



60W U Bracket type Medical power supply > MUU60

MUU60 series

V1.4

The MUU60 series of AC/DC switching mode power supplies provide 63 Watts of continuous output power. All supplies are UL94V-1 min compliant. All models meet FCC Part-18 class B and CISPR-11 EN55011 class B emission Limits and are designed to comply with UL/c-UL(UL 60601-1:2nd Edition), TUV/T-mark(IEC 60601-1:2nd Edition) and CE marking conformity assessment. All units are 100% burned in and tested.



63W U Bracket Medical Grade Power Supply

FEATURES:

- * Wide Operating Voltage, 80 to 275 VAC, 47 to 63 Hz
- * Internal EMI filter
- * Multi Output
- * Power Fail Detect (Optional)
- * Crowbar Mode Over Voltage Protection
- * Class I system
- * 5 year warranty

APPLICATIONS:

- * Medical Equipment
- * Patient Monitor
- * Ultrasound system
- * Blood chemistry analyzer
- * Medical Image

GENERAL SPECIFICATION:

- * **Short Circuit Protection:** Auto Recovery
- * **Cooling:** Free Air Convection
- * **Protection Classes:** Class I
- * **Safety:** UL/c-UL(UL 60601-1:2ndEdition), TUV/T-mark(IEC 60601-1:2ndEdition)

APPROVALS:



Electrical Characteristics:

Symbol	Characteristic	Condition	Min.	Typ.	Max.	Unit
Vins	Safety Approval Input Voltage Range	Safety Approval & Specification in Label	100		240	VAC
Vin	Input Operate Voltage Range	Detail to see Fig.1 (Derate linearly from 100% load at 90VAC to 80% load at 80VAC)	80		275	VAC
Fi	Input Frequency	Sine wave	47		63	Hz
Po	Output Power Range	See Rating Chart			63	W
Iil	Low Line Input Current	Full Load, Vin=100VAC		1.6		A
Iih	High Line Input Current	Full Load, Vin=240VAC		0.8		A
Irl	Low Line Input Inrush Current	Full Load, 25°C, Cool start, Vin=100VAC			35	A
Irh	High Line Input Inrush Current	Full Load, 25°C, Cool start, Vin=240VAC			70	A
Ik	Safety Ground Leakage Current	Vin=240VAC, Fi=60Hz			0.15	mA
η	Efficiency	Full Load, Vin=230VAC, Detail to see Rating Chart	See Rating Chart			
ΔVoi	Line Regulation	Full Load, Vin=100~120VAC or 200~240VAC			1	%
OVP	Over Voltage Protection		112		132	%
OLP	Over Load Protection	Recovers automatically after fault condition is removed	110		150	%
ttr	Time of Transient Response	Io=Full Load to Half Load, Vin=110VAC			4	ms
thu	Hold-Up Time	Full Load, Vin=110VAC	See Rating Chart			
ts	Start-up time	Full Load, Vin=100~240VAC			2	s
Ris	Insulation Resistance		50			MΩ
Tc	Temperature Coefficient	All Condition			±0.04	%/°C
HV	Dielectric Withstanding Voltage (P-S)	Primary to Secondary, limit current <10mA			4000	VAC
Vpg	Dielectric Withstanding Voltage (P-G)	Primary to PE, limit current <10mA			1500	VAC
EMI	EMC Emission	Compliance to EN55011 (CISPR11), EN60601-1-2	B			Class

Environmental:

Symbol	Characteristic	Condition	Min.	Typ.	Max.	Unit
To	Operating Temperature	Detail to see Fig.2 (Derate linearly from 100% load at 50°C to 50% load at 70°C)	-10		70	°C
Ts	Storage Temperature	10 ~ 95% RH	-40		85	°C
Ho	Operating Humidity	non-condensing	0		95%	RH
Hs	Storage Humidity		0		95%	RH
ESDa	Electro Static Discharge	Air Discharge, IEC61000-4-2			8	kV
ESDc	Electro Static Discharge	Contact Discharge, IEC61000-4-2			6	kV
MTBF	Mean Time Between Failure	Operating Temperature at 25°C, Calculated per MIL-HDBK-217F	200k			h
ELEV	Operating Altitude (Elevation)	All condition			3000	m
VBR	Vibration	10 ~ 500Hz, 10min./1cycle, 60min. each along X, Y, Z axes			5	G
VsI	Surge Voltage	Line-Neutral			1	kV
Vsg	Surge Voltage	Line-PE & Neutral-PE			2	kV



60W U Bracket type Medical power supply > MUU60

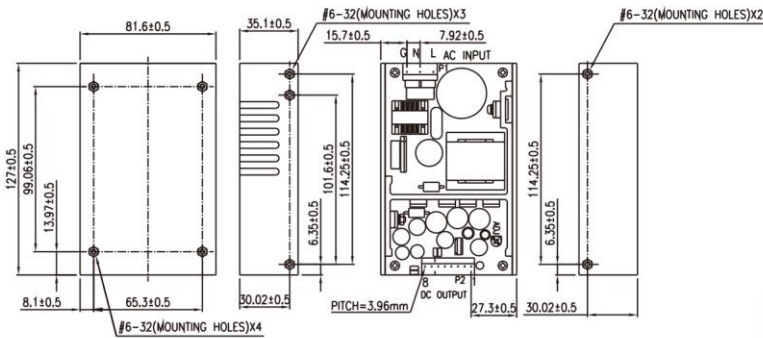
MUU60 series

V1.4

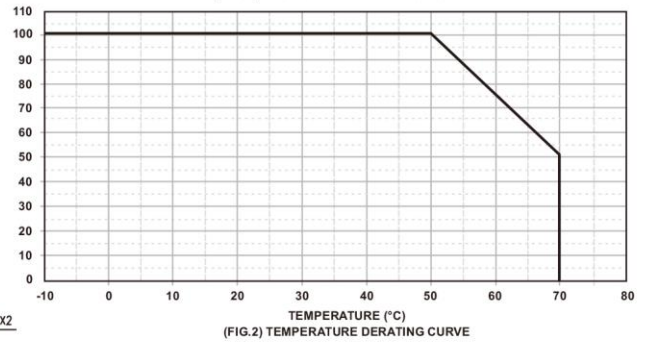
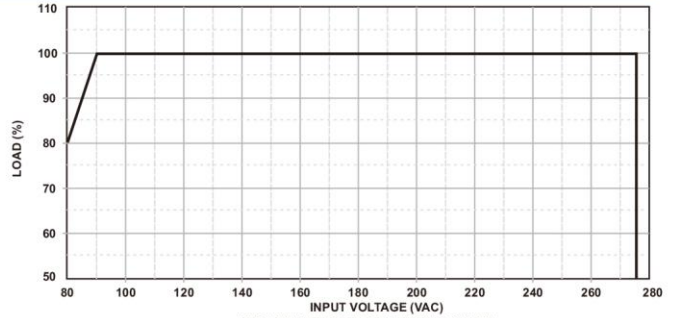
SPECIFICATION NOTE :

1. Output can provide up to peak load when the power supply starts up. Continuous staying in more than rated load is not allowed.
2. At factory, in 60% rated load condition, each output is checked to be within voltage accuracy.
3. Line regulation is defined by changing $\pm 10\%$ of input voltage from nominal line at rated load.
4. Load regulation is defined by changing $\pm 40\%$ of measured output load from 60% rated load.
5. The ripple is measured from peak to peak with a bandwidth-limit of 20MHz (Measured at the output connector with a 0.1 μ F ceramic capacitor and a 47 μ F electrolytic capacitor).
6. Hold up time is measured from the end of the last charging pulse to the time which the main output drops down to low limit of main output at rated load and nominal line.
7. Efficiency is measured at rated load, and nominal line.

MECHANICAL DIMENSIONS: (UNIT: mm [inch])



63W U Bracket Medical Grade Power Supply



PACKING :

1. Dimensions are shown in inches or mm.
2. Net weight: 425g approx.
3. Input connector mates with Molex housing 09-50-3051 and Molex 2478 series crimp terminal.
4. Output connector mates with Molex housing 09-50-3081 and Molex 2478 series crimp terminal.

PIN CHART

MODEL	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8 (Optional)
MUU60-2XX	Vo2	Vo1	Vo1	COM	COM	N/C	N/C	PFD
MUU60-215	N/C	Vo1	Vo1	COM	COM	Vo3	N/C	PFD
MUU60-3XX	Vo2	Vo1	Vo1	COM	COM	Vo3	N/C	PFD
MUU60-4XX	Vo2	Vo1	Vo1	COM	COM	Vo3	Vo4	PFD

Note: Vo1:Output#1 Vo2:Output#2 Vo3:Output#3 Vo4:Output#4



60W U Bracket type Medical power supply > MUU60

MUU60 series

V1.4

63W U Bracket Medical Grade Power Supply

Rating Chart: (Multi Output)

MODEL NO.	Setting Voltage Range (Factory setting, can't be adjusted)	Output Current (Based on the output volt.)		Maximum Output Power	Ripple & Noise	Total Regulation	Typ. Efficiency	Typ. No Load Consumption	Hold-Up Time	Protection Mode																																																																																																																																																																																																																																																																																																																																																																																																																																																					
		min	max																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		(VDC)	(A)								(A)	(W)	(mVp-p)	(%)	(%)	(W)	(ms)																																																																																																																																																																																																																																																																																																																																																																																																																																														
*MUU60-200	+3.3	1.4	7.0	59.1	100	±6	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+12.0	0.6	3.0		100	±5					MUU60-201	+5.0	0.7	7.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.3	3.0	100	±5	*MUU60-202	+5.0	0.7	7.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	*MUU60-203	+5.0	0.7	7.0	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-204	+3.3	1.4	7.0	63	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-215	+5.0	0.7	7.0	48.1	100	±5	73.5	4	16	Hiccup		-24.0	0.2	2.0	100	±5	*MUU60-300	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-300-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-301	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	0.8	100	±5	*MUU60-301-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.3	3.0	100	±5	*MUU60-301-1	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-302	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		-12.0	0.0	0.8	100	±5	*MUU60-302-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-302-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-303	+15.0	0.45	3.0	63	100	±5	73.5	4	16	Hiccup		-15.0	0.0	0.8	100	±5	*MUU60-303-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup	
MUU60-201	+5.0	0.7	7.0	63	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+12.0	0.3	3.0		100	±5					*MUU60-202	+5.0	0.7	7.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	*MUU60-203	+5.0	0.7	7.0	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-204	+3.3	1.4	7.0	63	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-215	+5.0	0.7	7.0	48.1	100	±5	73.5	4	16	Hiccup		-24.0	0.2	2.0	100	±5	*MUU60-300	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-300-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-301	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	0.8	100	±5	*MUU60-301-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.3	3.0	100	±5	*MUU60-301-1	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-302	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		-12.0	0.0	0.8	100	±5	*MUU60-302-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-302-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-303	+15.0	0.45	3.0	63	100	±5	73.5	4	16	Hiccup		-15.0	0.0	0.8	100	±5	*MUU60-303-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5												
*MUU60-202	+5.0	0.7	7.0	63	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+15.0	0.45	3.0		100	±5					*MUU60-203	+5.0	0.7	7.0	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-204	+3.3	1.4	7.0	63	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-215	+5.0	0.7	7.0	48.1	100	±5	73.5	4	16	Hiccup		-24.0	0.2	2.0	100	±5	*MUU60-300	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-300-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-301	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	0.8	100	±5	*MUU60-301-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.3	3.0	100	±5	*MUU60-301-1	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-302	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		-12.0	0.0	0.8	100	±5	*MUU60-302-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-302-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-303	+15.0	0.45	3.0	63	100	±5	73.5	4	16	Hiccup		-15.0	0.0	0.8	100	±5	*MUU60-303-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																													
*MUU60-203	+5.0	0.7	7.0	63	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+24.0	0.4	2.0		100	±5					*MUU60-204	+3.3	1.4	7.0	63	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-215	+5.0	0.7	7.0	48.1	100	±5	73.5	4	16	Hiccup		-24.0	0.2	2.0	100	±5	*MUU60-300	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-300-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-301	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	0.8	100	±5	*MUU60-301-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.3	3.0	100	±5	*MUU60-301-1	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-302	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		-12.0	0.0	0.8	100	±5	*MUU60-302-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-302-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-303	+15.0	0.45	3.0	63	100	±5	73.5	4	16	Hiccup		-15.0	0.0	0.8	100	±5	*MUU60-303-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																														
*MUU60-204	+3.3	1.4	7.0	63	100	±6	73.5	3	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+5.0	0.5	5.0		100	±5					*MUU60-215	+5.0	0.7	7.0	48.1	100	±5	73.5	4	16	Hiccup		-24.0	0.2	2.0	100	±5	*MUU60-300	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-300-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-301	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	0.8	100	±5	*MUU60-301-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.3	3.0	100	±5	*MUU60-301-1	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-302	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		-12.0	0.0	0.8	100	±5	*MUU60-302-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-302-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-303	+15.0	0.45	3.0	63	100	±5	73.5	4	16	Hiccup		-15.0	0.0	0.8	100	±5	*MUU60-303-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																															
*MUU60-215	+5.0	0.7	7.0	48.1	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	-24.0	0.2	2.0		100	±5					*MUU60-300	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-300-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-301	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	0.8	100	±5	*MUU60-301-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.3	3.0	100	±5	*MUU60-301-1	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-302	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		-12.0	0.0	0.8	100	±5	*MUU60-302-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-302-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-303	+15.0	0.45	3.0	63	100	±5	73.5	4	16	Hiccup		-15.0	0.0	0.8	100	±5	*MUU60-303-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																
*MUU60-300	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+12.0	0.6	3.0		100	±5					*MUU60-300-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-301	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	0.8	100	±5	*MUU60-301-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.3	3.0	100	±5	*MUU60-301-1	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-302	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		-12.0	0.0	0.8	100	±5	*MUU60-302-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-302-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-303	+15.0	0.45	3.0	63	100	±5	73.5	4	16	Hiccup		-15.0	0.0	0.8	100	±5	*MUU60-303-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																	
*MUU60-300-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+3.3	1.2	6.0		100	±6					*MUU60-301	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	0.8	100	±5	*MUU60-301-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.3	3.0	100	±5	*MUU60-301-1	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-302	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		-12.0	0.0	0.8	100	±5	*MUU60-302-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-302-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-303	+15.0	0.45	3.0	63	100	±5	73.5	4	16	Hiccup		-15.0	0.0	0.8	100	±5	*MUU60-303-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																		
*MUU60-301	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+12.0	0.0	0.8		100	±5					*MUU60-301-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.3	3.0	100	±5	*MUU60-301-1	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-302	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		-12.0	0.0	0.8	100	±5	*MUU60-302-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-302-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-303	+15.0	0.45	3.0	63	100	±5	73.5	4	16	Hiccup		-15.0	0.0	0.8	100	±5	*MUU60-303-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																			
*MUU60-301-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+12.0	0.3	3.0		100	±5					*MUU60-301-1	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-302	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		-12.0	0.0	0.8	100	±5	*MUU60-302-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-302-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-303	+15.0	0.45	3.0	63	100	±5	73.5	4	16	Hiccup		-15.0	0.0	0.8	100	±5	*MUU60-303-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																																				
*MUU60-301-1	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+5.0	0.6	6.0		100	±5					*MUU60-302	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup		-12.0	0.0	0.8	100	±5	*MUU60-302-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-302-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-303	+15.0	0.45	3.0	63	100	±5	73.5	4	16	Hiccup		-15.0	0.0	0.8	100	±5	*MUU60-303-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																																																					
*MUU60-302	+12.0	0.6	3.0	63	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	-12.0	0.0	0.8		100	±5					*MUU60-302-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-302-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-303	+15.0	0.45	3.0	63	100	±5	73.5	4	16	Hiccup		-15.0	0.0	0.8	100	±5	*MUU60-303-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																																																																						
*MUU60-302-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+12.0	0.6	3.0		100	±5					*MUU60-302-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.6	6.0	100	±5	*MUU60-303	+15.0	0.45	3.0	63	100	±5	73.5	4	16	Hiccup		-15.0	0.0	0.8	100	±5	*MUU60-303-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																																																																																							
*MUU60-302-1	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+5.0	0.6	6.0		100	±5					*MUU60-303	+15.0	0.45	3.0	63	100	±5	73.5	4	16	Hiccup		-15.0	0.0	0.8	100	±5	*MUU60-303-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																																																																																																								
*MUU60-303	+15.0	0.45	3.0	63	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	-15.0	0.0	0.8		100	±5					*MUU60-303-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup		+15.0	0.45	3.0	100	±5	MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																																																																																																																									
*MUU60-303-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+15.0	0.45	3.0		100	±5					MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																																																																																																																																										
MUU60-305	+5.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+24.0	0.4	2.0		100	±5					*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup		+24.0	0.4	2.0	100	±5	*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																																																																																																																																																											
*MUU60-305-1	+5.0	1.2	6.0	63	100	±5	73.5	5	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+24.0	0.4	2.0		100	±5					*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup		+3.3	1.2	6.0	100	±6	*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																																																																																																																																																																												
*MUU60-306	+12.0	0.0	0.8	59.8	100	±5	73.5	5	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+3.3	1.2	6.0		100	±6					*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																																																																																																																																																																																													
*MUU60-306-1	+12.0	0.6	3.0	59.8	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+5.0	0.0	0.8		100	±5					*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup		+5.0	0.5	5.0	100	±5	*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																																																																																																																																																																																																														
*MUU60-308	+3.3	0.5	5.0	53.5	100	±6	73.5	3	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+5.0	0.5	5.0		100	±5					*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup		+3.3	0.5	5.0	100	±6	*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																																																																																																																																																																																																																															
*MUU60-308-1	-12.0	0.0	1.0	53.5	100	±5	73.5	3	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+3.3	0.5	5.0		100	±6					*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup		+12.0	0.0	1.0	100	±5	*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																																																																																																																																																																																																																																																
*MUU60-400	+5.0	0.5	5.0	63	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+12.0	0.0	1.0		100	±5					*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5	*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																																																																																																																																																																																																																																																																	
*MUU60-400-1	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+12.0	0.6	3.0		100	±5					*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5	*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																																																																																																																																																																																																																																																																																		
*MUU60-400-2	-12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+5.0	0.0	0.8		100	±5					*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup		+12.0	0.6	3.0	100	±5		+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup		+5.0	0.0	0.8	100	±5																																																																																																																																																																																																																																																																																																																																																																																																																			
*MUU60-400-3	+3.3	1.2	6.0	63	100	±6	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+12.0	0.6	3.0		100	±5																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	+12.0	0.0	0.8	63	100	±5	73.5	4	16	Hiccup																																																																																																																																																																																																																																																																																																																																																																																																																																																					
	+5.0	0.0	0.8		100	±5																																																																																																																																																																																																																																																																																																																																																																																																																																																									

[*] =MOQ is required. Please contact sales.



60W U Bracket type Medical power supply > MUU60

MUU60 series

V1.4

63W U Bracket Medical Grade Power Supply

Rating Chart: (Multi Output)

MODEL NO.	Setting Voltage Range (Factory setting, can't be adjusted)	Output Current (Based on the output volt.)		Maximum Output Power (W)	Ripple & Noise (mVp-p)	Total Regulation (%)	Typ. Efficiency (%)	Typ. No Load Consumption (W)	Hold-Up Time (ms)	Protection Mode
		min	max							
		(VDC)	(A)							
*MUU60-401	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup
	+12.0	0.6	3.0		100	±5				
	-12.0	0.0	0.8		100	±5				
	-5.0	0.0	0.8		100	±5				
*MUU60-401-1	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup
	+12.0	0.3	3.0		100	±5				
	-12.0	0.0	0.8		100	±5				
	+5.0	0.0	0.8		100	±5				
*MUU60-401-2	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup
	+12.0	0.3	3.0		100	±5				
	+12.0	0.0	0.8		100	±5				
	-5.0	0.0	0.8		100	±5				
*MUU60-401-3	+5.0	0.6	6.0	63	100	±5	73.5	4	16	Hiccup
	+12.0	0.3	3.0		100	±5				
	+12.0	0.0	0.8		100	±5				
	+5.0	0.0	0.8		100	±5				
*MUU60-402	+5.0	1.2	6.0	63	100	±5	73.5	4	16	Hiccup
	+12.0	0.6	3.0		100	±5				
	-12.0	0.0	0.8		100	±5				
	-12.0	0.0	0.8		100	±5				
*MUU60-402-1	+5.0	1.2	6.0	63	100	±5	73.5	4	16	Hiccup
	+12.0	0.6	3.0		100	±5				
	-12.0	0.0	0.8		100	±5				
	+12.0	0.0	0.8		100	±5				
*MUU60-402-2	+5.0	1.2	6.0	63	100	±5	73.5	4	16	Hiccup
	+12.0	0.6	3.0		100	±5				
	+12.0	0.0	0.8		100	±5				
	-12.0	0.0	0.8		100	±5				
*MUU60-402-3	+5.0	1.2	6.0	63	100	±5	73.5	4	16	Hiccup
	+12.0	0.6	3.0		100	±5				
	+12.0	0.0	0.8		100	±5				
	+12.0	0.0	0.8		100	±5				
*MUU60-403	+5.0	1.2	6.0	63	100	±5	73.5	4	16	Hiccup
	+12.0	0.6	3.0		100	±5				
	-12.0	0.0	0.8		100	±5				
	-24.0	0.0	0.8		100	±5				
*MUU60-403-1	+5.0	1.2	6.0	63	100	±5	73.5	4	16	Hiccup
	+12.0	0.6	3.0		100	±5				
	-12.0	0.0	0.8		100	±5				
	+24.0	0.0	0.8		100	±5				
*MUU60-403-2	+5.0	1.2	6.0	63	100	±5	73.5	4	16	Hiccup
	+12.0	0.6	3.0		100	±5				
	+12.0	0.0	0.8		100	±5				
	-24.0	0.0	0.8		100	±5				
*MUU60-403-3	+5.0	1.2	6.0	63	100	±5	73.5	4	16	Hiccup
	+12.0	0.6	3.0		100	±5				
	+12.0	0.0	0.8		100	±5				
	+24.0	0.0	0.8		100	±5				
MUU60-404	+5.0	0.6	6.0	63	50	±5	78	4	16	Hiccup
	+15.0	0.45	3.0		100	±5				
	-15.0	0.0	0.8		100	±5				
	-5.0	0.0	0.8		50	±5				
*MUU60-404-1	+5.0	0.6	6.0	63	50	±5	78	4	16	Hiccup
	+15.0	0.45	3.0		100	±5				
	-15.0	0.0	0.8		100	±5				
	+5.0	0.0	0.8		50	±5				
*MUU60-404-2	+5.0	0.6	6.0	63	50	±5	78	4	16	Hiccup
	+15.0	0.45	3.0		100	±5				
	+15.0	0.0	0.8		100	±5				
	-5.0	0.0	0.8		50	±5				
*MUU60-404-3	+5.0	0.6	6.0	63	50	±5	78	4	16	Hiccup
	+15.0	0.45	3.0		100	±5				
	+15.0	0.0	0.8		100	±5				
	+5.0	0.0	0.8		50	±5				

[*]=MOQ is required. Please contact sales.