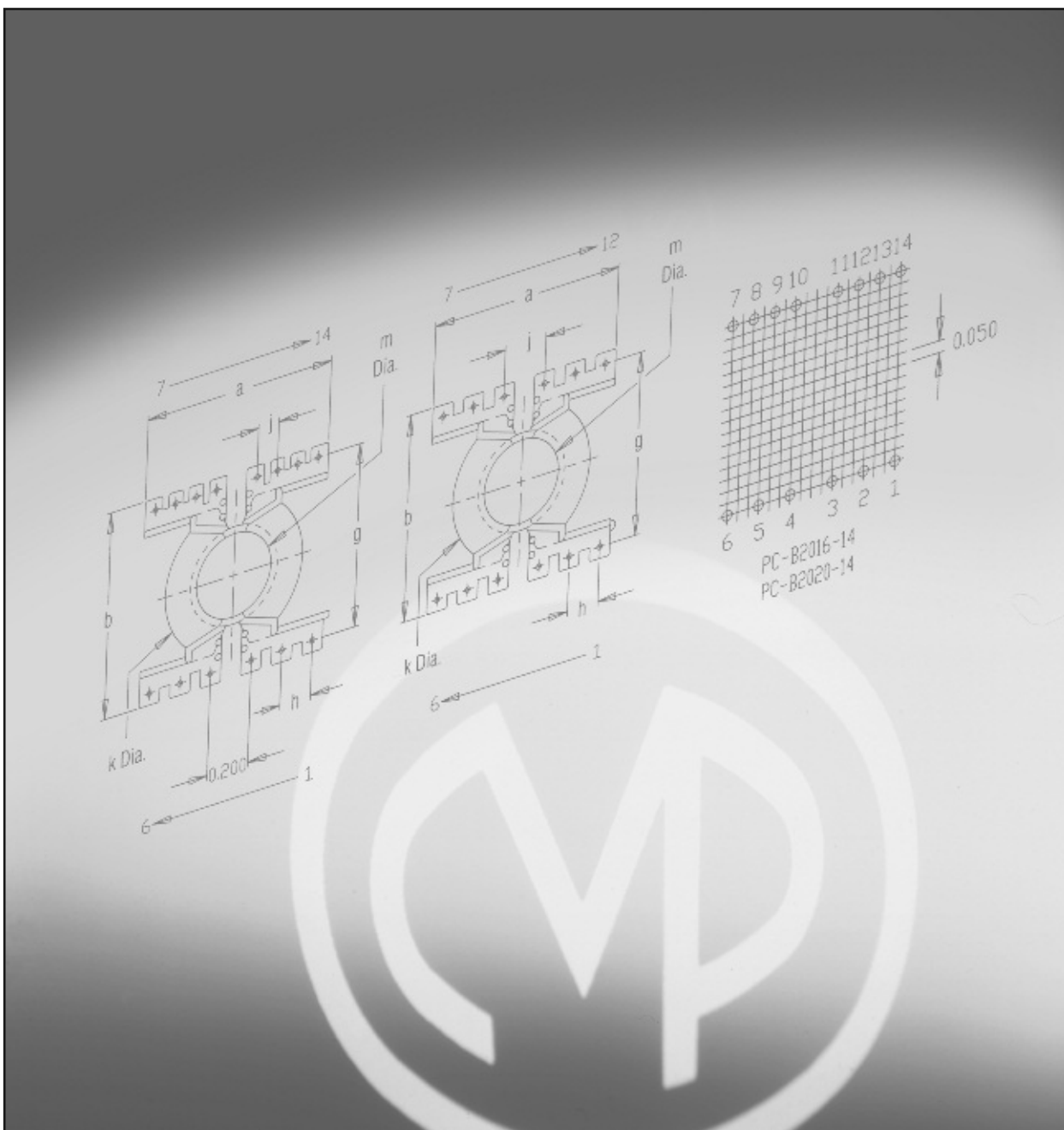
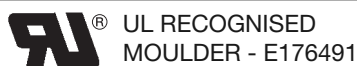




- 3D CAD Design service
- Material selection guides
- Mouldflow analysis capability
- Stereolithographic (SLA) modelling
- SLS (Selective Laser Sintering) rapid prototyping
- RoHS Statement
- REACH Statement



Most products are available direct from stock with same day despatch - please contact sales for details





# Product Selector

## Miles-Platts Coil Bobbins for Laminations

**Not sure where to start?** Use the table below to help you choose which coil bobbin is suitable for your application. If you need any assistance, can't find what you need or need to ask a question about materials, please call - we're only too happy to help.

### UK/USA Format Coil Bobbins for Laminations (Section 3)

30% Glass Filled Nylon PA66 to UL94HB & UL94V0 or PET to UL94V0. Alternative materials available - refer to section 2, page 10

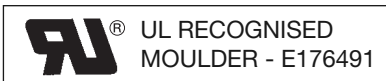
Lamination Size / Pattern		Plain Bobbins or Optional terminals fitted Choose from TBS 900 Series (Section 9)	No terminal options
UK	US		
250	375		<b>K Range - Section 3, page 14</b> - Slotted Cheeks - SS & DS - 2FL & 3FL - No Terminals
621			
18	560 (9/16)	<b>S Range - Section 3, page 26</b> - SS, DS & SDS - 2FL, 3FL & VDE	
145	62 (5/8)		
74	68 (1 1/16)	<b>A Range - Section 3, page 2</b> - SS, DS & SDS - Terminal Covers - 2FL, 3FL & VDE - Different Cheek Styles - Insulation Covers - Flying Lead Concept - Terminals from TBS900 Series	
35	75 (3/4)		
147	87 (7/8)		
29	100 (1)		
196	112 (1 1/8)		
78	125 (1 1/4)		
120	150 (1 1/2)		<b>L Range - Section 3, page 15</b> - SS & DS - 2FL & 3FL - No Terminals - Robust Construction - Suitable for larger laminations & wire gauges
248	175 (1 3/4)		
638	212 (2 1/8)		
750	250 (2 1/2)		
825			
E9/9A	300 (3)		
218	187	<b>VM Range - Section 3, page 32</b> - Miscellaneous size bobbins - refer to catalogue for pin and flange configurations	
621			
158			
21			

### Metric Coil Bobbins for Laminations (Sections 4 & 5)

30% Glass Filled Nylon PA66 to UL94HB & UL94V0 as standard or PET 30% to UL94V0. Alternative materials available - refer to section 2, page 10

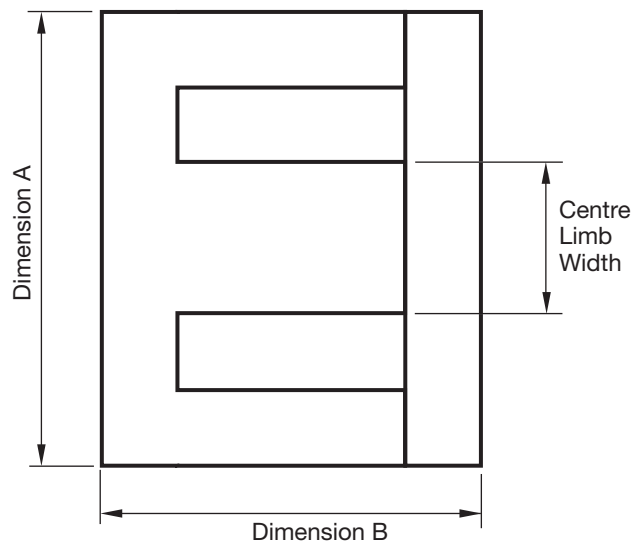
EI FORMAT LAMINATIONS					UI/3UI FORMAT			
Metric Lamination Size (mm)	Optional Terminals fitted. Choose from TBS 600 (Section 9)	Wire Pin Versions	No terminals Optional Screw Connectors available	Connector Mounting Strips moulded in bobbin	Wire Pin Versions	No Terminals Optional Screw Connectors available	Lamination Size (mm)	
EI 30	<b>M Range - Section 4, page 2</b> - Choose terminals from TBS600 Series - SS, DS & SDS - 2FL, 3FL & VDE - Insulation Covers - Terminal Cover (EI48)	<b>M Range - Section 4, page 6</b> - Wire pin versions of main range - SS, DS & SDS - 2FL, 3FL & VDE - Insulation covers	<b>N Range - Section 5, page 2</b> - Encapsulated versions - Low profile - Boxes		<b>U Range - Section 5, p8</b> - Encapsulated - Low profile boxes		UI 30	
EI 38								UI 39
EI 42								
EI 48								
EI 54								
EI 60								
EI 66							<b>Large Metric Range - Section 4, page 35</b> - SS & DS - 2FL & 3FL - Insulating bushes for bolts - Connector mounting strips - 16A, 30A & 63A screw connectors - Winding spacers - Suitable for larger laminations & wire gauges	UI 60
EI 75					Large Metric Range	UI 66		
EI 78						UI 75		
EI 84						UI 90		
EI 96					UI 100			
EI 108					UI 120			
EI 114					UI 150			
EI 120				Large Metric Range	UI 180			
EI 135					UI 210			
EI 150				Large Metric Range	UI 240			
EI 180					UI 300			
EI 192								
EI 240								
EI 270/217				Large Metric Range - Section 4, page 27 - SS & DS - 2FL & 3FL - Insulating bushes for bolts - Connector mounting strips - 16A, 30A, & 63A screw connectors - Suitable for larger laminations & wire gauges				

For further technical information please contact sales  
 Tel: +44 (0) 116 264 3850 Fax: +44 (0) 116 264 3851  
 Email: enquiries@milesplatts.co.uk  
 Web: www.milesplatts.co.uk





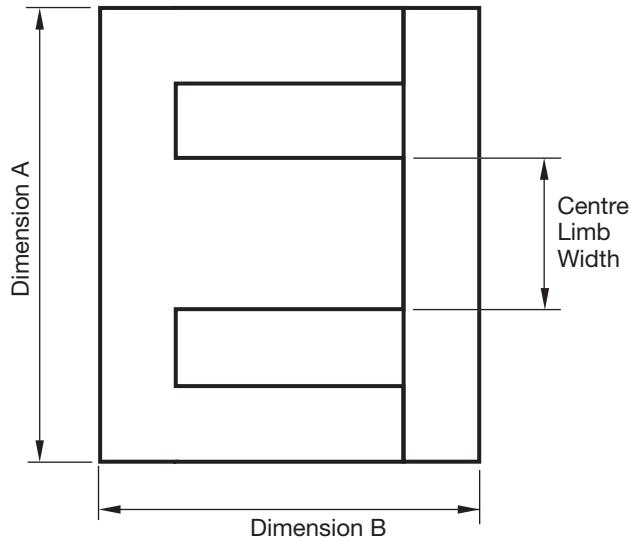
# Single Phase UK/USA EI Lamination Sizes



UK Lamination Reference	Centre Limb Width Inches	Dimension A Inches	Dimension B Inches	Equivalent Metric Lamination	Equivalent USA Lamination Ref (MP Ref)
18	0.562	1.686	1.405		EI 560 ( $\frac{9}{16}$ )
145	0.625	1.875	1.563	EI 48	EI 62 ( $\frac{5}{8}$ )
74	0.688	2.064	1.720		EI 68 ( $\frac{11}{16}$ )
35	0.750	2.250	1.875		EI 75 ( $\frac{3}{4}$ )
147	0.875	2.625	2.188		EI 87 ( $\frac{7}{8}$ )
29	1.000	3.000	2.500		EI 100 (1)
196	1.125	3.375	2.813		EI 112 ( $1\frac{1}{8}$ )
78	1.250	3.750	3.125	EI 96	EI 125 ( $1\frac{1}{4}$ )
120	1.500	4.500	3.750		EI 150 ( $1\frac{1}{2}$ )
248	1.750	5.250	4.375	EI 135	EI 175 ( $1\frac{3}{4}$ )
638	2.125	6.375	5.313		EI 212 ( $2\frac{1}{8}$ )
750	2.500	7.500	6.250	EI 192	EI 250 ( $2\frac{1}{2}$ )
825	2.750	8.250	6.875		
E9	3.000	9.000	7.500		EI 300 (3)
217	3.500	10.500	8.750	EI 270	
135	4.500	13.500	11.250		



# Single Phase Metric EI Lamination Sizes



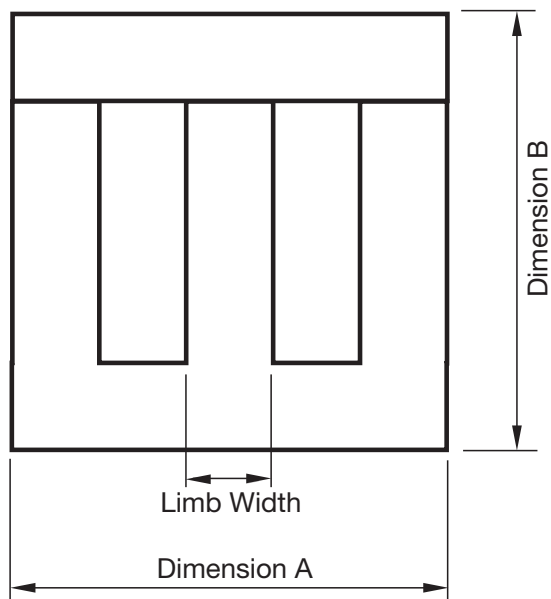
Lamination Reference	Equivalent Reference (IEC)	Centre Limb Width mm	Dimension A mm	Dimension B mm	Equivalent Imperial Lamination
EI 30	YEI 1-10	10.0	30.0	25.0	
EI 38	YEI 1-13	12.7	38.1	31.8	
EI 42	YEI 1-14	14.0	42.0	35.0	
EI 48	YEI 1-16	16.0	48.0	40.0	145 (US 5/8")
EI 54	YEI 1-18	18.0	54.0	45.0	
EI 60	YEI 1-20	20.0	60.0	50.0	
EI 66	YEI 1-22	22.0	66.0	55.0	147 (US 7/8")*
EI 75	YEI 1-25	25.0	75.0	62.5	
EI 84	YEI 1-28	28.0	84.0	70.0	
EI 96	YEI 1-32	32.0	96.0	80.0	78 (US 1 1/4")
EI 108	YEI 1-36	36.0	108.0	90.0	
EI 114	YEI 1-38	38.0	114.0	95.0	120 (US 1 1/2")
EI 120	YEI 1-40	40.0	120.0	100.0	
EI 135	YEI 1-45	45.0	135.0	112.5	248 (US 1 3/4")
EI 150	YEI 1-50	50.0	150.0	125.0	
EI 180	YEI 1-60	60.0	180.0	150.0	
EI 192	YEI 1-64	64.0	192.0	160.0	750 (US 2.5")
EI 240	YEI 1-80	80.0	240.0	200.0	

Note: Centre Limb Width of EI 135 Lamination is 1.772 inches as against 1.75 inches for the 248 Lamination.

\*Metric EI 66 is very close to 147/US 7/8" Lamination.



# Three Phase Metric 3UI Lamination Sizes

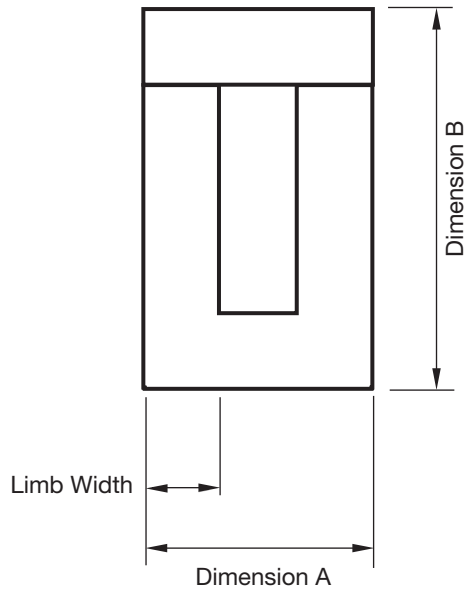


Lamination Reference (Blum)	Equivalent Reference (IEC)	Equivalent Reference (European)	Equivalent Reference (Trancerie)	Equivalent Reference	Limb Width mm	Dimension A mm	Dimension B mm
3UI 30	YUI 3 - 10	EI 50/50	EIT 10	3EI 50	10.0	50.0	50.0
3UI 39	YUI 3 - 13	EI 65/65	EIT 13	3EI 65	13.0	65.0	65.0
3UI 48	YUI 3 - 16	EI 80/80	EIT 16	3EI 80	16.0	80.0	80.0
3UI 60	YUI 3 - 20	EI 100/100	EIT 20	3EI 100	20.0	100.0	100.0
3UI 66	YUI 3 - 22	EI 110/110	EIT 22	3EI 110	22.0	110.0	110.0
3UI 75	YUI 3 - 25	EI 125/125	EIT 25	3EI 125	25.0	125.0	125.0
3UI 90	YUI 3 - 30	EI 150/150	EIT 30	3EI 150	30.0	150.0	150.0
3UI 120	YUI 3 - 40	EI 200/200	EIT 40	3EI 200	40.0	200.0	200.0
3UI 150	YUI 3 - 50	EI 250/250	EIT 50	3EI 250	50.0	250.0	250.0
3UI 180	YUI 3 - 60	EI 300/300	EIT 60	3EI 300	60.0	300.0	300.0
3UI 210	YUI 3 - 70	EI 350/350	EIT 70	3EI 350	70.0	350.0	350.0
3UI 240	YUI 3 - 80	EI 400/400	EIT 80	3EI 400	80.0	400.0	400.0
3UI 300	YUI 3 - 100	EI 500/500	EIT 100	3EI 500	100.0	500.0	500.0



# Single Phase Metric UI Lamination Sizes

Section 2



Lamination Reference	Equivalent Reference (IEC)	Limb Width mm	Dimension A mm	Dimension B mm
EI 30	YUI 1-10	10.0	30.0	50.0
EI 39	YUI 1-13	13.0	39.0	65.0
EI 48	YUI 1-16	16.0	48.0	80.0
EI 60	YUI 1-20	20.0	60.0	100.0
EI 66	YUI 1-22	22.0	66.0	110.0
EI 75	YUI 1-25	25.0	75.0	125.0
EI 90	YUI 1-30	30.0	90.0	150.0
EI 120	YUI 1-40	40.0	120.0	200.0
EI 150	YUI 1-50	50.0	150.0	250.0
EI 180	YUI 1-60	60.0	180.0	300.0
EI 210	YUI 1-70	70.0	210.0	350.0
EI 240	YUI 1-80	80.0	240.0	400.0



# Product Selector

## Ferrite Cores

**MILES · PLATTS**

Section 2

### Miles Platts Coil Bobbins for Ferrite Cores

Ferrite Geometry	Sizes Available	Pin styles	Accessories Available	Page Number
EP	EP7, EP10, EP13, EP17, EP20	PTH + SMD	Clips, covers	Section 6, Page 48
E & EE	E5, E6.3	PTH + SMD	Clips, covers	Section 6, Page 2
EF	EF 12.6	PTH + SMD	Clips + box	Section 6, Page 7
	EF 16	PTH	Clips	Section 6, Page 10
	EF 20 (Horizontal & Vertical)	PTH	Clips	Section 6, Page 12
	EF 20 Concentric	PTH	Clips	Section 6, Page 15
	EF 25 (Horizontal & Vertical)	PTH	Clips	Section 6, Page 16
	EF 25 (F1238) Horizontal	PTH	Clips	Section 6, Page 22
	E30	PTH		Section 6, Page 24
	EF 32	PTH		Section 6, Page 27
	E 34 (F1239)	PTH		Section 6, Page 29
	E 41 (F1007)	PTH		Section 6, Page 29
	E 42 (Horizontal & Vertical)	PTH		Section 6, Page 30
	E 55	PTH		Section 6, Page 34
	E 65 (Horizontal, Vertical, Double & Treble)	PTH + Plain		Section 6, Page 36
ER	ER 9.5, ER 11.5, ER 14.5	SMD	Clips	Section 6, Page 62
EFD	EFD 12, EFD 15	SMD	Clips, covers	Section 6, Page 42
	EFD 20, EFD 25, EFD 30	PTH	Clips, covers	
RMs	RM 4, RM 5, RM 6, RM 8, RM 10, RM 12, RM 14,	PTH	Clips	Section 6, Page 74
	RM 5, RM 6	SMD	Clips	
EC	EC 35, EC 41, EC 52, EC 70	PTH		Section 6, Page 40
ETD	ETD 29, ETD 34, ETD 39, ETD 44, ETD 49, ETD 54, ETD 59 Horizontal	PTH	Clips	Section 6, Page 65
	ETD 29, ETD 34, ETD 39, ETD 44, ETD 49 Vertical	PTH	Clips	Section 6, Page 69
	ETD 34V, 5 chamber & 8 chamber	PTH	Clips	Section 6, Page 71
U	U + I 12.7	PTH		Section 6, Page 89
	U 13.5, U15, U21, U25, U20	PTH		
PQ	PC-B2016, PC-B2020, PC-B2620, PC-B2625, PC-B3220, PC-B3230, PC-B3535, PC-B4040	PTH		Section 6, Page 73

### Miles Platts Coil Bobbins for Ferrite Cores

The following table offers a guideline to assist in selecting the correct bobbin geometry appropriate to the power required.

Ferrite Style	POWER RANGE (W)							
	<5	5 - 10	10 - 20	20 - 50	50 - 100	100 - 200	200 - 500	500 - 1K
EI	EI 12.5	EI 16	EI19	EI 25	EI 40		EI 50	EI 60
EE	EE 13	EE 16	EE 19	EE 25	EE 40	EE 42	EE 55	EE 65
EF	EF 12.6	EF 16	EF 20	EF 25	EF 30	EF 32		
EFD		EFD 12	EFD 15	EFD 20	EFD 25	EFD 30		
EPC		EPC 13	EPC 17	EPC 19	EPC 25	EPC 30		
EER	EER 9.5	EER 11	EER 14.5	EER 28	EER 35	EER 42	EER 49	
ETD				ETD 29	ETD 34	ETD 44	ETD 49	ETD 54
EP	EP 10	EP 13	EP 17	EP 20				
RM	RM 4	RM 5	RM 6	RM 10	RM 12	RM 14		
POT	POT 1107	POT 1408	POT 1811	POT 2213	POT 3019	POT 3622	POT 4229	
PQ				PQ 2016	PQ 2625	PQ 3230	PQ 3535	PQ 4040
EC						EC 35	EC 41	EC 70

SMPS Power throughput for transformer types @ 100KHz.

Miles-Platts are technical moulders - we manufacture more than bobbins - please contact sales for details





**MILES · PLATTS**

“ We aim to satisfy and service the ever changing needs of our customers. ”

“ Wir streben danach, die sich ständig ändernden Bedürfnisse unserer Kunden zu befriedigen. ”

“ Nous cherchons à satisfaire et répondre aux besoins toujours changeant de nos clients. ”

“ Nuestro objetivo es satisfacer y mantener un servicio excelente que copen las diferentes necesidades de los clientes, que pueden variar mucho según el tipo de mercado. ”







## Moulding Materials

All materials are RoHS and REACH Compliant – please refer to website for details and certificates.

Miles Platts have the knowledge and capability to design and process in an extensive variety of engineering thermoplastic and thermoset materials, giving design engineers flexibility to select the most appropriate grade to achieve a cost effective solution. Miles Platts work closely with leading polymer manufacturers such as DuPont, Rhodia, B.A.S.F., DSM, Ticona, EMS and Chevron Phillips, continually testing new and advanced materials ensuring that customers benefit from leading edge moulding technology.

### Common materials are as follows:

#### **Nylon 66: 30% Glass Reinforced & Unreinforced**

Used in the majority of coil bobbin applications world-wide due to its good electrical and flammability properties and ability to mould thin sections whilst retaining a high degree of stiffness. Unreinforced Nylon 66 and Glass Reinforced Nylon 66 have a recommended temperature rating of Class B (130°C). Some grades have UL 1446 insulation systems up to Class F (155°C)

#### **Flame Retardant Nylon 66: 25% Glass Reinforced & Unreinforced**

These materials have similar characteristics to Nylon 66. A Halogen-free Flame Retardant system is incorporated to meet a flammability rating of UL94V0 and to meet the 960°C glow wire requirements (IEC 60695).

#### **Nylon 46 30% Glass Reinforced**

Nylon 46 differs from Nylon 66 having higher heat resistance, is tougher, more rigid and has less creep at high temperatures. Available in UL94V0.

Due to its high crystallinity, Stanyl retains a high level of stiffness at temperatures close to its melting point. This property can prove an advantage when soldering at higher temperatures.

#### **Liquid Crystal Polymer – LCP**

LCP Benefits from superior high temperature performance and dimensional stability whilst moulding extremely thin sections. LCP has inherent flame retardancy to UL94V0.

#### **Thermoplastic Polyesters – PBT and PET**

These materials are increasingly selected for applications where high stiffness, low moisture absorption, dimensional and thermal stability characteristics are required.

#### **Polyphenylene Sulfide – PPS**

PPS has a high resistance to deformation, benefiting from extreme stiffness and is very stable at high temperatures. PPS is inherently flame retardant.

### Frame VA Ratings

Frame VA capabilities shown on standard bobbin tables for laminated core transformers are based on an approximate 70°C temperature rise for single section bobbins and should only be taken as a design guide. The actual output VA that can be achieved will depend upon the utilisation factor of the available bobbin winding area for the wire sizes, screens and interwinding insulation used in the design.



# UL Approved Moulding Materials

# MILES · PLATTS

Group	Manufacturer	Trade Name & Grade	Miles Platts Generic Material Code	Polymer Specific Material Code*	Recommended Maximum System Temperature	UL1446 Electrical Insulation System File Number	Heat Deflection Temperature (°C)	Material Data Sheet CTI Volt	Glow Wire Flammability (°C)
<b>Nylon 66</b>									
30% Glass Reinforced	DuPont	Zytel 70G30HSL	GNN	Z30	Class F 155°C	E69939	250 @ 1.8 MPa	400	-
30% Glass Reinforced	Rhodia	Technyl A218V30	GNN	TA3	Class B 130°C	E130357	250 @ 1.8 Mpa	425	650
25% Glass Reinforced	Rhodia	Technyl A20V25	FGN	V25	Class B 130°C	-	250 @ 1.8 Mpa	400	960
Unreinforced	DuPont	Zytel 101F	UNN	10F	Class B 130°C	E69939	195 @ 0.4 Mpa	-	960
<b>Nylon 66/6</b>									
Unreinforced	EMS	Grilon TSV0		TS0	Class B 130°C	-	210 @ 0.45 Mpa	600	960
<b>Nylon 6</b>									
30% Glass Reinforced	DSM	Akulon K224HG6	GN6	-	Class F 155°C	E125671	210 @ 0.45 Mpa	500	-
<b>Nylon 46</b>									
30% Glass Reinforced	DSM	Stanyl TE250 F6		FST	Class H 180°C	E125671	290 @ 1.8 Mpa	225	-
<b>PET Polyester</b>									
30% Glass Reinforced	DuPont	Rynite FR530L		FR3	Class N 200°C	E69939	224 @ 1.8 Mpa	250	960
<b>PBT Polyester</b>									
30% Glass Reinforced	DSM	Arnite TV4261		261	Class F 155°C	E125671	205 @ 1.8Mpa	400	-
<b>PPS Polyphenylene Sulphide</b>									
40% Glass Reinforced	Ticona	Fortron 1140 L4		FT4	Class N 200°C	-	270 @ 1.8Mpa	125	-
<b>LCP Liquid Crystal Polymer</b>									
30% Glass Reinforced	Ticona	Zenite 6130L		FZN	Class R 220°C	E60824	265 @ 1.8Mpa	200	-
30% Glass Reinforced	Ticona	Vectra E130i		E13	Class R 220°C	-	276 @ 1.8 Mpa	175	-
40% Glass Reinforced	Sumitomo	Sumikasuper LCP E4008			Class F 155°C+	E200050, E313942, E231977	313 @ 1.8 Mpa	-	-
<b>PF Phenolic</b>									
Glass / Mineral Filled	Sumitomo	Sumikon PM9630		96J	Class F 155°C	E209189	-	175	-

The above list reflect materials used for our standard ranges and popular choices used for customer designed products. The materials generally used for our standard ranges are shown on the applicable catalogue page. Please contact our sales department if you cannot find a suitable material above for your application. Maximum system temperature recommendation based Available UL 1446 insulation systems or experience and customer feedback. Material data sheets are available to download from our web-site [www.milesplatts.co.uk](http://www.milesplatts.co.uk)

GNN is Miles Platts material code for a 30% Glass Reinforced Nylon to a flammability rating of UL94HB – We currently use the materials as listed above, but we reserve the right to use an alternative material of the same or better characteristics should quality or commercial reasons arise. Please use the specific material code\* to specify a particular material.

UNN is Miles Platts material code for an Unreinforced Nylon (used primarily for Insulation covers and potting boxes) to a flammability rating of UL94V2 – We currently use the materials as listed above, but we reserve the right to use an alternative material of the same or better characteristics should quality or commercial reasons arise. Please use the specific material code\* to specify a particular material.

FGN is Miles Platts material code for a Glass Reinforced Nylon to a flammability rating of UL94V0 – We currently use the materials as listed above, but we reserve the right to use an alternative material of the same or better characteristics should quality or commercial reasons. Please use the specific material code\* to specify a particular material.

If a specific material is required as in the case of complying with a UL 1446 insulation system, the material must be clearly stated on your purchase order.





Manufacturer, Trade Name & Grade	UL Material (QMFZ2) File Number	Minimum Thickness (mm) UL Flammability Rating	Thickness mm used for following CTI, HWI, HAI & RTI's Indices	CTI Group	HWI Group	HAI Group	RTI Elec °C	RTI Imp °C	RTI Str °C
<b>Nylon 66</b>									
DuPont Zytel 70G30HSL	E41938	HB (0.75)	HB (0.75)	1	4	0	140	125	140
Rhodia Technyl A218V30	E44716	HB (0.8)	HB (0.8)	1	4 (1.5mm)	4 (1.5mm)	125	95	95
Rhodia Technyl A20V25	E44716	V0 (0.75)	V0 (0.75)	1	2	0	105	105	105
DuPont Zytel 101F	E41938	V2 (0.71)	V2 (0.71)	0	4	0	130	75	85
<b>Nylon 66/6</b>									
EMS Grilon TSV0	E53898	V0 (0.4)	V0 (0.8)	0	4	0	125	105	120
<b>Nylon 6</b>									
DSM Akulon K224HG6	E47960	HB (0.75)	HB (0.75)	1	2	0	140	120	140
<b>Nylon 46</b>									
DSM Stanyl TE250 F6	E47960	V0 (0.35)	V0 (0.75)	2	0	0	140	110	120
<b>PET Polyester</b>									
DuPont Rynite FR530L	E41938	V0 (0.35)	V0 (0.75)	2	2	1	155	155	155
<b>PBT Polyester</b>									
DSM Arnite TV4261	E47960	HB (0.71)	HB (0.71)	1	3	1	140	130	140
<b>PPS Polyphenylene Sulphide</b>									
Ticona Fortron 1140 L4	E107854	V0 (0.38)	V0 (0.81)	4	3	4	220	200	200
<b>LCP Liquid Crystal Polymer</b>									
Ticona Zenite 6130L	E344082	V0 (0.38)	V0 (0.75)	3	3	4	240	220	240
Ticona Vectra E130i	E83005	V0 (0.2)	V0 (0.75)	4	2	4	240	220	240
Sumikasuper LCP E4008	E54705	V0 (0.3)	V0 (0.75)	3	3	0	220	180	220
<b>PF Phenolic</b>									
Sumitomo Sumikon PM9630	E41429	V0 (0.16)	V0 (0.32)	3	3	0	150	150	150

For further information on UL Performance Level Categories (PLC) of CTI, HWI and HAI please follow this link <http://www.ul.com/global/eng/pages/offerings/industries/chemicals/plastics/testing/746a/>

### Responsibility For Selection

The responsibility for the selection of appropriate materials and systems lies with the manufacturer of the electro-technical product. Only experience or adequate acceptable tests provide basis for assigning rational temperature limits for the insulation. Service experience is an important basis for the selection.

The property data used has been taken from material manufacturers data sheets and UL (QMFZ2 and UL1446) test results. Miles Platts Limited has made every effort to ensure this property data has been collated without error or omission, but ultimately it is the responsibility of the customer to independently verify this data before final design approval.



# Layout of the UL iQ™ Yellow Card

Component - Plastics E41938 — UL File Number

Manufacturer's Name: **E I DUPONT DE NEMOURS & CO INC**  
ENGINEERING POLYMERS, CHESTNUT RUN PLAZA, PO BOX 80713, WILMINGTON DE 19880

Material Grade: **FR530 (I) (+) (f1), FR530L (I) (+) (f1)**

UL94 Flame Class: **Polyethylene Terephthalate (PET), glass reinforced, flame retardant, "Rynite", furnished as pellets**

Minimum Thickness Approved: **0.35 mm**

Material Colours Tested: **NC, BK, ALL, NC, NC, BK, ALL, ALL**

Colour	Min. Thick. mm	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
NC, BK	0.35	V-0	3	1	155	-	-
ALL	0.75	V-0	2	1	155	155	155
NC	0.9	V-0, 5VA	2	1	155	155	155
NC, BK	1.5	V-0, 5VA	0	1	155	155	155
ALL	2.0	V-0, 5VA	0	1	155	155	155
ALL	3.0	V-0, 5VA	0	1	155	155	155

Comparative Tracking Index (CTI): 2      Dimensional Stability (%): 0  
 High-Voltage Arc Tracking Rate (HVTR): 1      High Volt, Low Current Arc Resis (D495): 6  
 Dielectric Strength (KV/mm): 34      Volume Resistivity (10<sup>8</sup> ohm-cm): 16

(+) - Virgin and regrind up to 50% by weight inclusive, have the same basic material characteristics.  
 (f1) - Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.  
 (I) - Recognised ground insulation component at 0.4mm with MW79 in UL1446 Class 155 electrical insulation system designated R201N (File E69939).

NOTE - (1) Material designations that are color pigmented may be followed by suffix letters and numbers.  
 (2) Material designations may be prefixed by "ZYT" or "MIN" for Minion or "DEL" for Delrin or "CRA" for Crastin or "RYN" for Rynite or "ETPV" for ETPV grades.

ANSI/UL 94 small-scale test data does not pertain to building materials, furnishings and related contents. ANSI/UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

Report Date: 1996-01-04.      Last Revised: 2008-09-05.      Underwriters Laboratories Inc®

### IEC and ISO Test Methods

Test Name	Test Method	Units	Thickness Tested (mm)	Value
Flammability	IEC 60695-11-10,	Class (color)	0.35	V-0 (NC, BK)
	IEC 60695-11-20		0.75	V-0 (ALL)
			0.9	V-0, 5VA (NC)
			1.5	V-0, 5VA (NC, BK)
			2.0	V-0, 5VA (ALL)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	C	0.75	960
			0.9	960
			1.5	960
			2.0	960
			3.0	960
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	C	0.75	800
			0.9	800
			1.5	800
			2.0	985
			3.0	985
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	C	3.0	245
ISO Heat Deflection (1.80 MPa)	ISO 75-2	C	-	-
ISO Tensile Strength	ISO 527-2	MPa	-	-
ISO Flexural Strength	ISO 178	MPa	-	-
ISO Tensile Impact	ISO 8256	kJ/m2	-	-
ISO Izod Impact	ISO 180	kJ/m2	-	-
ISO Charpy Impact	ISO 179-2	kJ/m2	-	-

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Yellow cards for all of our moulding materials can be found at <http://iq.ul.com>. Miles Platts is a UL recognised moulder - E176491

## Approval of engineering plastics

UL approval is generally essential before equipment can be sold in the United States. Approval tests on equipment are lengthy and expensive. The operation can however be greatly simplified if UL-approved materials, i.e. appearing on the yellow cards, are used. Engineering plastics manufacturers are therefore having an increasing number of materials approved to make things easier for users.

Approval covers three aspects:

- flame class, governed by the UL 94 standards,
- temperature indices, governed by the UL 746 B standard,
- basic properties, determined under the UL 746 A standard.

The results are given for each material, in each colour, and for a specific thickness, which is the actual thickness of the specimen tested. This means that comparisons between materials are valid only if the thickness is the same.





## Miles Platts achievement as a UL Recognised Moulder

**QMMY2.E176491 - January 20, 1997**

**Fabricated Parts - Component**

**MILES-PLATTS LTD**

Unit Z, Blaby Industrial Park,  
Winchester Avenue, Blaby,  
Leicester LE8 4GZ, United Kingdom

E176491

**Fabricated plastic parts**, Recognition based on material traceability, UL assigned designation A1753.

**Marking:** Company name and UL assigned designation on part, shipping carton, or spec sheet in shipping carton.

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Listed and covered under UL's Follow-Up Service. Always look for the Mark on the product.

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**When using a moulded bobbin in a UL1446 electrical insulation system a UL recognised moulder must manufacture the bobbin to ensure full traceability of materials.**

### RoHS Statement

All standard moulding materials used by Miles-Platts are certified by the relevant manufacturer to comply with European directive 2011/65/EU (RoHS). Please refer to our website for further information.

Miles-Platts provide lead-free plating on all terminals & wire.  
Please consult technical sales for any specific requirements or information.

### REACH Statement

All standard moulding materials used by Miles-Platts are certified by the relevant manufacturer to comply with European REACH directive. Please refer to [www.milesplatts.co.uk](http://www.milesplatts.co.uk) for further information.



**MILES · PLATTS**

“ We develop product and processes through innovation and technology. ”

“ Wir entwickeln Erzeugnisse und Verfahren durch Innovation und Technologie. ”

“ Nous développons des produits et des procédés à travers l’innovation et la technologie. ”

“ Desarrollamos todos los productos mediante la utilización de la mejor tecnología e innovación. ”

