

HIGH POWER ELECTROMAGNET & POWER SUPPLIES

(RESISTIVE/PULSE/(D.C. & Ramp & HIGH FREQUENCY)

MODEL: MHPEM

Introduction: MHPEM series of high power electromagnets generating D.C. /modulated waveform in low frequency zone are available in more than 20 different model With power ranging from 10.0 to 5000.0 amps in various size and geometry with bipolar/quadrupolar Shape and pole diameter ranging from 20 -150 m.m./pole gap varying between 15-100 m.m. variable gap. High power electromagnets are water/oil cooled. These electromagnets find applications in Seismic, automobile, solid state physics experiments, nuclear physics, bio-medical, micro-electronics, /environmental/toxicology/polymers/heavy electrical engineering, MEMS, heat sink Paints/nuclear/power plant/process control & chemical engineering, packaging, semiconductor encapsulation, optics Clutch, damper, valve, special performance sensor actuators for linear/rotary motion control, magnets, metal casting;

Operating Principle: High current carrying air/water cooled multiple coils are placed around either soft iron/sintered composite/alloy pole. These magnetic materials have high saturation field and low remenance. Magnetic field produced is governed by faraday law of magnetics i.e.....

B = amere.turn / reluctance x pole area-----restricted to parametric variation and geometry of electromagnet

Company also offers pulse type electromagnets energized by ramp/pulse power supplies to achieve high peak magnetic field upto 9-10 tesla. These have different pole materials and needs better cooling provision and are to excite by harmonic free /high control speed power supplies to avoided early saturation of pole core, which otherwise derates electromagnets to as much as 100%.



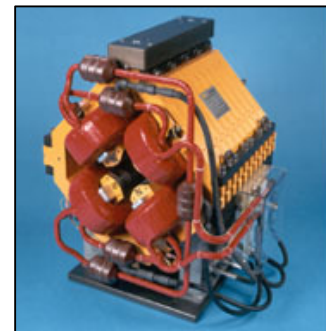
MHPEM-024100



MHPEM-100050



MHPEM-024100



MHPEM-100100

SPECIFICATIONS OF RESISTIVE ELECTROMAGNETS/ (D.C., Ramp)

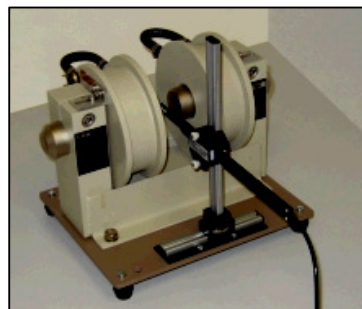
Power range<200.0 K.Watt

Model	Pole dia m.m.	Pole gap m.m.	Frame size LxBxH	B _{max} Tesla	Watts	Volts	Amps	PULSE/min	Cooling
MHPEM-025025	025	025	12X06x08	01.5	00500.0	25.0	010.00	120.0	Air
MHPEM-032050	032	050	12X06x08	01.5	00500.0	25.0	015.00	120.0	Air
MHPEM-050025	050	025	18X10X12	01.5	0750.0	50.0	015.00	120.0	Air
MHPEM-050050	050	050	18X10X12	01.5	01250.0	50.0	025.0	120.0	Air
MHPEM-062062	062	062	24X18X08	01.5	02500.0	050.0	050.0	120.0	Air
MHPEM-075050	075	050	24x14z10	01.5	03750.0	075.0	050.0	120.0	Air
MHPEM-100050	100	050	30x20x12	03.0	11250.0	150.0	75.0	120.0	Air
MHPEM-100062	100	062	32X20X08	03.0	15000.0	150.0	100.0	90.0	Air
MHPEM-100075	100	075	36X12X08	03.0	20000.0	200.0	100.0	60.0	Air
MHPEM-100100	100	100	40X12X12	03.0	30000.0	300.0	100.0	60.0	Air
MHPEM-125100	125	100	40X14X12	04.0	40000.0	200.0	200.0	60.0	Air
MHPEM-150125	150	125	45X20X14	04.0	50,000.0	250.0	200.0	60.0	WATER
MHPEM-150150	200	150	48X20X14	04.0	60,000.0	300.0	200.0	60.0	WATER
MHPEM-250050	200	050	48X20X14	06.0	80,000.0	400.0	200.0	60.0	WATER
MHPEM-300075	250	075	48X20X14	06.0	10,000.0	500.0	200.0	60.0	WATER
MHPEM-500050	300	100	48X20X14	08.0	120,000.0	600.0	200.0	60.0	WATER

Red embolden model may be available in air cooled mode with 40-50 rise is power and size change accordingly.

General Specification of High Power Electromagnets(d.c./pulse/a.c.)

- Operating voltage 220 volts, 1/3 phase, 40-60 Hz
- Pole Gap: 10-200 m.m. with Auto/manual motion control of magnet
- Pole Diameter: 20-200 m.m.
- Max magnetics field: 3.0 tesla
- Pole material: soft iron, composite, alloys
- Pole material [permeability@2.2T](#);
- Pole Dimensional profile: 15-25% taper
- Percentage surface irregularities: 0.001%
- Coil O.D. 100 – 2000 m.m.
- Coil Length: 75- 800 m.m.
- Coil inductance: 100- 2000 mili-henry (MEASURE AT LOW FREQUENCY)
- Coil time constant: 10-100 mili-secs
- Coil Voltage: 50-400 VOLT d.c.
- Coil current: 50-500 amps d.c.
- Duty cycle: 30 min on/30 min off
- Frame size: 6x24 to 100x200"



MHPEM-025010

MOTORON SEMICONDUCTORS CORPORATION

HIGH POWER ELECTROMAGNET & POWER SUPPLIES

RESISTIVE/PULSE/ (D.C. & Ramp)

MODEL: MHPEM

SPECIFICATIONS OF High tesla Electromagnets/(pulse.)

Power range<500.0 K.Watt

Model	Pole dia m.m.	Pole gap m.m.	Frame size LxBxH	B _{max} Tesla	Watts (Ave) D=10%	Volts	Amps	Ramp rate/ max	Cooling
MHPEM-0250252	025	025	12X06x08	04.5	0250.0	500.0	0050.0	500	He-cooled
MHPEM-0320502	032	050	12X06x08	04.5	01200.0	500.0	0075.0	500	He-cooled
MHPEM-0500252	050	025	18X10X12	04.5	0750.0	500.0	0150.0	500	He-cooled
MHPEM-0500502	050	050	18X10X12	04.5	01500.0	500.0	0300.0	500	He-cooled
MHPEM-0620622	062	062	24X18X16	04.5	02500.0	0500.0	0500.0	500	He-cooled
MHPEM-0750504	075	050	30X20X16	04.5	04000.0	0800.0	0500.0	500	He-cooled
MHPEM-0750624	075	062	24X18X16	04.5	06400.0	0800.0	0800.0	500	He-cooled
MHPEM-1000504	100	050	32X20X16	04.5	96000.0	0800.0	1200.0	200	He-cooled
MHPEM-1000754	100	075	36X20X16	04.5	14400.0	0900.0	1600.0	200	He-cooled
MHPEM-1001004	100	100	40X20X16	04.5	22500.0	0900.0	2500.0	200	He-cooled
MHPEM-1251006	125	100	40X30X16	06.0	25000.0	1000.0	2500.0	200	He-cooled
MHPEM-1501006	150	125	45X36X24	06.0	24,000.0	1200.0	3000.0	200	He-cooled
MHPEM-1501508	150	150	60X40X24	08.0	45000.0	1500.0	3000.0	200	He-cooled
MHPEM-2501008	250	100	72X42X24	08.0	08000.0	2000.0	4000.0	200	He-cooled
MHPEM-3001008	300	100	72X50X24	08.0	10,000.0	2000.0	5000.0	200	He-cooled
MHPEM-5001008	500	100	84X60X24	08.0	14000.0	2000.0	7000.0	200	He-cooled

SPECIFICATIONS OF RESISTIVE ELECTROMAGNETS/ (HIGH FREQUENCY)

Power range<2000.K.Watt

Model	Pole dia m.m.	Pole gap m.m.	Frame size LxBxH	B _{max} Tesla	Watts	Volts At 10hz	Amps At 10.0 hz	Frequency Hz	Cooling
MHFEM-025025	025	025	12X06x08	01.5	00400.0	800.0	010.00	400	Air
MHFEM-032050	032	050	12X06x08	01.5	00600.0	800.0	015.00	400	Air
MHHFM-050025	050	025	18X10X12	01.5	0750.0	1000.0	015.00	400	Air
MHHFM-050050	050	050	18X10X12	01.5	01250.0	1500.0	025.0	400	Air
MHHFM-062062	062	062	24X18X08	01.5	02500.0	2000.0	050.0	400	Air
MHFEM-075050	075	050	24x14x10	01.5	03750.0	2500.0	050.0	400	Air
MHFEM-075050	075	050	30x20x12	02.0	05000.0	3000.0	050.0	400	WATER
MHFEM-100050	100	050	32X20X08	02.0	10000.0	4000.0	050.0	400	WATER
MHFEM-100075	100	075	36X12X08	02.0	15000.0	500.0	040.0	400	WATER
MHFEM-100100	100	100	40X12X08	02.0	20000.0	6000.0	040.0	400	WATER
MHFEM-125100	125	100	40X14X08	02.0	40000.0	6200.0	040.0	400	WATER
MHFEM-150125	150	125	45X20X080	02.0	80,000.0	7000.0	040.0	400	WATER
MHFEM-150150	200	150	48X20X08	02.0	100,000.0	7500.0	040.0	400	WATER
MHFEM-250050	250	050	48X20X08	02.0	2000,000.0	5000.0	040.0	400	WATER
MHFEM-300075	250	075	48X20X08	02.0	2500,000.0	6000.0	040.0	400	WATER
MHFEM-500050	300	100	48X20X08	02.0	5000,000.0	7500.0	040.0	400	WATER

General Specification of A.C./PULSE Power Electromagnets:/P

Operating voltage 220 volts, 1/3 phase, 40-60 Hz

Frequency: upto 1.0 k hz

Pole Gap: 10-200 m.m. with Auto/manual motion control of magnet

Pole Diameter: 20-200 m.m.

Max magnetics field: 2.0 tesla

Pole material: soft iron, composite, alloys

Pole material [permeability@2.2T](#);

Pole Dimensional profile: 15-25% taper

Percentage surface irregularities: 0.001%

Coil O.D. 100 – 2000 m.m.

Coil Length: 75- 800 m.m.

Coil inductance: 100- 2000 mili-henry (MEASURE AT LOW FREQUENCY)

Coil time constant: 10-100 mili-secs

Coil Voltage: 50-400 VOLT d.c.

Coil current: 50-500 amps d.c.

Duty cycle: 30 min on/30 min off

Frame size: 6x24 to 100x200"

MOTORON SEMICONDUCTORS CORPORATION

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e.mail: motoron@hotmail.com

HIGH VOLTAGE HIGH CURRENT POWER SUPPLIES

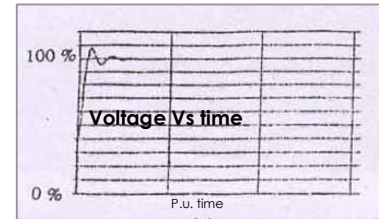
(Variable Frequency) **MVFPs-Series**

Introduction:

MEMPS series of high current/low voltages variable frequency supplies are available in (15.0 to 1000 kilo watts), more than 50 different models working in constant voltage/current mode virtually offering solutions to electrochemical, corrosion, petrochemical industry, organic/inorganic chemical, heavy electrical/mechanical industries, machine tools, non-conventional energy, capacitor energy storage. solids state physics application and many uncountable defense/nuclear applications. Updated design topology ensures better controllability and efficiency with additional integrated power/voltage and frequency control/protection. These power supplies may operate in parallel to make it more redundant. Company offers tailor made solution to custom requirement.

Operating Principle:

These variable frequency power supply current/low voltage are force commutated high frequency I.G.B.T. controlled rectifier working in feedback cascade mode. Set voltage/current immediately settles to set point with consistent regulation over wide load range and without any hunting with fail proof protection against either over/under voltage. These power supplies may be operated in parallel along with facility of parallel port/serial port to enable it to interface with computer to achieve any real time voltage /current profile.



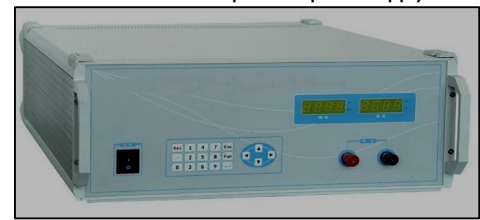
Time response of power supply



MEMPS-024100



MEMPS-024100



MEMPS-100100

SPECIFICATIONS OF HIGH CURRENT/LOW VOLTAGE POWER SUPPLIES A.C.

Power range < 100.0 K.Watts

Model	Volts	Current amp./option	Hz	cooling	Model	Volts A	Current m.a.	Hz	Cooling
MMFPS-0500100	500.0	100.0	0.1-1000	Air/oil	MMFPS-3000200	3000.0	0200.0	0.1-1000	Air/oil
MMFPS-0500200	500.0	200.0	0.1-1000	Air/oil	MMFPS-3000400	3000.0	0400.0	0.1-1000	Air/oil
MMFPS-1000200	1000.0	100.0	0.1-1000	Air/oil	MMFPS-3000500	3000.0	0500.0	0.1-1000	Air/oil
MMFPS-1000200	1000.0	200.0	0.1-1000	Air/oil	MMFPS-5000203	5000.0	0200.0	0.1-1000	Air/oil
MMFPS-1500100	1500.0	100.0	0.1-1000	Air/oil	MMFPS-5000500	5000.0	0500.0	0.1-1000	Air/oil
MMFPS-1500200	1500.0	0200.0	0.1-1000	Air/oil	MMFPS-5000100	5000.0	0100.0	0.1-1000	Air/oil
MMFPS-01500500	1500.0	0500.0	0.1-1000	Air/oil	MMFPS-5000100	5000.0	100.0	0.1-1000	Air/oil
MMFPS-02000100	2000.0	100.0	0.1-1000	Air/oil	MMFPS-5000200	5000.0	200.0	0.1-1000	Air/oil
MMFPS-02000200	2000.0	200.0	0.1-1000	Air/oil	MMFPS-5000100	5000.0	100.0	0.1-1000	Air/oil
MMFPS-0200500	2000.0	0500.0	0.1-1000	Air/oil	MMFPS-5000100	5000.0	100.0	0.1-1000	Air/oil

General Specification of High current/low voltage power supply:

Operating voltage 220 volts, 1/3 phase, 40-60 Hz
 Output current/voltage 0-5000 volts/200 amps (max), 0.1-400 HZ
 Voltage/current control accuracy 99.9% of set point
 Output impedance: compatible to load to ensure maximum possible power transfer.
 Resolution 0.1 volts/amps D.C.
 Repeatability 100 percent
 Response time 0.5 - 1.1 mill-seconds
 Voltage regulation: Line : $\pm 0.05\%$ (for $\pm 10\%$ of input change)/ Load: 0.05% (for 10 to 100% of load change)
 Current regulation: Line : $\pm 0.05\%$ (For $\pm 10\%$ of input change)/Load: 0.05% (for 10 to 100% of load change)
 Interface Signal 0.0-12.0 volts D.C. (proportional to process variable)
 Voltage control range 0.0-400 volts
 Step down ratio 0-100%
 Control options 1. Reverse polarity control 2. 1.cascade feedback control with soft start 2.Ratio control (option) 2. Constant voltage/current with external adjustment
 Display Voltage/current/kilowatt/Jules in 3½ red glow LED display
 Protection over voltage/short ckt.
 Additional: Local: Constant voltage mode, by 10-turn potentiometer
 Constant current mode, by 10-turn potentiometer
 Remote: Constant voltage mode, by external voltage of 0 to 10Vdc*
 NOTE: These power supplies are also offered in pulse mode.



MMFPS-0500100	24x24x12	MEMPSD-0500501	24x24x36	MMFPS-01500500	24x24x12	MEMPSD-0602001	24x24x36
MMFPS-0500200	24x24x12	MEMPSD-0501001	24x24x40	MMFPS-02000100	24x24x12	MEMPSD-0600501	24x24x40
MMFPS-1000200	24x24x18	MEMPSD-0502001	24x24x48	MMFPS-02000200	24x24x18	MEMPSD-0601001	24x24x48
MMFPS-1000200	24x24x18	MEMPSD-0503001	24x24x50	MMFPS-0200500	24x24x18	MEMPSD-0602001	24x24x50
MMFPS-1500100	24x24x28	MEMPSD-0504001	24x24x60	MMFPS-0500100	24x24x28	MEMPSD-0601001	24x24x60
MMFPS-1500200	24x24x32	MEMPSD-0601001	24x24x60	MMFPS-0500200	24x24x32	MEMPSD-0500501	24x24x60

MOTORON SEMICONDUCTORS CORPORATION

VARIABLE FREQUENCY ELECTROMAGNET & POWER SUPPLIES

(variable frequency)

MODEL: MHFEM

General Specification of High current/low voltage power supply:

Operating voltage 220 volts, 1/3 phase, 40-60 Hz
 Output current/voltage 0-10,000volts/400 amps (max)-VARIABLE FREQUENCY
 Frequency: 0.01- 1000 hz
 /multi output mode
 Frequency: upto 1.0 khz
 Voltage/current control accuracy 99.9% of set point
 Resolution 0.1 volts/amps a.c.
 Repeatability 100 percent
 Response time 0.5 –1.1 mill-seconds
 Voltage regulation: Line : $\pm 0.05\%$ (for $\pm 10\%$ of input change)/ Load: 0.05% (for 10 to 100% of load change)
 Current regulation: Line : $\pm 0.05\%$ (For $\pm 10\%$ of input change)/Load: 0.05% (for 10 to 100% of load change)
 Interface Signal 0.0-12.0 volts D.C. (proportional to process variable)
 Voltage control range as in data sheet(full range)
 Step down ratio 0-100%
 Control options 1. Reverse polarity control 2. 1.cascade feedback control with soft start 2.Ratio control (option) 2. Contant voltage/current with external adjustment
 Display Voltage/current/kilowatt/Jules in 3½ red glow LED display
 Protection over voltage/short ckt.
 Additional: Local: Constant voltage mode, by 10-turn potentiometer
 Constant current mode, by 10-turn potentiometer

Remote: Constant voltage mode, by external voltage of 0 to 10Vdc*

NOTE: These power supplies are also offered in pulse mode.

SPECIFICATIONS OF VARIABLE FREQUENCY POWER SUPPLY

Power range<2000.K.Watt

Model	Volts	Current amp./option	Hz	cooling	Model	Volts A	Current m.a.	Hz	Cooling
MVFPS-0500100	500.0	100.0	0.1-1000	Air/oil	MVFPS-3000200	3000.0	0200.0	0.1-1000	Air/oil
MVFPS-0500200	500.0	200.0	0.1-1000	Air/oil	MVFPS-3000400	3000.0	0400.0	0.1-1000	Air/oil
MVFPS-1000200	1000.0	100.0	0.1-1000	Air/oil	MVFPS-3000500	3000.0	0500.0	0.1-1000	Air/oil
MVFPS-1000200	1000.0	200.0	0.1-1000	Air/oil	MVFPS-000203	5000.0	0200.0	0.1-1000	Air/oil
MVFPS-1500100	1500.0	100.0	0.1-1000	Air/oil	MVFPS-5000500	3000.0	0500.0	0.1-1000	Air/oil
MVFPS-1500200	1500.0	0200.0	0.1-1000	Air/oil	MVFPS-5000100	3000.0	0100.0	0.1-1000	Air/oil
MVFPS-01500500	1500.0	0500.0	0.1-1000	Air/oil	MVFPS-5000100	5000.0	100.0	0.1-1000	Air/oil
MVFPS-02000100	2000.0	100.0	0.1-1000	Air/oil	MVFPS-5000200	5000.0	200.0	0.1-1000	Air/oil
MVFPS-02000200	2000.0	200.0	0.1-1000	Air/oil	MVFPS-5000100	5000.0	100.0	0.1-1000	Air/oil
MVFPS-0200500	2000.0	0500.0	0.1-1000	Air/oil	MVFPS-5000100	5000.0	100.0	0.1-1000	Air/oil

DIMENSION OF VARIABLE FREQUENCY POWER SUPPLY

Power range<2000.K.Watt

Model	24x24x12	MEMPSD-0500501	24x24x36	Model	24x24x12	MEMPSD-0602001	24x24x36
MVFPS-0500100	24x24x12	MEMPSD-0501001	24x24x40	MVFPS-01500500	24x24x12	MEMPSD-0600501	24x24x40
MVFPS-0500200	24x24x18	MEMPSD-0502001	24x24x48	MVFPS-02000100	24x24x18	MEMPSD-0601001	24x24x48
MVFPS-1000200	24x24x18	MEMPSD-0503001	24x24x50	MVFPS-02000200	24x24x18	MEMPSD-0602001	24x24x50
MVFPS-1500100	24x24x28	MEMPSD-0504001	24x24x60	MVFPS-0200500	24x24x28	MEMPSD-0601001	24x24x60
MVFPS-1500200	24x24x32	MEMPSD-0601001	24x24x60	MVFPS-0500100	24x24x28	MEMPSD-0601001	24x24x60
				MVFPS-0500200	24x24x32	MEMPSD-0500501	24x24x60

All dimension in inches.



HIGH VOLTAGE HIGH CURRENT PULSE POWER SUPPLIES (PULSE)

MODEL: MHFEM

General Specification of High current/low voltage Pulse Power supply:

Operating voltage 220 volts, 1/3 phase, 40-60 Hz
 Output current/voltage-peak 0-10,000volts/400 amps (max)-VARIABLE FREQUENCY
 Pulse-on time (Ton): 10-1000000µs to 1000 µs –continuous(in different models/applications)
 Pulse-off time (Toff):10-1000000 µs continuous (in different models/applications)
 Voltage/current control accuracy 99.9% of set point
 Resolution 0.1 volts/amps a.c.
 Repeatability 100 percent
 Response time 0.5 –1.1 mill-seconds
 Pulse peakVoltage regulation: Line : ±0.05% (for ±10% of input change)/ Load: 0.05% (for 10 to 100% of load change)
 Pulse peak Current regulation: Line : ±0.05% (For ±10% of input change)/Load: 0.05% (for 10 to 100% of load change)
 Interface Signal 0.0-12.0 volts D.C. (proportional to process variable)
 Voltage control range as in data sheet(full range)
 Step down ratio 0-100%
 Control options 1. Reverse polarity control 2. 1.cascade feedback control with soft start 2.Ratio control (option) 2. Contant voltage/curent with external adjustment
 Display Voltage/current/kilowatt/Jules in 3½ red glow LED display
 Protection over voltage/short ckt.
 Additional: Local: Constant voltage mode, by 10-turn potentiometer
 Constant current mode, by 10-turn potentiometer



Remote: Constant voltage mode, by external voltage of 0 to 10Vdc*

NOTE: These power supplies are also offered in pulse mode.

SPECIFICATIONS OF VARIABLE FREQUENCY POWER SUPPLY

Power range<2000.K.Watt

Model	Power D:30%	Volt option	Current	cooling	Model	Power D:30%	Volt option	Current	Cooling
MVFPS-0500100	0750.0	500.0	0050.0	AIR	MVFPS-01500500	02110.0	0800.0	0800.0	AIR
MVFPS-0500200	01200.0	500.0	0075.0	AIR	MVFPS-02000100	32000.0	0800.0	1200.0	AIR
MVFPS-1000200	0750.0	500.0	0150.0	AIR	MVFPS-02000200	48000.0	0900.0	1600.0	AIR
MVFPS-1000200	01500.0	500.0	0300.0	AIR	MVFPS-0200500	75000.0	0900.0	2500.0	AIR
MVFPS-1500100	02500.0	0500.0	0500.0	AIR	MVFPS-01500500	022000.0	0800.0	0800.0	AIR
MVFPS-1500200	04000.0	0800.0	0500.0	AIR	MVFPS-02000100	32000.0	0800.0	1200.0	AIR

DIMENSION OF VARIABLE FREQUENCY POWER SUPPLY

Power range<2000.K.Watt

MVFPS-0500100	24x24x12	MEMPSD-0500501	24x24x36	MVFPS-01500500	24x24x12	MEMPSD-0602001	24x24x36
MVFPS-0500200	24x24x12	MEMPSD-0501001	24x24x40	MVFPS-02000100	24x24x12	MEMPSD-0600501	24x24x40
MVFPS-1000200	24x24x18	MEMPSD-0502001	24x24x48	MVFPS-02000200	24x24x18	MEMPSD-0601001	24x24x48
MVFPS-1000200	24x24x18	MEMPSD-0503001	24x24x50	MVFPS-0200500	24x24x18	MEMPSD-0602001	24x24x50
MVFPS-1500100	24x24x28	MEMPSD-0504001	24x24x60	MVFPS-0500100	24x24x28	MEMPSD-0601001	24x24x60
MVFPS-1500200	24x24x32	MEMPSD-0601001	24x24x60	MVFPS-0500200	24x24x32	MEMPSD-0500501	24x24x60