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UAML
USHA AMORPHOUS METALS PVT. LTD.

TÜV SÜD South Asia
NABCB QMO 11

AN ISO 9001 : 2015 Certified Company
AN ISO 14001: 2015 Certified Company

USHA AMORPHOUS METALS PRIVATE LIMITED

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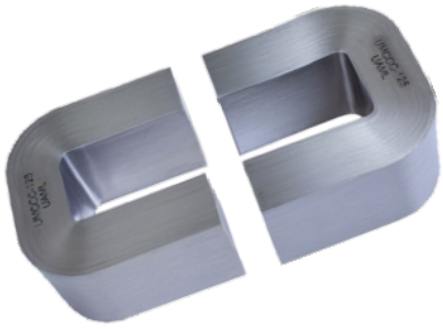
Fe-Based Amorphous C-Cores

C-Core is manufactured with Fe based amorphous alloy, its unique combination of low loss and high saturation flux density take advance power conditioning applications to higher performance levels than previously possible with conventional ferromagnetic materials



APPLICATIONS

- UPS and SMPS power factor correction chokes
- UPS harmonic filter inductors
- High power outdoor industrial ballasts
- Welding power supplies
- High speed rail power systems

BENEFITS

- High saturation flux density(1.56T)
- Low profile enables weight and volume reduction upto 50%
- Low temperature rise-enabling smaller compact design
- Low loss resulting from micro thin ribbon (25µm)

PHYSICAL & MAGNETIC PROPERTIES

Ribbon Thickness (µm)	25
Density (g/cm^3)	7.19
Thermal Expansion (ppm/°C)	7.6
Crystallization Temperature(°C)	550
Curie Temperature (°C)	415
Continuous Service Temperature (°C)	120
Tensile Strength (MN/m^2)	1K-1.7K
Elastic Modulus GN/m^2)	100-110
Vickers' Hardness (50g load)	860
Saturation Flux Density (Tesla)	1.56
Permeability (depending on gap size)	149-390
Saturation Magnetostriction (ppm)	27
Electrical Resistivity (µΩ-cm)	130

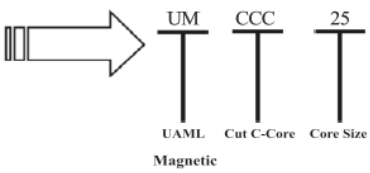
STANDARD CORE SIZE TABLE & ORDERING INFORMATION

CORE	Dim a (mm)	Dim b (mm)	Dim c (mm)	Dim d (mm)	Dim e (mm)	Dim f (mm)	Lm (cm)	Ac (cm^2)	Core Wt±3% (gm)	Window Area (cm^2)
UMCCC-4	9.0 ±0.5	10.5±0.5	33.00±1.00	15.0+0.5	28.5±1.5	51.0±2.0	11.53	1.13	95.5	3.47
UMCCC-6.3	10.0±0.5	11.5±0.5	34.00±1.00	20.0+0.5	31.5±1.5	54.0±2.0	12.22	1.65	151.0	3.91
UMCCC-I6A	11.0±0.8	13.5±0.5	41.00 ±1.00	25.0+0.5	35.5±2.1	63.0±2.0	14.34	2.31	243.0	5.54
UMCCC-I6B	11.0±0.8	13.5±0.5	51.00 ±1.00	25.0+0.5	35.5±2.1	73.0±2.0	16.34	2.31	277.0	6.89
UMCCC-32	13.0±0.8	15.5±0.5	57.00 ±1.00	30.0+0.5	41.5±2.1	83.0±2.0	18.56	3.25	447.0	8.84
UMCCC-40	13.0±0.8	15.5±0.5	57.00±1.00	35.0+1.0	41.5±2.1	83.0±2.0	18.56	3.82	521.0	8.84
UMCCC-50	16.0±1.0	20.5±0.5	71.25±1.25	25.0+0.5	52.5±2.1	103.25±3.0	23.36	3.36	576.0	14.61
UMCCC-63	16.0±1.0	20.5±0.5	71.25±1.25	30.0+0.5	52.5±2.1	103.25±3.0	23.37	4.03	691.0	14.61
UMCCC-100	16.0±1.0	20.5±0.5	71.25±1.25	45.0+1.0	52.5 ±2.1	103.25±3.0	23.36	6.05	1038.0	14.61
UMCCC-125	19.0±1.0	25.5±0.5	84.25±1.25	3s.0+1.0	63.5±2.5	122.25±3.0	27.90	5.59	1145.0	21.48
UMCCC-160	19.0±1.0	25.5 ±0.5	84.25±1.25	40.0+1.0	63.5±2.5	122.25±3.0	27.90	6.35	1307.0	21.48
UMCCC-200	19.0±1.0	25.5 ±0.5	84.25±1.25	50.0+1.0	63.5±2.5	122.25±3.0	27.90	7.95	1634.0	21.48
UMCCC-250	19.0±1.0	25.5 ±0.5	91.25±1.25	60.0+1.0	63.5±2.5	129.25±4.0	29.30	9.55	2060.0	23.27
UMCCC-320	22.0±1.0	35.5 ±0.5	86.25±1.25	50.0+1.0	79.5±2.5	130.25±4.0	31.24	9.24	2119.0	30.62
UMCCC-370	24.8±1.0	85.0 ±0.5	85.00±1.25	25.0+0.5	134.6±2.5	134.6±4.0	41.77	5.21	1597.0	72.25
UMCCC-400	22.0±1.0	35.5 ±0.5	86.25±1.25	65.0+1.0	79.5±2.5	130.25±4.0	31.22	12.01	2754.0	30.62
UMCCC-500	25.0±1.0	40.5 ±0.5	86.25±1.25	55.0+1.0	90.5±2.5	136.25±4.0	33.18	11.55	2813.0	34.93
UMCCC-630	25.0±1.0	40.5 ±0.5	86.25±1.25	70.0+1.0	90.5±2.5	136.25±4.0	33.18	14.70	3580.0	34.93
UMCCC-800A	25.0±1.0	40.5 ±0.5	86.25±1.25	85.0+1.5	90.5±2.5	136.25±4.0	33.18	17.85	4347.0	34.93
UMCCC-800B	30.0±1.0	40.5 ±0.5	96.25±1.25	85.0+1.5	100.5±2.5	156.25±4.0	36.77	21.42	5778.0	38.98
UMCCC-1000	33.0±1.0	40.5 ±0.5	106.25±1.25	85.0+1.5	106.5±2.5	172.25±4.0	39.71	23.56	6863.0	43.05
UMCCC-1103	25.4±1.0	50.8 ±0.5	114.3±1.25	85.0+1.5	101.6±2.5	165.0±4.0	40.99	18.14	5454.0	58.06
UMCCC-1382	44.0±1.5	40.0 ±0.5	105.0±1.25	85.0+1.5	128.8±3.5	193.0±5.0	42.81	31.42	9866.0	42.00
UMCCC-2553	54.0±1.5	57.0±0.5	174.0±1.25	55.0+1.0	165.5±3.5	282.0±5.0	63.15	24.95	11556.0	99.18

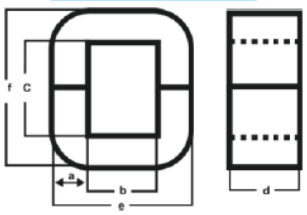
*REFERENCE VALUE ONLY
CUSTOM SIZE ALSO AVAILABLE

Product Identification

Example



C-Core Dimensions



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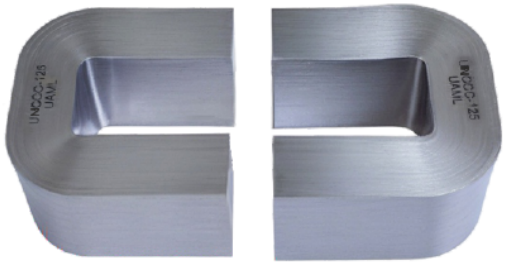
Fe - Based Nanocrystalline C-Cores

Nanocrystalline are manufactured with iron based Nanocrystalline alloy. These cores provides high saturation flux density and very low losses as compared to any other conventional magnetic material. These cores are suitable for power transformer and inductor used in high frequency applications.



APPLICATIONS

- UPS and SMPS power factor correction chokes
- UPS harmonic filters inductors
- High frequency power transformer
- Induction heating
- Power supplies of welding equipment
- Solar and wind power generators

BENEFITS

- High saturation flux density (1.25T)
- Very Low core loss - 1/5th iron based amorphous Metal.
- Very low audible noise
- Low temperature rise due to very low losses
- Smaller size

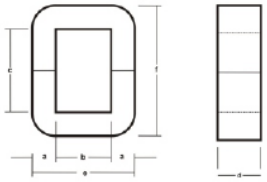
PHYSICAL & MAGNETIC PROPERTIES

Saturation Flux Density (Tesla)	1.25
Saturation Magnetostriction (ppm)	2.7
Electrical Resistivity (μΩ-cm)	130
Ribbon Thickness (μm)	25-30
Density (g/cm3)	7.25
Crystallization Temperature (^{0}C)	510
Curie Temperature (^{0}C)	570
Continuous Service Temperature (^{0}C)	120-150
Initial Permeability	>1x10^4
Maximum Permeability	>6x10^4
Coercivity	<1.6A/m
Core loss (100 Khz, 0.3 T)	<150W/kg

STANDARD CORE SIZE TABLE & ORDERING INFORMATION

PART No.	Dim a (mm)	Dim b (mm)	Dim c (mm)	Dim d (mm)	Dim e* (mm)	Dim f* (mm)	Lm* (cm)	Ac* (cm^2)	Core Wt ± 3% (gm)	Window Area Wa (cm^2)
UMNCC-6.3	10.00±0.5	11.50±0.5	34.00±1.0	20+0.5	31.50 ±1.00	54.00 ±1.50	11.98	1.64	145.00	3.91
UMNCC-8	11.00±0.5	13.50±0.5	31.00±1.0	20+0.5	35.50 ±1.00	53.00 ±1.50	12.01	1.80	160.00	4.19
UMNCC-10	11.00±0.5	13.50±0.5	41.00±1.0	20+0.5	35.50 ±1.50	63.00 ±1.50	14.34	1.85	196.00	5.54
UMNCC-16A	11.00±0.5	13.50±0.5	41.00±1.0	25+0.5	35.50 ±1.50	63.00 ±1.50	14.34	2.31	245.00	5.54
UMNCC-16B	11.00±0.5	13.50±0.5	51.00±1.0	25+0.5	35.50 ±1.50	73.00 ±1.50	16.34	2.31	279.00	6.89
UMNCC-20	11.00±0.5	13.50±0.5	51.00±1.0	30+0.5	35.50 ±1.50	73.00 ±1.50	16.34	2.77	335.00	6.89
UMNCC-23	10.00±0.5	26.00±0.5	26.00±1.0	40+1.0/-0.5	46.00±1.50	46.00±1.50	13.45	3.36	334.00	6.76
UMNCC-25	13.00±0.8	15.50±0.5	57.00±1.0	25+0.5	41.50±1.50	83.00 ±1.50	18.56	2.73	375.00	8.84
UMNCC-25A	12.50±0.5	25.00±0.5	65.00±1.0	15.00+0.5	50.00±1.0	90.00±1.50	21.67	1.54	246.00	16.25
UMNCC-32	13.00±0.8	15.50±0.5	57.00±1.0	30+0.5	41.50±1.50	83.00 ±1.50	18.56	3.28	450.00	8.84
UMNCC-40	13.00±0.8	15.50±0.5	57.00±1.0	35+.05	41.50±1.50	83.00 ±2.0	18.50	3.73	510.00	8.84
UMNCC-50	16.00±1.0	20.50±0.5	71.25±1.0	25+1.0	52.50±1.50	103.25 ±2.0	23.29	3.36	579.00	14.61
UMNCC-63	16.00±1.0	20.50±0.5	71.25±1.0	30+1.0	52.50±1.50	103.25 ±2.0	23.29	4.03	694.00	14.61
UMNCC-80	16.00±1.0	20.50±0.5	71.25±1.0	40+1.0/-0.5	52.50±1.50	103.25 ±2.0	23.29	5.38	926.00	14.61
UMNCC-88	15.00±1.0	23.00±0.5	76.00±1.25	40+1.0/-0.5	53.00±1.50	106.00±2.0	24.42	5.04	910.00	17.48
UMNCC-100	16.00±0.5	20.50±0.5	71.25±1.0	45+1.0/-0.5	52.50±1.50	103.25±2.0	23.29	6.05	1042.00	14.61
UMNCC-125	19.00±1.0	25.50±0.5	84.25±1.5	35+1.0/-0.5	63.50±1.50	122.25 ±2.5	27.83	5.59	1150.00	21.48
UMNCC-160	19.00±1.0	25.50±0.5	84.25±1.5	40+1.0/-0.5	63.50±1.50	122.25 ±2.5	27.83	6.38	1314.00	21.48
UMNCC-180	25.00±1.0	25.00±0.5	100.00±1.25	35+1.0/-0.5	75.00+2.50	150.00 ±3.0	32.76	7.18	1738.00	25.00

*REFERENCE VALUE ONLY
CUSTOM SIZE ALSO AVAILABLE



PRODUCT IDENTIFICATION

EXAMPLE
UMNCC-6.3

UAML MAGNETIC NANO C-CORE CORE SIZE

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Amorphous & Nanocrystalline Block

Blocks are manufactured with iron based Amorphous and Nanocrystalline alloy. These blocks offer a unique combination of high saturation induction, high permeability and low losses. These Blocks can be arranged in different layouts.

APPLICATIONS

- Output filter or inductor cores in high frequency & high power (generally >50kw) solar and wind inverter
- Transformer, inductor and choke
- Medium & high frequency power inverters
- Magnet for MRI machines

Block

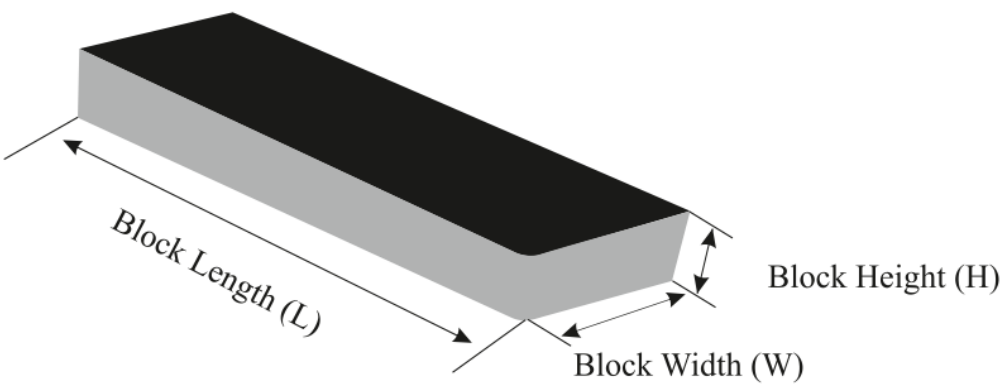
BENEFITS

- High saturation flux density (reducing volume and weight of the core)
- Low core loss —lower temperature rising, higher efficiency of the transformer
- High permeability
- Excellent temperature stability — keep stable working at -50°C to130°C for long time

PRODUCT IDENTIFICATION

Part Number	L (mm)	W (mm)	H (mm)
Am/Nano Block XXX	30 - 350	15-142	10-80

Where:- Amo - Amorphous
Nano- Nanocrystalline
XXX - Block length, width & height respectively



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Gapped Toroidal Core

Gapped Toroidal Core are manufactured with iron based Amorphous metal alloy. Its unique combination of ultra-high induction, high saturation induction, high energy storage capability and low core loss for high frequency magnetic components which are significantly smaller than conventional components.

APPLICATIONS

- DC output inductors
- Power factor correction chokes
- Differential mode input chokes
- Flyback Transformers

BENEFITS

- Linear permeability for wide ranges of frequency
- Small sizes
- High saturation flux density (1.56T)
- Low temperature rise due to low losses
- Low loss owning to thin Amorphous ribbon

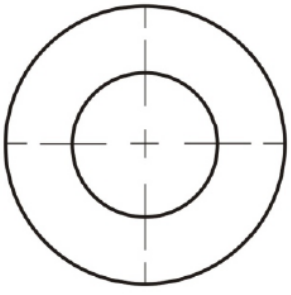
PHYSICAL & MAGNETIC PROPERTIES

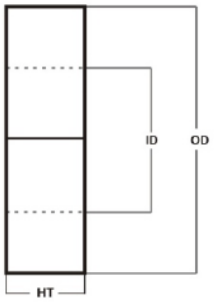
Ribbon Thickness (μm)	25
Density (g/cm^3)	7.19
Thermal Expansion (ppm/°C)	7.6
Crystallization Temperature(°C)	550
Curie Temperature (°C)	415
Continuous Service Temperature (°C)	120
Tensile Strength (MN/m^2)	1K-1.7K
Elastic Modulus (GN/m^2)	100-110
Vickers' Hardness (50g load)	860
Saturation Flux Density (Tesla)	1.56
Permeability (depending on gap size)	149-390
Saturation Magnetostriction (ppm)	27
Electrical Resistivity (μΩ-cm)	130

STANDARD CORE SIZE TABLE ORDERING INFORMATION

PART No.	FINISHED DIM. ODxIDxHT (mm)	Lm* (cm)	Ac* (cm^2)	Core Wt.* (Gm)	Window Area (W_a) ± 3% (cm^2)	μ ±15 %	AL±15 % (nH)
UM0905GTC	11.7x4.3x7.3	2.51	0.06	1.05	0.145	312	36
UM1205GTC	13.3x6.2x7.3	3.06	0.05	1.62	0.301	255	58
UM1305GTC	15.3x5.7x7.3	3.30	0.11	2.60	0.256	149	62
UM1505GTC	17.3x6.7x7.3	3.77	0.13	3.60	0.353	166	72
UM1805GTC	20.7x10.4x7.3	4.88	0.13	4.17	0.849	152	61
UM1810GTC	20.3x9.7x12.3	4.71	0.24	8.00	0.74	173	111
UM2110GTC	23.3x12.2x12.3	5.58	0.26	10.40	1.17	237	136
UM2510GTC	27.3x19.2x12.3	7.30	0.14	7.30	2.89	390	94
UM2610GTC	28.3x13.7x12.3	6.60	0.38	18.00	1.47	181	131
UM3710GTC	39.3x20.7x12.3	9.42	0.53	36.00	3.37	183	130

*REFERENCE VALUE ONLY
CUSTOM SIZE ALSO AVAILABLE





PRODUCT IDENTIFICATION

UMXYZ GTC

Where
UM :UAML Magnetics
GTC : Gapped Toroidal Core
XYZ : Core Size

Cobalt Based Square Loops Cores

- Square Loop Cores manufactured with cobalt based Amorphous alloy allow the design of mag amps that can operate at higher frequencies than previously possible. Its combination of magnetic properties enable mag amps to provide unparalleled precision and efficiently in output regulation.
- Amorphous are particular well suited for output with currents of 1 amps to several times of amps, although they are also used at lower currents when tight regulation and efficiency are extremely important.
- Conventional regulated output are limited at higher frequencies and output currents, linear regulators can not handle output currents that exceed one or two amperes efficiently and thus require heat sinking schemes, which increase the size of the power supply. Independent switched mode sub-regulators avoid this inefficiency but usually require circuitry which is more complex, expensise and less reliable than mag amps. Standard size are available from 9.6 mm to 34.0 mm OD and the possiblity of manufacturing custom size also exists. Core coating meeting UL94v-0 and temperature class F are available upon request .

BENEFITS

- Low saturated permeability.
- Low coercive field-indicating a small reset current.
- Low profile-enabling weight and volume reduction Of up to 50%.
- Low loss-resulting from micro-thin ribbon (18 µm).

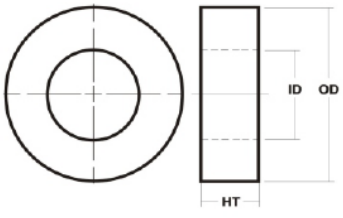
PHYSICAL & MAGNETIC PROPERTIES

Ribbon Thickness (µm)	18
Density (g/cm³)	7.59
Thermal Expansion (ppm/°C)	12.7
Crystallization Temperature(°C)	560
Curie Temperature (°C)	225
Continuous Service Temperature (°C)	90
Tensile Strength (MN/m²)	1K-1.7K
Elastic Modulus GN/m²)	100-110
Saturation Flux Density (Tesla)	0.57
Saturation Magnetostriction (ppm)	<<1
Electrical Resistivity (µΩ-cm)	142
Square Ratio (%)	>95

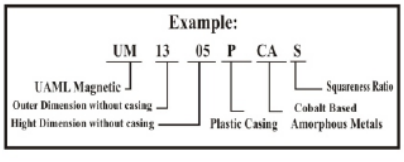
STANDARD CORE SIZE TABLE ORDERING INFORMATION

CORE #	FINISHED DIMENSION (MM) OD x ID x HT	Im* (cm)	Ac* (cm²)	Core Wt.±3% (Gm)	Window Area (wa) (cm²)	Flux Capacity (µwb)
UM1303P-CAS	14.7x7.9x5.1	3.50	0.041	1.1	0.49	4.7
UM1603P-CAS	17.8x11.1x5.1	4.50	0.041	1.4	0.96	4.7
UM1903P-CAS	21.2x11.1x5.1	5.00	0.082	3.1	0.96	9.3
UM2303P-CAS	25.0x14.9x5.1	6.19	0.081	3.8	1.68	9.2
UM805P-CAS	9.6x4.0x6.0	2.12	0.066	1.1	0.13	7.6
UM905P-CAS	11.0x5.5x5.7	2.52	0.054	1.0	0.24	6.2
UM1005P-CAS	11.0x5.5x5.7	2.59	0.060	1.2	0.24	6.9
UM1305P-CAS	14.4x7.9x6.6	3.46	0.057	1.5	0.49	6.5
UM1405P-CAS	15.8x7.9x6.6	3.67	0.083	2.3	0.49	9.4
UM1805P-CAS	20.8x10.8x6.7	4.88	0.110	4.0	0.92	12.0
UM2705P-CAS	29.5x14.8x6.6	6.89	0.200	10.4	1.72	22.8
UM1506P-CAS	17.1x7.8x8.2	3.87	0.140	4.2	0.48	16.0
UM1906P-CAS	21.3x11.1x8.2	4.99	0.160	6.1	0.90	18.0
UM2008P-CAS	22.2x11.0x10.2	5.15	0.240	9.4	0.96	27.4
UM2510P-CAS	27.8x17.3x11.4	7.01	0.241	12.8	2.28	27.5

*REFERENCE VALUE ONLY
CUSTOM SIZE ALSO AVAILABLE



PRODUCT IDENTIFICATION



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Fe-Based Nanocrystalline Toroidal Cores

APPLICATIONS

- Common mode chokes used in EMC / EMI filters for SMPS and inverter drives
- Transformer Cores for high frequency Switched Mode power supplies
- Electrical welding power sources
- X-ray generators • Battery chargers • Solar generators
- Sensor Cores • AC-to-DC or DC-to-DC converters
- Cores used in power supplies in the automotive industry
- Cores for saturable reactors, magnetic amplifiers,beads, and pulse compressors
- Railway Transportation Systems • Electronic Watt-Hour Meters
- Transformer cores for Earth leakage circuit breakers (ground fault interrupters).

BENEFITS

- Significantly smaller build volume (up to more than a factor of 3)
- Satisfy both high saturation magnetic flux density and high permeability long with low coercivity.
- Makes the single stage filter designs possible.
- Low core loss (approximately 1/5th of Fe based amorphous metal).
- Low number of turns required for high L,thus reducing number of filter stages.
- High efficiency, hence low power loss and hence less use of material makes it eco friendly.
- Very low audible noise emission.
- Less copper losses due to reduced number of turns.
- Aging effects are very small Unlike Cobalt amorphous metals.
- Epoxy Coated fiber glass tape/casing is resistant against mechanical stress.

MAGNETIC PROPERTIES

Material Grade	UMNT-V	UMNT-A
Initial Permeability	$>3\times10^4$	$>1\times10^4$
Maximum Permeability	$>8\times10^4$	$>6x10^4$
Coercitivity	<3Axm	>1.6A/ m
Core Loss(100khz, 0.3T)	<80W/kg	>150W/kg

PHYSICAL PROPERTIES

Material	UMNT-V	UMNT-A	Material	UMNT-V	UMNT-A
Saturation flux Density	1.20T	1.25T	Saturation magnetostriction	$<1\times10^{-6}$	$<2.7\times10^{-6}$
Curie Temperature	570°C	570°C	Density	7.35g/cm^3	7.25/gcm^3
Crystallization Temperature	500°C	510°C	Resistivity	115℃ μm-cm	130℃ μm-cm
Hardness Hv	800kg/mm^2	800kg/mm^2	Continous Upper Operation Temperature	130°C	130°C

STANDARD CORE SIZE TABLE ORDERING INFORMATION

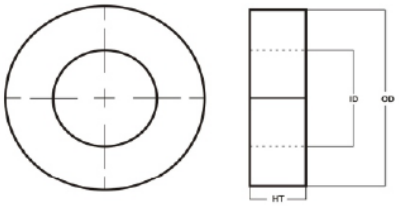
PRODUCT MADE BY CHINA MATERIAL

PART No.	Bare dimensions (mm)			With Reinforcement dimensions (mm)			Im* (cm)	Ac* (cm^2)	Wa* cm^2	Mfe* (g)	AL (μH)± 30%
	OD	ID	Height	OD	ID	Height					
UMNT-A0131005	12.50	9.50	5.00	14.50	7.50	6.80	3.46	.06	.71	1.4	3.11
UMNT-A0201308	20.10	12.70	8.00	22.00	10.70	9.80	5.14	.22	1.27	8.3	8.14
UMNT-A0201310	20.10	12.70	10.00	22.50	10.20	12.30	5.14	.28	1.27	10.3	10.18
UMNT-A0261910	25.60	19.10	10.00	28.10	16.60	12.30	7.02	.25	2.87	12.6	6.63
UMNT-A0252015	25.00	20.00	15.00	27.60	17.40	17.40	7.07	.29	3.14	14.6	7.60
UMNT-A0302010	30.00	20.00	10.00	33.00	17.20	12.40	7.85	.38	3.14	21.6	9.12
UMNT-A0402520	40.00	25.00	20.00	43.40	21.60	23.20	10.21	1.14	4.91	84.4	21.05
UMNT-A0504020	50.00	40.00	20.00	53.40	36.60	23.70	14.14	.76	12.57	77.9	10.13
UMNT-A0645025	64.00	50.00	25.00	67.40	46.60	28.20	17.91	1.33	19.63	172.7	11.20
UMNT-A0645030	64.00	50.00	30.00	67.40	46.60	33.20	17.91	1.60	19.63	207.2	13.44
UMNT-A0755030	75.00	50.00	30.00	78.40	46.60	33.20	19.63	2.85	19.63	405.7	21.89
UMNT-A0805030	80.00	50.00	30.00	83.40	46.60	33.20	20.42	3.42	19.63	506.3	25.26
UMNT-A0906030	90.00	60.00	30.00	93.40	56.60	33.20	23.56	3.42	28.27	584.2	21.89
UMNT-A1008030	100.0	80.00	30.00	103.40	76.60	33.20	28.27	2.28	50.27	467.4	12.16

PRODUCT MADE BY VAC MATERIAL

PART No.	Bare dimensions (mm)			With Reinforcement dimensions (mm)			Im* (cm)	Ac* (cm^2)	Wa* cm^2	Mfe* (g)	AL (μH)± 30%
	OD	ID	Height	OD	ID	Height					
UMNT-V0131005	12.50	9.50	5.00	14.50	7.50	6.80	3.46	.06	.71	1.5	9.33
UMNT-V0201308	20.00	12.70	8.00	22.00	10.70	9.80	5.14	.22	1.27	8.4	24.43
UMNT-V0201310	20.00	12.70	10.00	22.50	10.20	12.30	5.14	.28	1.27	10.5	30.54
UMNT-V0261910	25.60	19.10	10.00	28.10	16.60	12.30	7.02	.25	2.87	12.8	19.89
UMNT-V0252015	25.00	20.00	15.00	27.60	17.40	17.40	7.07	.29	3.14	14.9	22.80
UMNT-V0251620	25.00	16.00	20.00	28.00	13.20	22.80	6.44	.68	2.01	32.6	60.06
UMNT-V0252020	25.00	20.00	20.00	28.00	17.20	22.80	7.07	.38	3.14	19.9	30.40
UMNT-V0302010	30.00	20.00	10.00	33.00	17.20	12.80	7.85	.38	3.14	22.1	27.36
UMNT-V0402520	40.00	25.00	20.00	43.40	21.60	23.20	10.21	1.14	4.91	86.1	63.14
UMNT-V0504020	50.00	40.00	20.00	53.40	36.60	23.20	14.14	.76	12.57	79.5	30.40
UMNT-V0504025	50.00	40.00	25.00	53.40	36.60	28.20	14.14	.95	12.57	99.4	38.00
UMNT-V0645025	64.00	50.00	25.00	67.40	46.60	28.20	17.91	1.33	19.63	176.2	25.33
UMNT-V0645030	64.00	50.00	30.00	67.40	46.60	33.20	17.91	1.60	19.63	211.5	28.00
UMNT-V0755030	75.00	50.00	30.00	78.40	46.60	33.20	19.63	2.85	19.63	414.4	45.60
UMNT-V0805030	80.00	50.00	30.00	83.40	46.60	33.20	20.42	3.42	19.63	516.8	52.62
UMNT-V0906030	90.00	60.00	30.00	93.40	56.60	33.20	23.56	3.42	28.27	596.3	45.60
UMNT-V1008020	100.0	80.00	20.00	103.40	76.60	23.20	28.27	1.52	50.27	318.0	16.89

*REFERENCE VALUE ONLY
CUSTOM SIZE ALSO AVAILABLE



PRODUCT IDENTIFICATION

UMNT XAAABBCC

Where
UM : UAML Magnetics
N : Nano crystalline
T : Toroidal
X : Material Grade
AAA : Outer Dimension without casing
BB : Inner Dimension without casing
CC : Height Dimension without casing

UAML
USHA AMORPHOUS METALS PVT. LTD.

High Precision Current Transformer Cores

High Precision Current Transformer Cores are manufactured with Iron based Nanocrystalline material. These cores have an unique combination of moderate saturation induction, high permeability, good temperature stability and low cost.

APPLICATIONS

- Measuring current & voltage transformer in power plant and substation (.2,.2s & .1 accuracy class.)

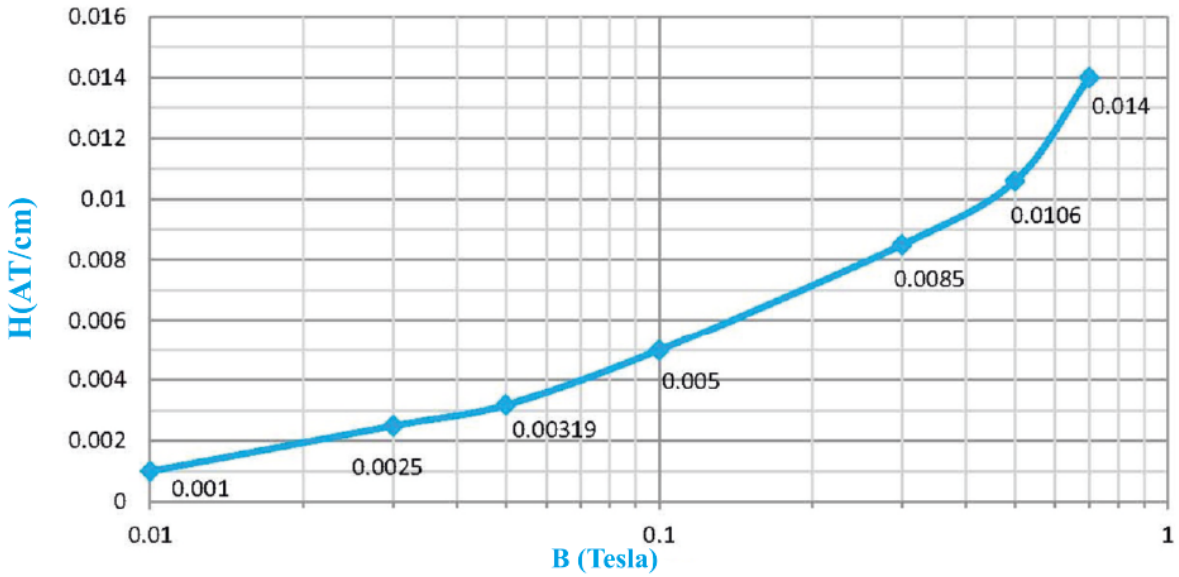
BENEFITS

- High permeability
- Very low loss
- Moderate saturation flux density
- Low cost
- Small size
- Good thermal stability

PHYSICAL AND MAGNETIC PROPERTIES

Saturation Flux Density (Tesla)	1.25
Saturation Magnetostriction(ppm)	2.7
Electrical Resistivity (μΩ-cm)	130
Ribbon Thickness (μm)	25-30
Density (g/cm^3)	7.25
Crystallization Temperature(°C)	510
Curie Temperature (°C)	570
Continuous Service Temperature (°C)	120-150
Initial Permeability	$>1\times10^4$
Maximum Permeability	$>6\times10^4$
Coercivity	<1.6A/m

B-H Curve at 50Hz



Fe Based Amorphous E Cores

E-Cores are manufactured with iron based Amorphous and Nanocrystalline alloy. Its unique combination of low loss and high saturation flux density take advanced power conditioning applications to higher performance levels than previously possible with conventional ferromagnetic materials.

APPLICATIONS

- Transformer cores in SMPS.
- Output filter cores in high frequency.
- Large power supplies.
- Solar & Wind power supplies..
- UPS harmonic filter inductor.

BENEFITS

- High saturation flux density (1.56 T).
- Low profile enables weight and volume reduction upto 50%..
- Low loss resulting from micro thin ribbon (25 µm).
- Low temperature rise enabling compact design..
- Excellent temperature stability.

PHYSICAL & MAGNETIC PROPERTIES

Ribbon Thickness (µm)	25
Density (g/cm^3)	7.19
Thermal Expansion (ppm/^{0}C)	7.6
Crystallization Temperature (^{0}C)	550
Curie Temperature (^{0}C)	415
Continuous Service Temperature (^{0}C)	155
Tensile strength (MN/m^2)	1k-1.7k
Elastic Modulus (GN/m^2)	100-110
Vicker's Hardness (50g load)	860
Saturation Flux Density (Tesla)	1.56
Saturation Magnetostriction (ppm)	27
Electrical Resistivity (µΩ-cm)	130

STANDARD CORE SIZE TABLE ORDERING INFORMATION

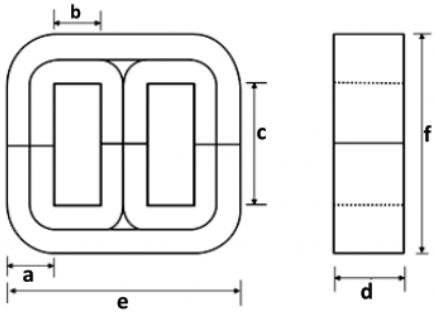
CORE SIZE	a (mm)	b (mm)	c (mm)	d(mm)	e(mm)	f(mm)	Ac(cm2)	Wt. (gm) ± 3%	Window Area(cm2)
UMCEC-7	14.5±0.5	15.75±0.5	11.5±1.0	15.0±0.5	75.1±1.5	40.5±1.5	1.8	227	3.6
UMCEC-9	14.5±0.5	15.75±0.5	11.5±1.0	20.0±0.5	75.1±1.5	40.5±1.5	2.4	303	3.6
UMCEC-11	12.5±0.5	13.0±0.5	41.5±1.0	20.0±0.5	63.5±1.5	66.5±1.5	2.1	365	5.4
UMCEC-11A	12.5±0.5	10.5±0.5	33.0±1.0	15.0±0.5	58.5±1.5	58.0±1.5	1.6	235	6.9
UMCEC-25	14.5±0.5	15.75±0.5	30.0±1.0	20.0±0.5	69.0±1.5	59.0±1.5	2.38	387	9.45
UMCEC-42	15.0±0.5	13.5±0.5	41.0±1.0	30.0±0.5	72.0±1.5	71.0±1.5	3.8	700	11.1
UMCEC-58	15.0±0.5	20.0±0.5	56.0±1.0	20.0±0.5	85.0±2.0	86.0±2.0	2.6	605	22.4
UMCEC-115	14.5±0.5	15.8±0.5	30.0±1.0	100.0±1.0	75.0±2.5	59.0±2.0	12.2	2022	9.5
UMCEC-410	29±1.0	29.5±0.5	95.0±1.5	30.0±0.5	146.0±2.5	153.0±2.5	7.3	2950	56.1
UMCEC-453	38±1.0	25.0±0.5	83.0±1.5	35.0±0.5	164.0±2.5	159.0±2.5	10.91	4367	41.5
UMCEC-640	40±1.0	30.0±1.0	155.0±2.0	20.0±0.5	180.0±2.5	235.0±3.0	6.9	3979	93
UMCEC-1103	38±1.0	37.0±1.0	114.0±2.0	40.0±1.0	188.0±2.5	190.0±3.0	13	6468	84.4
UMCEC-1645	30±1.0	48.0±0.5	170.0±2.0	40.0±1.0	186.0±2.5	230.0±3.5	10.1	6276	163.2
UMCEC-1904	44±1.5	43.0±1.0	130.0±2.0	45.0±1.0	218.0±2.5	218.0±3.5	17.0	9714	111.8
UMCEC-2961	44±1.5	43.0±1.0	130.0±2.0	70.0±1.5	218.0±2.5	218.0±3.5	26.5	15224	111.8
UMCEC-3032	48.0±1.5	51.0±1.5	144.0±1.0	50.0±1.5	246.0±3.5	240.0±3.5	20.64	13405	146.88
UMCEC-4548	48.0±1.5	51.0±1.5	144.0±1.0	75.0±1.5	246.0±3.5	240.0±3.5	30.96	20105	146.88
UMCEC-4926	48.0±1.5	51.0±1.5	156.0±2.0	75.0±1.5	246.0±3.5	252.0±3.5	31.0	20719	159.1
UMCEC-6063	48.0±1.5	51.0±1.5	144.0±1.5	100.0±1.5	246.0±3.5	240.0±3.5	41.28	26806	146.88
UMCEC-6224	16.5±1.0	33.0±1.0	60.0±1.0	85.0±1.0	186.0±3.0	249.7±3.5	24.12	11200	258
UMCEC-6913	55.0±1.5	56.0±1.5	145.0±1.5	90.0±1.5	277.0±3.5	255.0±3.5	42.57	29509	162.4
UMCEC-12200	55.0±1.5	56.0±1.5	277.0±2.0	85.0±1.5	277.0±3.5	387.0±4.0	39.3	38335	310.2

*REFERENCE VALUE ONLY
CUSTOM SIZE ALSO AVAILABLE

PRODUCT IDENTIFICATION

Example: UM CEC 25

UAML MAGNETIC — Cut E-Core — Core Size



Inductor

An inductor is a passive electrical component that stores energy in a magnetic field when electric current flows through it. The key characteristic of an inductor is its ability to oppose changes in current, which is described by inductance measured in henries (H).

How Inductors Work: When a current flows through the coil of an inductor, it creates a magnetic field around it.

If the current changes, the magnetic field also changes, inducing a voltage or electromotive force that opposes the change in current according to Lenz's Law. This opposition to current change is what gives inductors their characteristic of "smoothing" out electrical signals making them useful in filtering applications.

Key Parameters:

Inductance (L): Determines the inductor's ability to store magnetic energy.

Core Material: Affects the efficiency and inductance of the coil. Common materials include air, iron, and ferrite.

Resistance (R): Every inductor has some inherent resistance due to the wire used in the coil.

Rated Current: The maximum current the inductor can handle without overheating or saturating its core.

Applications:

Power Supplies: Used to filter out noise and smooth voltage fluctuations.

Transformers: Function based on inductors to transfer energy between circuits.

Radio Frequency (RF) circuits: Help in tuning circuits and signal filtering.

Energy Storage: In DC-DC converters and other switching circuits.

UAML produces different sizes and shapes of inductors.

Isolation Transformer

We at UAML design and manufacture Isolation Transformer from 1 KVA to 20KVA , with better cost and quality control to meet the requirements of various customers.

An isolation transformer is a type of transformer used to transfer electrical power from a source of alternating current (AC) to a device or system while isolating the powered device from the power source for safety. Its main purpose is to protect against electric shocks, suppress electrical noise in sensitive devices, and provide a stable, isolated voltage.

Key features of an isolation transformer include :

1.Electrical Isolation: It isolates the primary (input) and secondary (output) circuits, preventing direct electrical connection. This helps protect equipment and people from electrical faults or surges in the primary circuit.

2.Noise Reduction: By decoupling the two circuits, isolation transformers help to filter out electrical noise, making them useful for sensitive electronics like computers and medical devices.

3.Safety: Isolation transformers reduce the risk of electric shock, as the secondary winding has no direct connection to the ground or the source circuit.

4.Voltage Transformation: Though many isolation transformers have a 1:1 ratio (same voltage in and out), they can also step up or step down voltages.

5.Lower Losses : By using Amorphous metal , we ensure lower losses and consequently lower heat generation.

Applications include medical devices, industrial equipment, and audio systems where clean power and safety are essential.

Distribution Transformer Core

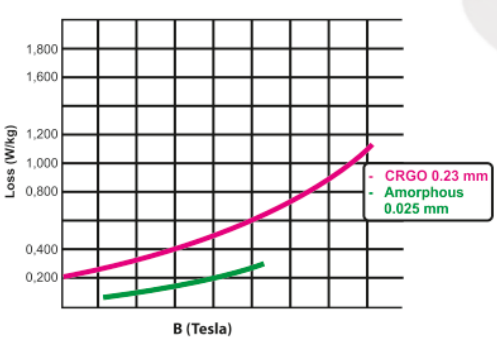
Introduction

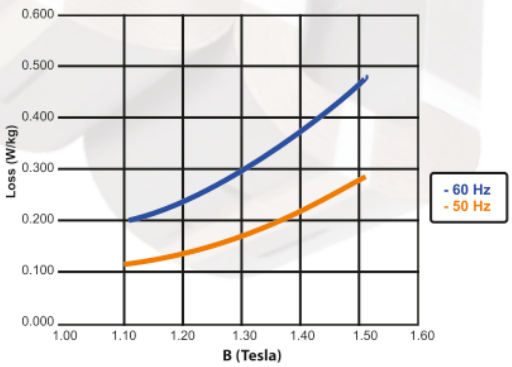
Electricity conducted by traditional transformer cores which are made of grain-oriented steel alloys have less power due to hysteresis losses & eddy current losses and record a loss of approximately 2% to 4% of the electricity they conduct. Electricity utilities and industries are regularly in search of methods or technologies to reduce these energy losses and in turn their operation costs. Amorphous Metal Distribution Transformers (AMDT) help in achieving this goal for industries due to lower hysteresis losses & eddy current losses. UAML is India's first manufacturer of top-quality Amorphous Metals (AM) distributed gap (wound)cores. With an experience of over 33 years, we specialize in manufacturing according to customer's specifications for Single Phase and Three Phase Distribution Transformers (DT). These are high quality and state of the art AM core loops which can be used for oil immersed and dry type Distribution Transformers. We manufacture Distribution Transformer Cores and Evans Cores ranging from 5KVA to 1000KVA

Features

- Low Hysteresis Loss
- Low Eddy Current Loss
- Lower temperature rise, Reliable
- Low loss under harmonic, Power Quality
- Flexible manufacturing processes
- Consistent Properties

MAGNETIC PERFORMANCE





The losses due to induction in the cores produced with various transformers sheets.

Material Characteristics

Basic Parameters	Amorphous Metal Material
Strip Thickness (µm)	25 (+/- 4)
Density (gm/cm3)	7.18
Lamination Factor (%)	≥86
Saturation Induction - Bs (Tesla)	1.56
Typical Core Loss (50 Hz, 1.3 -1.4T) (W/kg)	0.17 to 0.20
Standard widths (mm)	3 Widths; (142.24, 170.18, 213.36)

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