF)	Size	Ripple Current	Impedance (Ω MAX)	
	φ D×L(mm)		20°C, 100kHz	-10°C, 100kHz
1	5 x11	71	3.78	8.15
3.3	5 x11	100	2.75	6.14
10	5 x11	130	1.68	4.12
22	5 x11	136	1.48	3.59
39	5 x11	143	1.05	2.42
47	5 x11	150	0.62	1.25
56	5 x11	200	0.57	1.20
68	5 x11	250	0.48	1.02
100	5 x11	275	0.45	0.93
120	6.3 x11	350	0.21	0.48
150	6.3 x11	427	0.19	0.43
220	8 x11.5	582	0.15	0.338
330	8 x11.5	660	0.13	0.29
390	8 x11.5	700	0.12	0.265
470	8 x11.5	755	0.108	0.24
	10 x12.5	870	0.080	0.16
560	8 X16	850	0.098	0.21
	10 x12.5	960	0.075	0.16
680	8 X20	1050	0.069	0.15
	10 x16	1230	0.060	0.13
820	10 x16	1272	0.057	0.123
1000	10 x20	1400	0.046	0.10
	12.5 x16	1450	0.049	0.11
1200	10 X23	1650	0.042	0.096
	12.5 x16	1680	0.042	0.095
1500	10 x28	1920	0.030	0.070
	12.5 x20	1910	0.035	0.080
1800	12.5 x20	1990	0.033	0.074
2200	12.5 x20	2070	0.031	0.068
	18 x16	2210	0.043	0.090
2700	12.5 x25	2440	0.025	0.054
	16 x20	2530	0.027	0.062
3300	12.5 x30	2765	0.022	0.049
	16 X25	2730	0.024	0.055
3900	16 x25	2930	0.020	0.048
	18 x20	2860	0.026	0.054
4700	16 x31.5	3450	0.017	0.035
	18 x25	3140	0.019	0.043
5600	16 x31.5	3530	0.016	0.035
	18 x31.5	4170	0.015	0.033
6800	16 x40	4100	0.012	0.028
	18 x35.5	4195	0.015	0.033
8200	18 x35.5	4220	0.014	0.032
10000	18 x40	4300	0.011	0.024



# ALUMINUM ELECTROLYTIC CAPACITORS

## LZG series ULTRAL LOW IMPEDANCE, HIGH RELIABILITY

Ripple Current (mA 105°C, 100kHz) r.m.s

Rated voltage 25V (1E)				
Nominal capacitance (uF)	Size	Ripple Current	Impedance (Ω MAX)	
	φ DxL(mm)		20°C, 100kHz	-10°C, 100kHz
10	5 x11	148	0.9	1.98
22	5 x11	170	0.74	1.59
33	5 x11	185	0.66	1.40
39	5 x11	193	0.62	1.30
47	5 x11	200	0.57	1.20
56	5 x11	217	0.53	1.11
68	6.3 x11	275	0.39	0.84
82	6.3 x11	310	0.30	0.66
100	6.3 x11	350	0.21	0.48
120	6.3 x11	505	0.19	0.385
150	6.3 x11	582	0.18	0.338
180	8 x11.5	620	0.16	0.314
220	8 x11.5	660	0.13	0.29
330	8 x16	850	0.086	0.19
	10 X12.5	870	0.080	0.16
390	8 x20	1000	0.074	0.16
	10 X12.5	960	0.075	0.152
470	8 x20	1050	0.069	0.15
	10 x16	1230	0.060	0.13
560	10 x16	1272	0.057	0.123
680	10 x16	1315	0.053	0.115
820	10 x20	1525	0.044	0.098
1000	10 x28	1920	0.030	0.070
	12.5 x16	1680	0.042	0.095
1200	12.5 x20	1990	0.033	0.074
	18 x16	2210	0.043	0.090
1500	12.5 x25	2230	0.026	0.055
1800	12.5 x30	2650	0.024	0.052
	16 x20	2530	0.027	0.062
2200	12.5 x30	2765	0.022	0.049
	16 x25	2730	0.034	0.055
2500	12.5 x30	2765	0.022	0.049
2700	16 x25	2930	0.020	0.048
3300	16 x31.5	3450	0.017	0.035
3900	18 x31.5	4170	0.015	0.033
4700	16 x40	4100	0.012	0.028
	18 x35.5	4220	0.014	0.032
5600	18 x40	4300	0.011	0.024

# ALUMINUM ELECTROLYTIC CAPACITORS

## LZG series ULTRAL LOW IMPEDANCE, HIGH RELIABILITY

Ripple Current (mA 105°C, 100kHz) r.m.s

Rated voltage 35V (1V)				
Nominal capacitance (uF)	Size φ DxL(mm)	Ripple Current	Impedance (Ω MAX)	
			20°C, 100kHz	-10°C, 100kHz
10	5 x11	150	0.86	1.48
22	5 x11	170	0.65	1.28
27	5 x11	185	0.61	1.24
33	5 x11	200	0.57	1.20
39	5 x11	218	0.52	1.11
47	6.3 x11	275	0.39	0.84
56	6.3 x11	350	0.31	0.48
68	6.3 x11	505	0.26	0.385
82	6.3 x11	543	0.24	0.361
100	6.3 x11	582	0.21	0.337
	8 x11.5	621	0.14	0.314
120	8 x16	673	0.127	0.286
	10 X12.5			
150	8 X16	707	0.119	0.27
180	8 x16	755	0.108	0.24
220	8 x16	850	0.086	0.19
	10 X12.5	870	0.080	0.16
330	8 x20	1140	0.065	0.14
	10 x16	1230	0.060	0.13
390	10 x16	1272	0.057	0.123
470	10 X20	1400	0.046	0.100
	12.5 x16	1450	0.049	0.11
560	10 x23	1650	0.042	0.096
	12.5 x20	1760	0.038	0.082
680	10 x25	1785	0.036	0.083
	12.5 x20	1910	0.035	0.082
820	12.5 x25	2150	0.030	0.063
1000	12.5 x25	2230	0.026	0.055
1200	12.5 x30	2650	0.024	0.052
	16 x20	2530	0.027	0.062
1500	12.5 x30	2765	0.023	0.049
1800	12.5 x40	3350	0.022	0.039
	16 x25	2930	0.020	0.048
2200	16 x25	3190	0.019	0.042
2700	16 x35.5	3610	0.015	0.034
	18 x31.5	4170	0.015	0.033
3300	16 x40	4100	0.012	0.028
	18 x35.5	4220	0.014	0.032
3900	18 x40	4300	0.011	0.024
4700	18 x45	4400	0.010	0.022



# ALUMINUM ELECTROLYTIC CAPACITORS

## LZG series ULTRAL LOW IMPEDANCE, HIGH RELIABILITY

Ripple Current (mA 105°C, 100kHz) r.m.s

Rated voltage 50V (1H)				
Nominal capacitance (uF)	Size	Ripple Current	Impedance (Ω MAX)	
	φ D xL(mm)		20°C, 100kHz	-10°C, 100kHz
0.22	5 x11	49	9.4	18.72
0.47	5 x11	60	5.28	12.35
0.68	5 x11	66	4.53	10.25
1	5 x11	71	3.78	8.15
2.2	5 x11	85	2.28	5.52
3.3	5 x11	105	1.98	4.82
4.7	5 x11	130	1.68	4.12
6.8	5 x11	136	1.48	3.59
10	5 x11	142	1.28	3.05
18	5 X11	166	0.98	2.285
22	5 x11	190	0.68	1.52
27	5 x11	218	0.59	1.30
33	6.3 x11	245	0.49	1.08
39	6.3 x11	258	0.43	0.97
47	6.3 x11	272	0.395	0.855
56	6.3 x11	300	0.30	0.63
68	6.3 x11	430	0.24	0.50
82	8 x11.5	495	0.205	0.445
100	8 x11.5	560	0.17	0.39
	10 X12.5	660	0.145	0.325
120	8 x16	740	0.12	0.28
	10 x12.5	710	0.133	0.293
150	8 x20	820	0.105	0.235
	10 x12.5	760	0.12	0.260
180	8 x20	910	0.090	0.190
220	8 X20	980	0.087	0.190
	10 x16	1050	0.084	0.190
330	10 x16	1190	0.071	0.155
390	10 X20	1350	0.056	0.110
	12.5 x20	1460	0.053	0.120
470	10 x20	1440	0.055	0.110
	12.5 x20	1660	0.045	0.099
560	12.5 x25	1960	0.034	0.071
680	12.5 x30	2130	0.030	0.066
820	12.5 x30	2200	0.028	0.058
	16 x20	2210	0.034	0.081
1000	12.5 x35	2715	0.025	0.050
	16 x25	2560	0.025	0.057
	18 x20	2490	0.036	0.086
1200	16 x31.5	3010	0.021	0.048
	18 x25	2740	0.026	0.059
1500	16 x35.5	3150	0.019	0.047
1800	16 x40	3710	0.016	0.036
	18 x31.5	3640	0.021	0.048
2200	18 x35.5	3680	0.017	0.040
	18 x40	3740	0.015	0.036
2700	18 x40	3800	0.014	0.032

# ALUMINUM ELECTROLYTIC CAPACITORS

## LZG series ULTRAL LOW IMPEDANCE, HIGH RELIABILITY

Ripple Current ( mA 105°C, 100kHz) r.m.s

Rated voltage 63V (1J)				
Nominal capacitance (uF)	Size	Ripple Current	Impedance (Ω MAX)	
	φ DxL(mm)		20°C, 100kHz	-10°C, 100kHz
10	5 x11	49	3.78	2.809
15	5 x11	60	2.2	4.83
22	6.3 x11	90	1.700	3.795
33	6.3 x11	120	1.2	2.76
47	8 x11.5	202	0.773	1.823
56	8 x11.5	230	0.63	1.51
68	8 x11.5	265	0.54	1.27
82	8 x16	300	0.45	1.03
	10 x12.5	290	0.43	0.90
100	8 x16	330	0.39	0.91
	10 X12.5	325	0.37	0.805
120	8 x20	360	0.33	0.79
	10 x16	360	0.31	0.71
150	10 x16	385	0.31	0.71
180	10 x20	470	0.20	0.50
220	10 x23	530	0.20	0.46
	12.5 X20	610	0.18	0.42
330	10 x28	705	0.14	0.36
	12.5 x20	740	0.14	0.33
390	12.5 x25	820	0.12	0.27
470	12.5 x30	910	0.10	0.24
560	12.5 x35	1050	0.083	0.17
	16 X25	1250	0.073	0.16
680	12.5 x40	1180	0.071	0.16
820	16 x31.5	1570	0.054	0.11
1000	16 x31.5	1680	0.050	0.105
1200	16 x40	2020	0.040	0.088
	18 x35.5	1790	0.038	0.08
1500	18 x40	2340	0.036	0.078





# ALUMINUM ELECTROLYTIC CAPACITORS

## LZG series ULTRAL LOW IMPEDANCE, HIGH RELIABILITY

Ripple Current (mA 105°C, 100kHz) r.m.s

Rated voltage 80V (1K)				
Nominal capacitance ( $\mu$ F)	Size	Ripple Current	Impedance ( $\Omega$ MAX)	
	$\varphi$ D x L (mm)		20°C, 100kHz	-10°C, 100kHz
68	10 x 16	325	0.37	0.81
100	10 x 23	470	0.20	0.50
330	12.5 x 30	1055	0.085	0.24
680	18 x 25	1342	0.066	0.17
	18 x 31.5	1630	0.047	0.10
1000	18 x 35.5	1790	0.040	0.084
	18 x 40	2340	0.036	0.070
1200	18 x 40	2500	0.030	0.066



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**LZG series** ULTRAL LOW IMPEDANCE, HIGH RELIABILITY

Ripple current (mA 105°C, 100kHz) r.m.s

Rated voltage 100V (2A)				
Nominal capacitance (uF)	Size $\varphi$ D xL(mm)	Ripple Current	Impedance ( $\Omega$ MAX)	
			20°C, 100kHz	-10°C, 100kHz
1	5 x11	20	7.3	14.8
4.7	5 x11	49	6.7	13.5
6.8	5 x11	60	2.2	4.83
10	6.3 x11	90	1.7	3.795
12	6.3 x11	100	1.5	3.278
15	6.3 x11	120	1.2	2.76
22	8 x11.5	175	0.92	2.13
27	8 x11.5	230	0.63	1.50
33	8 x11.5	252	0.60	1.40
39	8 x16	320	0.44	1.02
47	8 x20	340	0.39	0.91
	10 x12.5	290	0.43	0.90
56	8 x20	360	0.33	0.79
68	10 x16	360	0.31	0.71
82	10 x20	470	0.20	0.50
100	10 x20	500	0.20	0.48
	12.5 X20	580	0.195	0.475
120	10 x28	660	0.14	0.36
	12.5 X20	690	0.16	0.38
150	10 x28	700	0.14	0.35
	12.5 x25	740	0.14	0.325
180	16 x16	800	0.14	0.35
	12.5 x25	790	0.12	0.27
220	12.5 x25	850	0.11	0.255
	16 X20	1040	0.091	0.19
270	12.5 x35	1050	0.083	0.17
	16 x25	1250	0.073	0.16
330	12.5 x40	1200	0.070	0.16
	16 x25	1330	0.069	0.15
390	12.5 x40	1200	0.070	0.16
	16 x31.5	1570	0.054	0.11
	18 x25	1500	0.056	0.12
470	12.5 x40	1592	0.055	0.120
	16 x35.5	1800	0.045	0.099
	18 x25	1565	0.052	0.11
560	16 x40	2020	0.040	0.088
680	18 x35.5	1790	0.040	0.084
820	18 x40	2340	0.036	0.07