

# 300 & 1200 AutoBank

## ABB 300 & 1200 Automatic banks

ABB provides the complete solution to automatic power factor correction by packaging proven ABB components. ABB capacitors, contactors, power factor controllers, circuit breakers, fusible disconnects, and ABB pushbuttons together provide a system of the highest quality. ABB capacitors provide exceptional performance using an environmentally safe dry type design. ABB provides a complete range of contactors designed for capacitor switching. ABB's power factor controller offers an easy-to-use microprocessor-based controller with built-in power factor meter. A variety of disconnect options are available, including ABB circuit breakers, fusible and non-fusible switches.

### • Modularity

The modular design allows for the installation of additional power and switch modules as well as various options. Additional units may be connected in parallel. The number of capacitors and contactors included in the power modules depends on the automatic capacitor bank total power and the possible requirement for anti-resonance reactors.

### • Options

Anti-resonance reactors, filters, blown fuse indication, push to test blown fuse indication, non-fused and fused disconnect switches and circuit breakers are optional equipment items that can be factory installed in the automatic capacitor bank.

### • Approvals

ABB AutoBanks can be UL Panel Listed (UL File # E105450) per application.

### • High reliability

The ABB AutoBank incorporates the well-proven features of ABB dry type power factor correction capacitor technology. The use of an ABB power factor controller and endurance-tested ABB contactors ensure the highest reliability of the equipment.

### • Very low losses

Capacitor total losses are less than 0.5 watts per kvar. AutoBank total losses (without reactors), including accessories such as power factor controller and contactors are less than 1.5 watts per kvar.

### • Complete environmental acceptability

ABB capacitors have a dry type dielectric with no free liquid and do not pose any risk of leakage or pollution of the environment.

### • Unique sequential protection system

3 phase ABB capacitors are included with AutoBank products. These ABB capacitors utilize a patented Sequential protection System which ensures that each individual capacitor element is selectively and reliably disconnected from the circuit at the end of its life.

### • Long life

Low losses and the self-healing properties of ABB capacitor elements help to ensure long operating life.

## General information

### Description & technical data

### Catalog number explanation

#### • Safety

ABB capacitors are manufactured with vermiculite, a nonflammable and nontoxic material. The dry vermiculite safely absorbs any energy produced within the capacitor enclosure and prevents any fire hazard in case of failure. Unique cooling fins are fitted to surround each capacitor element providing effective heat dissipation.

#### • ABB power factor controller

ABB microprocessor-based and programmable Power Factor Controllers (PFCs) provide for the setting of the target power factor and the sensitivity of the system regulation. The PFCs maintain the selected power factor by switching on or off one or more capacitor steps depending on the load conditions of the system.

#### • Compact design ensures quick installation

The AutoBank has compact overall dimensions, top or bottom cable entry access, and lifting eyes aid in fast, efficient handling and installation.

#### Harmonic effect on capacitors

Combinations of capacitors and system reactances form series and parallel tuned circuits at certain frequencies. When harmonic sources are added to the system, this can result in higher than rated currents or higher than rated voltages on the system components.

AutoBanks can be designed to operate in harmonic environments. Tuning reactors are added to keep the capacitor currents within rated values and keep system voltages to desired levels. Tuning frequencies of the AutoBank can be designed to suit your system requirements. Please consult factory.

#### Contents

Standard ABB AutoBank products include:

- 1 to 12 capacitor steps, three phase
- Incoming line termination (unless other disconnecting means is specified)
- Capacitor stage indicator lights
- Power on light
- One ABB power factor controller equipped with:
  - Programmable thresholds which allow protection of the capacitor bank from over and undervoltage, overtemperature and excessive harmonic distortion
  - Full graphics LCD display
  - Manual/automatic control
  - Indication of capacitive or inductive load and the number of steps energized
  - Measures and monitors kW, kVA, kVAR, Vrms, Arms, Temperature, THDV(%), THDI(%), Hz, power factor, voltage harmonics V2-V49(%), current harmonics I2-I49(%), alarm
  - Customizable switching sequence, linear or circular - normal or integral - direct or progressive switching strategies available
  - Automatic adaptation to network phase rotation and C.T. terminals
- ABB contactors
- Discharge resistors
- Power fuses
- Control fuses
- Multi-tap CT range 500/5 – 4000/5 in 500/5 increments. Window size 4" x 7"

#### Technical data

**Rated voltage:** 240 – 600V, 50/60 Hz, 3 phase

**Standard kvar steps:** 25, 50 & 100 kvar (other kvar step sizes available)

**Control voltage:** 120V, 60 Hz

**Power factor setting:** Between 0.70 capacitive and 0.7 inductive

**C/k setting:** Between 0.05 and 1A

**Operation:** Automatic or manual with step indication. LED indication of the number of capacitors energized and the capacitive or inductive demand.

#### Discharge resistors included

**Dielectric losses:** Less than 0.2 watt/kvar

**Capacitor total losses:** Less than 0.5 watt/kvar

**Automatic bank total losses (without reactors) including accessories such as contactors and PF controller:** Less than 1.5 watt/kvar

#### ABB dry type self-healing capacitors

#### Capacitor dielectric test:

- Between terminals and container: 3.0 kV, 60 seconds.

#### Capacitor automatic bank test:

- Functional test
- Dielectric test

#### Enclosures:

- NEMA 1, 3R and Dustproof (RAL 7032, Beige)

#### Top or bottom cable entry

**Dimensions:** Per application

**Ambient temperature:** -40°C to +40°C

**Installation:** Lifting eyes are provided. Installation instructions are supplied with each unit.

#### NOTICE

**Placement and orientation of the current transformer are very important for the correct operation of the automatic capacitor bank.**

**A 4 G 600 C 6 A 2 P**

#### Catalog number explanation

**F = blown fuse indication, P = BFI with push to test**

**Harmonic tuning (Consult factory)**

**Switching sequence: A 1:1:1:1, B 1:2:2:2, C 1:2:4:4, D-1:1:2:2**

**Number of capacitors**

**Disconnecting means – B = terminal, C = circuit breaker,**

**D = non-fused disconnect switch, F = fused disconnect switch**

**kvar rating**

**Enclosure type – G = indoor, R = outdoor, D = dust proof**

**Voltage – 2 = 240, 4 = 480, 6 = 600**

**Model – A = 1200, AA = 300**

# AutoBank 300

## 240, 480 & 600 Volt, 60 Hz

**Low Voltage  
Network Quality**

### Description

Automatic power factor correction system in a compact design.

- Ratings: 240V: 25 – 150 kvar  
480V: 50 – 300 kvar  
600V: 100 – 300 kvar
- Size: 66"H x 32"W x 20"D
- Fusing: Each step and each phase
- Proven ABB Components:  
ABB dry-type capacitors  
ABB micro-processor based controller  
ABB contactors rated for capacitive switches
- CT Split core multi-tap CT provided with each AutoBank
- Options: ABB main circuit breaker  
Blown fuse indication  
Push-to-test blown fuse indication  
Outdoor enclosure  
Dustproof enclosure



### 240 Volt

kvar	Approximate weight (lbs)	Indoor		Outdoor		Dustproof	
		Catalog number	List price	Catalog number	List price	Catalog number	List price
25	600	AA2G25B5A	<b>Consult factory</b>	AA2R25B5A	<b>Consult factory</b>	AA2D25B5A	<b>Consult factory</b>
50	600	AA2G50B5A		AA2R50B5A		AA2D50B5A	
75	600	AA2G75B6A		AA2R75B6A		AA2D75B6A	
100	600	AA2G100B8A		AA2R100B8A		AA2D100B8A	
125	600	AA2G125B10A		AA2R125B10A		AA2D125B10A	
150	600	AA2G150B12A		AA2R150B12A		AA2D150B12A	

### 480 Volt

kvar	Approximate weight (lbs)	Indoor		Outdoor		Dustproof	
		Catalog number	List price	Catalog number	List price	Catalog number	List price
50	600	AA4G50B3B	<b>Consult factory</b>	AA4R50B3B	<b>Consult factory</b>	AA4D50B3B	<b>Consult factory</b>
75	600	AA4G75B5A		AA4R75B5A		AA4D75B5A	
100	600	AA4G100B5A		AA4R100B5A		AA4D100B5A	
125	600	AA4G125B5A		AA4R125B5A		AA4D125B5A	
150	600	AA4G150B6A		AA4R150B6A		AA4D150B6A	
175	600	AA4G175B7A		AA4R175B7A		AA4D175B7A	
200	600	AA4G200B8A		AA4R200B8A		AA4D200B8A	
225	600	AA4G225B9A		AA4R225B9A		AA4D225B9A	
250	600	AA4G250B10A		AA4R250B10A		AA4D250B10A	
300	600	AA4G300B12A		AA4R300B12A		AA4D300B12A	

### 600 Volt

kvar	Approximate weight (lbs)	Indoor		Outdoor		Dustproof	
		Catalog number	List price	Catalog number	List price	Catalog number	List price
100	600	AA6G100B5A	<b>Consult factory</b>	AA6R100B5A	<b>Consult factory</b>	AA6D100B5A	<b>Consult factory</b>
125	600	AA6G125B5A		AA6R125B5A		AA6D125B5A	
150	600	AA6G150B6A		AA6R150B6A		AA6D150B6A	
175	600	AA6G175B7A		AA6R175B7A		AA6D175B7A	
200	600	AA6G200B8A		AA6R200B8A		AA6D200B8A	
225	600	AA6G225B9A		AA6R225B9A		AA6D225B9A	
250	600	AA6G250B10A		AA6R250B10A		AA6D250B10A	
300	600	AA6G300B12A		AA6R300B12A		AA6D300B12A	

For other kvar sizes, number of steps, or options, please consult your local ABB Control representative.

NOTE: ABB automatic banks can be designed for harmonic environments. Please consult the factory concerning harmonic issues.

## AutoBank 1200

480 & 600 Volt, 60 Hz

### Description

Modular design delivers sought after features:

- 480V & 600V units
- Compact size
- Easy installation & start-up
  - Bottom & top cable entry
  - Simple to operate ABB controller
- Copper bus bar
- Fusing of each step and in each phase
- Proven ABB components
  - ABB dry type capacitors
  - ABB micro-processor based controller
  - ABB contactors rated for capacitor switching
- Options
  - ABB circuit breakers or fusible & non-fusible disconnect switches
  - Blown fuse indication
  - Push to test
  - Outdoor enclosures
  - Dustproof enclosures
- Consult factory for other sizes
- CT: split core, multi-tap current transformers provided with each AutoBank



### 480 Volt

kvar	Approximate weight (lbs)	Indoor		Outdoor		Dustproof	
		Catalog number	List price	Catalog number	List price	Catalog number	List price
100	1000	A4G100B2A	Consult factory	A4R100B2A	Consult factory	A4D100B2A	Consult factory
125	1000	A4G125B3B		A4R125B3B		A4D125B3B	
150	1000	A4G150B3A		A4R150B3A		A4D150B3A	
175	1000	A4G175B4B		A4R175B4B		A4D175B4B	
200	1000	A4G200B4A		A4R200B4A		A4D200B4A	
225	1000	A4G225B5B		A4R225B5B		A4D225B5B	
250	1000	A4G250B5A		A4R250B5A		A4D250B5A	
300	1000	A4G300B6A		A4R300B6A		A4D300B6A	
350	1000	A4G350B7A		A4R350B7A		A4D350B7A	
400	1200	A4G400B8A		A4R400B8A		A4D400B8A	
450	1200	A4G450B9A		A4R450B9A		A4D450B9A	
500	1200	A4G500B10A		A4R500B10A		A4D500B10A	
550	1200	A4G550B11A		A4R550B11A		A4D550B11A	
600	1200	A4G600B12A		A4R600B12A		A4D600B12A	
650	1900	A4G650B7B		A4R650B7B		A4D650B7B	
700	1900	A4G700B7A		A4R700B7A		A4D700B7A	
800	1900	A4G800B8A	A4R800B8A	A4D800B8A			
900	1900	A4G900B9A	A4R900B9A	A4D900B9A			
1000	2100	A4G1000B10A	A4R1000B10A	A4D1000B10A			
1100	2100	A4G1100B11A	A4R1100B11A	A4D1100B11A			
1200	2100	A4G1200B12A	A4R1200B12A	A4D1200B12A			

### 600 Volt

kvar	Approximate weight (lbs)	Indoor		Outdoor		Dustproof	
		Catalog number	List price	Catalog number	List price	Catalog number	List price
100	1000	A6G100B2A	Consult factory	A6R100B2A	Consult factory	A6D100B2A	Consult factory
125	1000	A6G125B3B		A6R125B3B		A6D125B3B	
150	1000	A6G150B3A		A6R150B3A		A6D150B3A	
175	1000	A6G175B4B		A6R175B4B		A6D175B4B	
200	1000	A6G200B4A		A6R200B4A		A6D200B4A	
225	1000	A6G225B5B		A6R225B5B		A6D225B5B	
250	1000	A6G250B5A		A6R250B5A		A6D250B5A	
300	1000	A6G300B6A		A6R300B6A		A6D300B6A	
350	1000	A6G350B7A		A6R350B7A		A6D350B7A	
400	1200	A6G400B8A		A6R400B8A		A6D400B8A	
450	1200	A6G450B9A		A6R450B9A		A6D450B9A	
500	1200	A6G500B10A		A6R500B10A		A6D500B10A	
550	1200	A6G550B11A		A6R550B11A		A6D550B11A	
600	1200	A6G600B12A		A6R600B12A		A6D600B12A	
650	1800	A6G650B7B		A6R650B7B		A6D650B7B	
700	1800	A6G700B7A		A6R700B7A		A6D700B7A	
800	1800	A6G800B8A	A6R800B8A	A6D800B8A			
900	1800	A6G900B9A	A6R900B9A	A6D900B9A			
1000	2100	A6G1000B10A	A6R1000B10A	A6D1000B10A			
1100	2100	A6G1100B11A	A6R1100B11A	A6D1100B11A			
1200	2100	A6G1200B12A	A6R1200B12A	A6D1200B12A			

## Factory modifications Approximate dimensions AutoBank

← 00.00 → Inches

### Current transformers (split core)

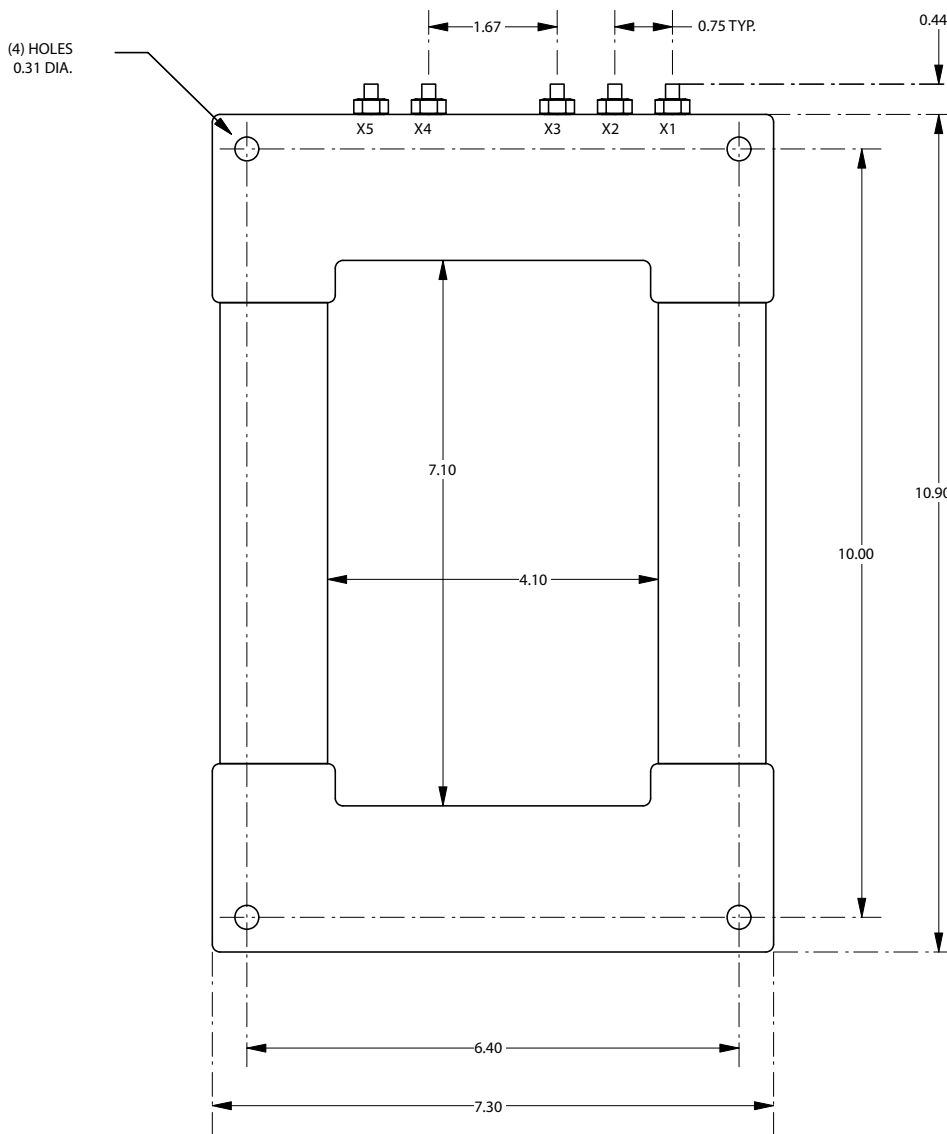
This split core current transformer is designed for use with automatic capacitor banks. The primary current will be determined by:

$$I = \frac{\text{kVA} \times 1000}{V \times 1.732}$$

The kVA value should represent the peak quarterhour demand. Split core current transformers are designed for assembly to an existing electrical installation without the need for dismantling the primary bus or cables. The portion of the transformer marked "this end removable" can be disassembled and then reassembled around the conductors that require current monitoring. The current transformer must have its secondary terminals short-circuited or the load connected before energizing the primary circuit.

Multi-tap split core current transformers provided with each AutoBank.

### Approximate dimensions

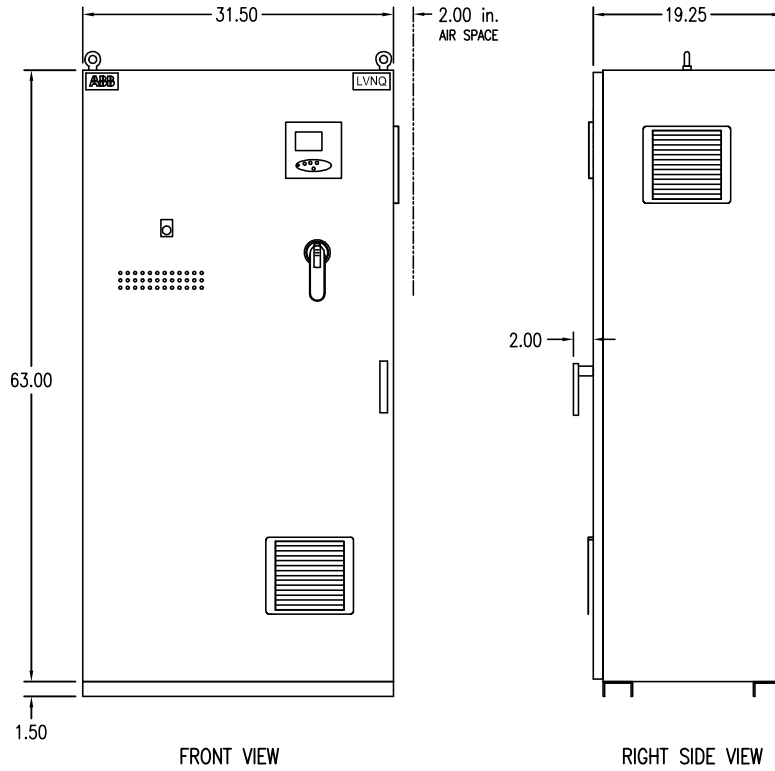


RATIO	TAPS
500:5	X1 - X2
1000:5	X3 - X4
1500:5	X2 - X3
2000:5	X1 - X3
2500:5	X2 - X4
3000:5	X1 - X4
3500:5	X2 - X5
4000:5	X1 - X5

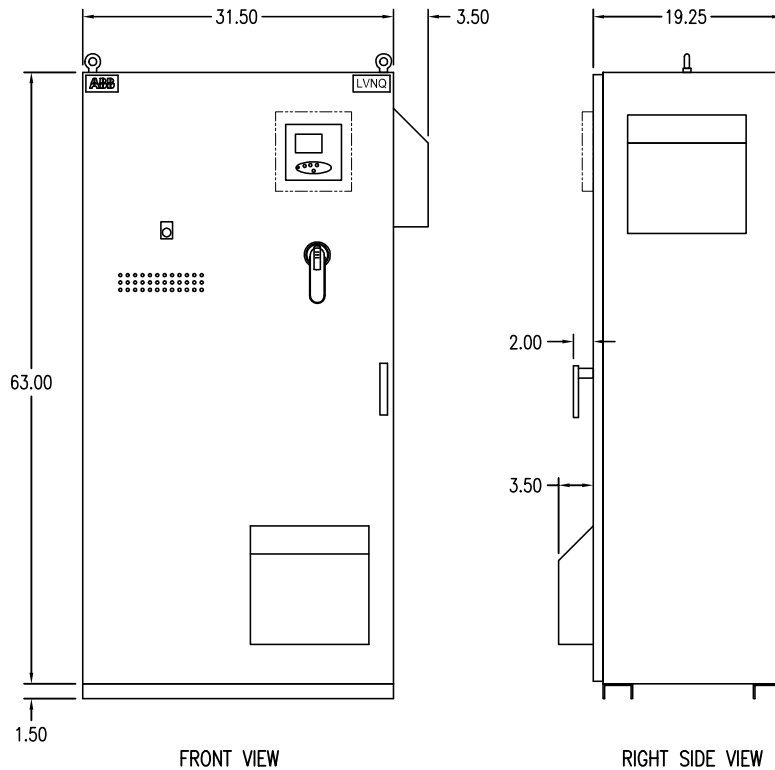
OVERALL DIMENSIONS: HEIGHT = 11.34, WIDTH = 7.30, DEPTH = 1.63

# Approximate dimensions AutoBank 300

← 00.00 → Inches



INDOOR BANK, NEMA 1

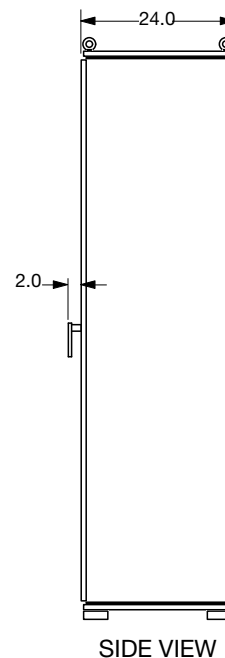
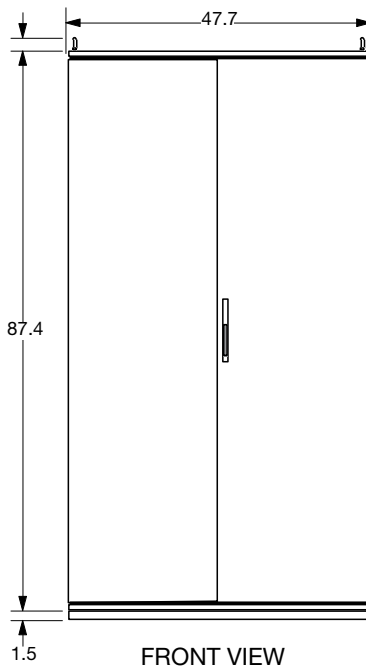
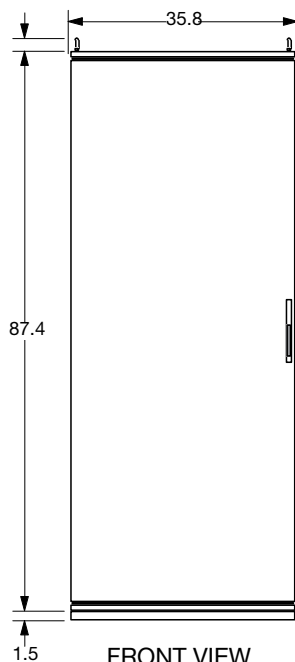


OUTDOOR BANK, NEMA 3R

## Approximate dimensions AutoBank 1200

Low Voltage  
Network Quality

← 00.00 → Inches



KVAR	OVERALL WIDTH			
	MAIN LUGS	CIRCUIT BREAKER	FUSED SWITCH	NON-FUSED SWITCH
100	36	36	36	36
125	36	36	36	36
150	36	36	36	36
175	36	36	36	36
200	36	36	36	36
225	36	36	36	36
250	36	36	36	36
300	36	36	36	36
350	36	36	48	48
400	36	36	48	48
450	48	48	72	72
500	48	48	—	72
550	48	48	—	72
600	48	48	—	72
650	72	72	—	84
700	72	84	—	84
800	72	84	—	84
900	84	96	—	96
1000	84	96	—	96
1100	84	96	—	120
1200	84	96	—	120