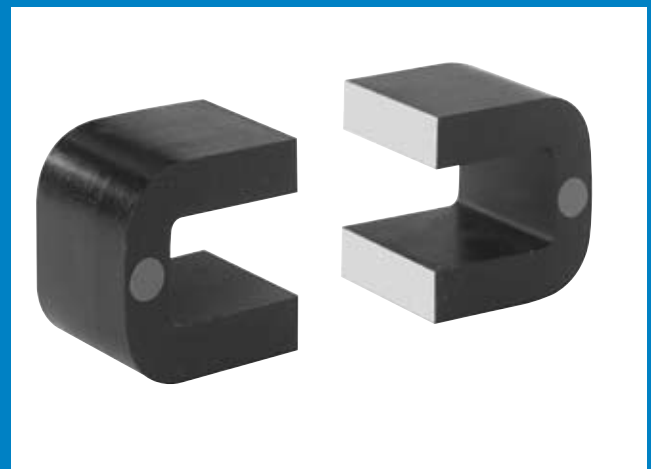


'C' cores



'C' cores

Standard 'C' Cores

To cater for the demands of the electronic and electrical industries in the manufacture of transformers, chokes, reactors and magnetic amplifiers, Wiltan manufacture a wide range of strip wound 'C' Cores.

Cut 'C' Cores are produced in three standard ranges – British, Continental and American – all of which can be supplied to various electrical specifications. The cores covered by these standard ranges can be supplied with short despatch times.

Non-Standard 'C' Cores

'C' Cores can be manufactured outside the physical dimensions of the standard ranges for special applications. It is however, advantageous to utilise the standard ranges whenever practicable to obtain price and delivery advantage.

Preferred Strip Widths

The preferred strip widths from which Wiltan produces cores are: -

METRIC	mm	mm	mm	mm	mm
	6.0	20.0	38.0	50.0	70.0
	10.0	22.0	40.0	55.0	75.0
	12.5	25.0	42.0	56.0	80.0
	13.0	28.0	44.5	60.0	82.5
	15.0	30.0	45.0	62.0	85.0
	16.0	32.0	46.0	63.5	90.0
	19.0	35.0	48.0	65.0	95.0

Above 100mm in steps of 5mm up to 200 mm.

The preferred strip widths cater for all cores in the standard ranges listed. Cores can be supplied in strip widths outside the preferred sizes but a surcharge may be made.

Electrical Guarantees

All cores, unless otherwise stated, are individually tested to the standard guarantee specifications shown under the tables covering the standard range of cores.

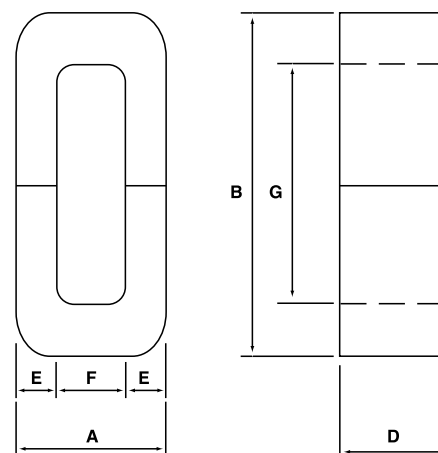
Special test conditions, when required, can be applied and guaranteed to suit customers' individual requirements.

BRITISH RANGE 0.3, 0.1 & 0.05mm 'C' CORES TO DEF 5193

Imperial Dimensions

WILTAN 'C' CORES, BRITISH RANGE

NOTE: This range of cores is equivalent to the German DIN.41309 SG Series and the French UTE C93 – 325 FA Series.



CORE REF.		DIMENSION IN INCHES								Length of Flux Path (Lm) cms	Nett Cross Section Area cm ²		Nominal Weight Kgs		Approx V.A. Ratings for 2 Loops			
B.S. 5347	HWR	A		B		D		E	F		G	Max Corner Radius	0.3 mm	0.1mm	0.3mm	0.1mm	0.3 mm 50Hz	0.1mm 400Hz
		Tol.		Tol.		Tol.		Tol.	Min.		Min.							
Q 1.1	3/4	3/4		1 1/16	1/4	1/4		1/4	9/16	1/32		6.42	-	0.372	-	0.018	-	-
2.1	4/5	15/16	+5/64	1 5/16	+3/32	5/16	+1/32	5/16	+1/32	5/16	1 1/16	7.87	-	0.582	-	0.035	-	-
3.1	5/6	1 1/8		1 5/8		3/8		3/8		7/8		9.64	-	0.862	-	0.063	-	-
4.1	7/6	1 3/16		1 7/8		3/8		3/8		7/16	1 1/8	11.23	0.89	0.862	0.076	0.074	-	-
Q 5.1	10/8				1/2								0.96	0.93	0.093	0.090	17	85
5.2	10/12	1 1/8	+5/64	2 1/8	+3/32	3/4	+1/32	5/16	+1/32	1/2	1 1/2	1 1/16	1.44	1.40	0.140	0.136	26	130
5.3	10/16				1								1.92	1.86	0.187	0.181	32	160
5.4	10/24				1 1/2								2.88	2.79	0.280	0.271	40	200
Q 6.1	30/8				1/2								1.15	1.12	0.145	0.140	38	190
6.2	30/12	1 3/8	+5/64	2 3/4	+1/8	3/4	+1/32	3/8	+1/32	5/8	2	1/16	1.72	1.67	0.217	0.210	53	260
6.3	30/16				1								2.30	2.23	0.290	0.281	70	350
6.4	30/20				1 1/4								2.87	2.78	0.362	0.350	84	420
Q 7.1	40/12				3/4								1.72	1.67	0.239	0.231	63	315
7.2	40/16	1 1/2	+5/64	3	+1/8	1	+1/32	3/8	+1/32	3/4	2 1/4	1/8	2.30	2.23	0.318	0.300	80	400
7.3	40/20				1 1/4								2.87	2.78	0.398	0.385	95	475
7.4	40/24				1 1/2								3.45	3.35	0.477	0.462	120	600
Q 8.1	50/14				7/8								2.68	2.60	0.431	0.417	120	575
8.2	50/18	1 7/8	+5/64	3 1/2	+1/8	1 1/8	+1/32	1/2	+1/32	7/8	2 1/2	1/8	3.45	3.35	0.553	0.535	150	720
8.3	50/24				1 1/2								4.60	4.46	0.738	0.715	210	1000
8.4	50/32				2								6.13	5.95	0.985	0.954	270	1300
Q 9.1	70/12				3/4								2.87	2.78	0.566	0.548	210	450
9.2	70/18	2 3/8	+5/64	4 1/4	+1/8	1 1/8	+1/32	5/8	+1/32	1 1/8	3	1/8	4.54	4.40	0.850	0.893	320	1420
9.3	70/24				1 1/2								5.75	5.57	1.134	1.098	390	1750
9.4	70/32				2								7.66	7.42	1.511	1.463	490	2200
Q 10.1	90/16				1	+1/32							4.60	4.45	1.074	1.040	420	1800
10.2	90/24	2 7/8	+5/64	5	+1/8	1 1/2	+1/32	3/4	+1/32	1 3/8	3 1/2	1/8	6.90	6.68	1.613	1.562	630	2700
10.3	90/32				2	+1/32							9.23	8.94	2.150	2.082	810	3500
10.4	90/44				2 3/4	+1/16							12.65	12.25	2.956	2.862	1050	4500
Q 11.1	110/20				1 1/4	+1/32							7.68	7.44	2.324	2.250	1000	4200
11.2	110/32	3 3/4	+5/64	6 1/2	+3/16	2	+1/32	1	+1/32	1 3/4	4 1/2	1/8	12.26	11.87	3.719	3.601	1600	6700
	110/64				4	+1/16							24.60	23.82	7.438	7.203	2700	10000

The ratings quoted have been determined under conditions described in the introduction

RELAXED TOLERANCES (ins) FOR COMMERCIAL GRADE CORES REFERRING TO SPECIFICATIONS OS-210 ONLY

A + 3/32	HWR 10 to 110 Range	E + 1/32	HWR 10 to 50 Range
B + 5/32	HWR 10 Range	- 1/64	
+ 3/16	HWR 30 to 90 Range	+ 1/32	HWR 70 to 110 Range
+ 1/4	HWR 110 Range	- 1/32	
D + 1/32	WHEN D ≤ 2	F & G MINIMUM	
+ 1/16	WHEN D > 2		

CALCULATION OF WEIGHT OF 'C' CORES

$$\text{Weight in kilos} = [A+B+F+G - (8-2\pi)(R + \frac{E}{2})] \times E \times D \times p$$

Where A,B,D,E,F & G are dimensions in inches

p = 0.125 x Stacking Factor

& Stacking Factor 0.3mm Material = 0.95

0.1mm Material = 0.92

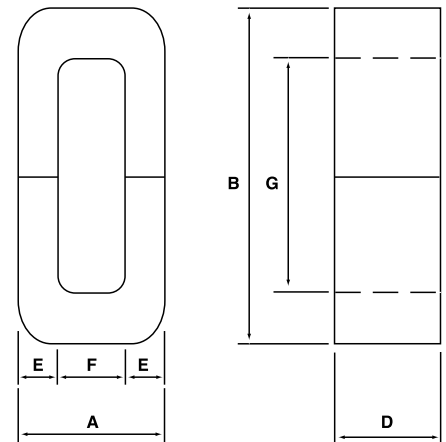
0.05mm Material = 0.88

BRITISH RANGE 0.3, 0.1 & 0.05mm 'C' CORES TO DEF 5193

Metric Dimensions

WILTAN 'C' CORES, BRITISH RANGE

NOTE: This range of cores is equivalent to the German DIN.41309 SG Series and the French UTE C93 – 325 FA Series.



CORE REF.		DIMENSION IN mm										Length of Flux Path (Lm) cms	Nett Cross Section Area cm ²		Nominal Weight Kgs		Approx V.A. Ratings for 2 Loops	
B.S. 5347	HWR	A	B	D		E		F	G	R	0.3mm		0.1mm	0.3mm	0.1mm	0.3mm 50Hz	0.1mm 400Hz	
		max.	max.	min.	max.	min.	max.	min.	min.	max.								
Q 1.1	3/4	21.03	29.37	6.35	7.14	6.35	7.14	6.35	14.29		6.42	-	0.372	-	0.018	-	-	
2.1	4/5	25.80	35.72	7.94	8.73	7.94	8.73	7.94	17.46	0.79	7.87	-	0.582	-	0.063	-	-	
3.1	5/6	30.56	43.66	9.52	10.32	9.52	10.32	9.52	22.22		9.64	-	0.862	-	0.063	-	-	
4.1	7/6	32.15	50.01	9.52	10.32	9.52	10.32	11.11	28.58		11.23	0.89	0.862	0.076	0.074	-	-	
Q 5.1	10/8			12.70	13.49						12.82	0.96	0.93	0.093	0.090	17	85	
5.2	10/12	30.56	56.36	19.05	19.84	7.94	8.73	12.70	38.10	1.59	12.82	1.44	1.40	0.140	0.136	26	130	
5.3	10/16			25.40	26.19						12.82	1.92	1.86	0.187	0.181	32	160	
5.4	10/24			38.10	38.89						12.82	2.88	2.79	0.280	0.271	40	200	
Q 6.1	30/8			12.70	13.49						16.57	1.15	1.12	0.145	0.140	38	190	
6.2	30/12	36.91	73.02	19.05	19.84	9.52	10.32	15.88	50.80	1.59	16.57	1.72	1.67	0.217	0.210	53	260	
6.3	30/16			25.40	26.19						16.57	2.30	2.23	0.290	0.281	70	350	
6.4	30/20			31.75	32.54						16.57	2.87	2.78	0.362	0.350	84	420	
Q 7.1	40/12			19.05	19.84						18.20	1.72	1.67	0.239	0.231	63	315	
7.2	40/16	40.08	79.38	25.40	26.19	9.52	10.32	19.05	57.15	3.18	18.20	2.30	2.23	0.318	0.300	80	400	
7.3	40/20			31.75	32.54						18.20	2.87	2.78	0.398	0.385	95	475	
7.4	40/24			38.10	38.89						18.20	3.45	3.35	0.477	0.462	120	600	
Q 8.1	50/14			22.22	23.02						21.10	2.68	2.60	0.431	0.417	120	575	
8.2	50/18	49.61	92.08	28.58	29.37	12.70	13.49	22.22	63.50	3.18	21.10	3.45	3.35	0.553	0.535	150	720	
8.3	50/24			38.10	38.89						21.10	4.60	4.46	0.738	0.715	210	1000	
8.4	50/32			50.80	51.59						21.10	6.13	5.95	0.985	0.954	270	1300	
Q 9.1	70/12			19.05	19.84						25.90	2.87	2.78	0.566	0.548	210	450	
9.2	70/18	62.31	111.12	28.58	29.37	15.88	16.67	28.58	76.20	3.18	25.90	4.54	4.40	0.850	0.893	320	1420	
9.3	70/24			38.10	38.89						25.90	5.75	5.57	1.134	1.098	390	1750	
9.4	70/32			50.80	51.59						25.90	7.66	7.42	1.511	1.463	490	2200	
Q 10.1	90/16			25.40	26.19						30.72	4.60	4.45	1.074	1.040	420	1800	
10.2	90/24	75.01	130.18	38.10	38.89	19.05	19.84	34.92	88.90	3.18	30.72	6.90	6.68	1.613	1.562	630	2700	
10.3	90/32			50.80	51.59						30.72	9.23	8.94	2.150	2.082	810	3500	
10.4	90/44			69.85	71.44						30.72	12.65	12.25	2.956	2.862	1050	4500	
Q11.1	110/20			31.75	32.54						39.86	7.68	7.44	2.324	2.250	1000	4200	
11.2	110/32	97.23	169.86	50.80	51.59	25.40	26.19	44.45	114.30	3.18	39.86	12.26	11.87	3.719	3.601	1600	6700	
	110/64			101.60	103.18						39.86	24.60	23.82	7.438	7.203	2700	10000	

The ratings quoted have been determined under conditions described in the introduction

RELAXED TOLERANCES (ins) FOR COMMERCIAL GRADE CORES REFERRING TO SPECIFICATIONS OS-210 ONLY

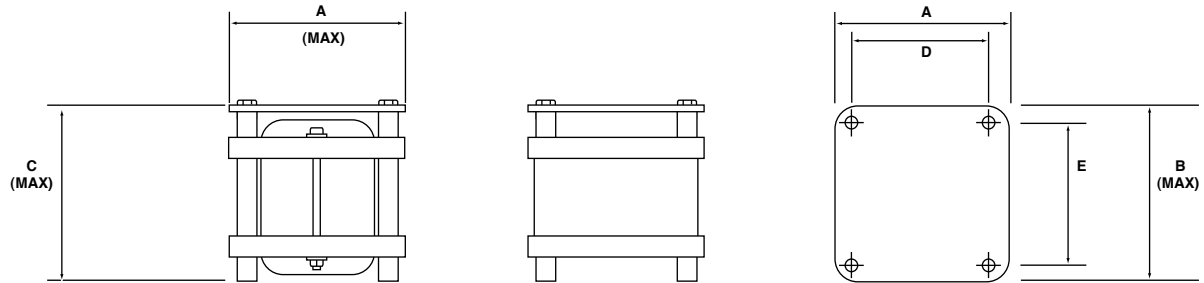
A + 2.4	HWR 10 to 110 Range	E + 0.8	HWR 10 to 50 Range
B + 4.0	HWR 10 Range	- 0.4	
+ 4.8	HWR 30 to 90 Range	+ 0.8	HWR 70 to 110 Range
+ 6.4	HWR 110 Range	- 0.8	
D + 0.8	WHEN D ≤ 50.8	F & G MINIMUM	
+ 1.6	WHEN D > 50.8		

CALCULATION OF WEIGHT OF 'C' CORES

$$\text{Weight in kilos} = [A+B+F+G - (8-2\pi) \left(\frac{R+E}{2} \right)] \times E \times D \times \rho$$

Where A,B,D,E,F & G are dimensions in mm
 $\rho = 7.65 \times 10^{-6}$ Stacking Factor
 Stacking Factor 0.3mm Material = 0.95
 0.1mm Material = 0.92
 0.05mm Material = 0.88

CEE CLAMP – CAST ALLOY OPEN TYPE ASSEMBLY TO SUIT BRITISH RANGE OF 'C' CORES

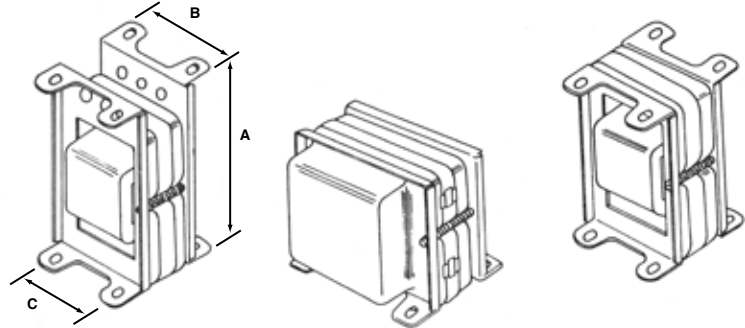


PATTERN H		PATTERN J		MAX. PLAN		FIXING CENTRES		FIXING SCREW SIZE
Clamp Ref.	Height Max. C (mm)	Clamp Ref.	Height Max. C (mm)	DIMENSIONS (mm)		(mm)		Metric
				A	B	D	E	
TDH 1008	66.5	TDJ 1008	53.8	71.5	66.7	49.2	46.0	M4
1012	72.9	1012	60.2					
1016	79.2	1016	66.5					
1024	91.9	1024	79.2					
TDH 3008	73.2	TDJ 3008	60.45	84.2	81.8	61.9	58.7	M4
3012	79.5	3012	66.8					
3016	85.9	3016	73.1					
3020	92.2	3020	79.5					
TDH 4012	87.9	TDJ 4012	75.2	90.5	88.9	66.7	65.1	M5
4016	94.2	4016	81.5					
4020	100.5	4020	87.9					
4024	106.9	4024	94.2					
TDH 5014	97.2	TDJ 5014	84.6	109.6	101.6	80.9	73.0	M5
5018	103.6	5018	90.9					
5024	113.0	5024	100.3					
5032	125.7	5032	113.0					
TDH 7012	107.4	TDJ 7012	94.7	138.1	122.3	101.6	87.3	M6
7018	117.1	7018	104.4					
7024	126.5	7024	113.8					
7032	139.2	7032	126.5					
TDH 9016*	126.7	9016	114.0	161.9	139.7	123.8	103.2	5/16" BSF
9024*	139.4	9024	126.7					
9032*	152.1	9032	139.4					
9044*	172.7	9044	160.0					
TDH 11020*	158.7	TDJ 11020	146.0	212.7	185.8	165.1	133.4	5/16" BSF
1032*	177.8	11032	165.1					
11064*	229.1	11064	216.4					

* TDH AND TDJ PATTERN RANGES 90 AND 110 ARE THREE FRAME ASSEMBLIES

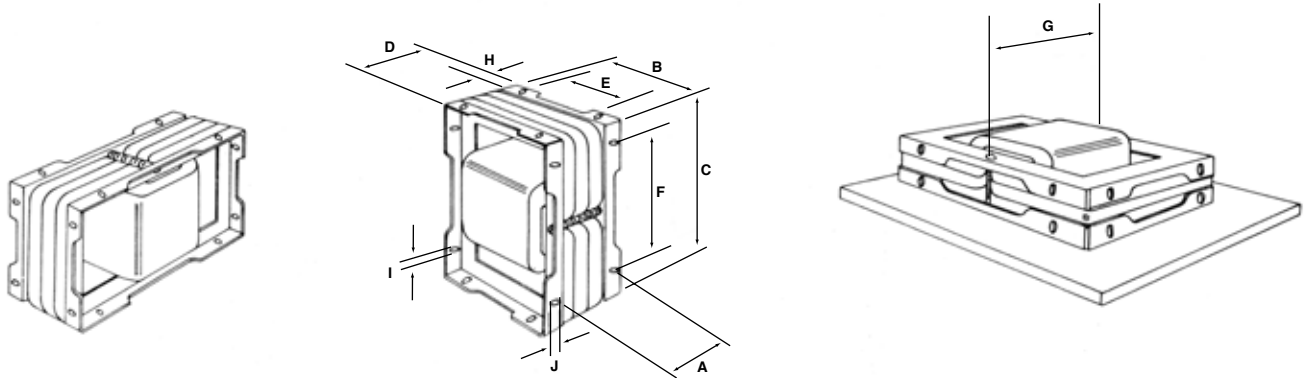
NOTE: Height and Plan dimensions as quoted in A.S.R.E Specification 12429R

'54' SERIES PRESSED STEEL CLAMPING FRAME ASSEMBLY TO SUIT BRITISH RANGE 'C' CORES

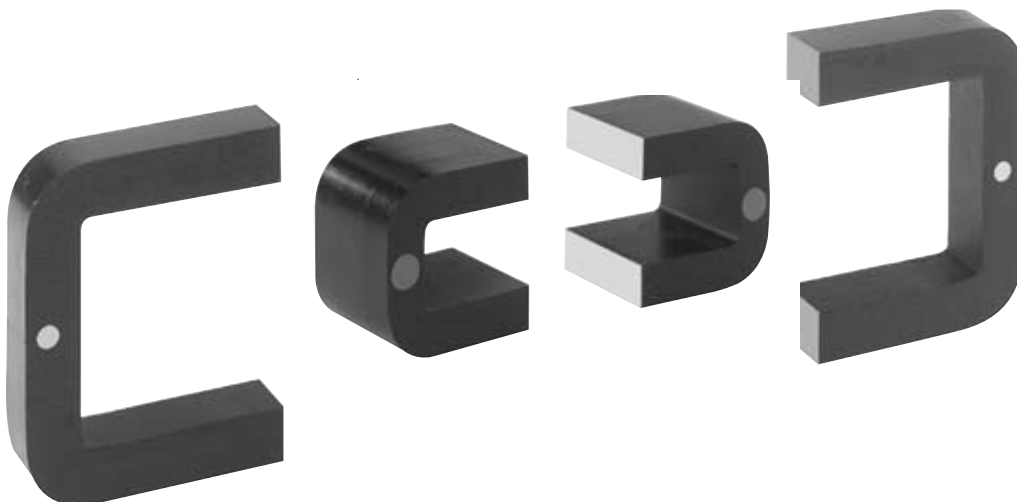


'C' Core Range	Clamping Frame Reference	Type	A	B	C	
			Height ins	Max. Width Dimensions ins	Fixing Centre ins	Clamping Screw Size
10 Range	54/2751	Shrouded	2 ⁹ / ₁₆	2 ¹¹ / ₁₆	2 ⁵ / ₈	4 BA
	54/2701	Open Short	2 ⁹ / ₁₆	2 ³ / ₁₆	2 ⁵ / ₈	4 BA
	54/2731	Open Tall	3 ¹ / ₃₂	2 ³ / ₁₆	2 ⁵ / ₈	4 BA
30 Range	54/2755	Shrouded	3 ¹ / ₁₆	3 ⁵ / ₁₆	2 ³ / ₄	4 BA
	54/2705	Open Short	3 ¹ / ₈	3 ⁵ / ₁₆	2 ³ / ₄	4 BA
	54/2735	Open Tall	3 ⁹ / ₁₆	3 ⁵ / ₁₆	2 ³ / ₄	4 BA
40 Range	54/2759	Shrouded	3 ⁵ / ₁₆	3 ⁹ / ₁₆	2 ⁷ / ₈	2 BA
	54/2709	Open Short	3 ³ / ₈	3 ⁹ / ₁₆	2 ⁷ / ₈	2 BA
	54/2739	Open Tall	3 ¹³ / ₁₆	3 ⁹ / ₁₆	2 ⁷ / ₈	2 BA
50 Range	54/2763	Shrouded	4 ¹ / ₈	4 ¹ / ₁₆	3 ³ / ₈	2 BA
	54/2713	Open Short	4 ¹ / ₄	4 ¹ / ₁₆	3 ³ / ₈	2 BA
	54/2743	Open Tall	4 ⁵ / ₈	4 ¹ / ₁₆	3 ³ / ₈	2 BA
70 Range	54/2767	Shrouded	5 ¹ / ₈	4 ¹³ / ₁₆	3 ⁵ / ₈	1/4 BSF
	54/2717	Open Short	5 ¹ / ₄	4 ¹³ / ₁₆	3 ⁵ / ₈	1/4 BSF
	54/2747	Open Tall	5 ⁵ / ₈	4 ¹³ / ₁₆	3 ⁵ / ₈	1/4 BSF

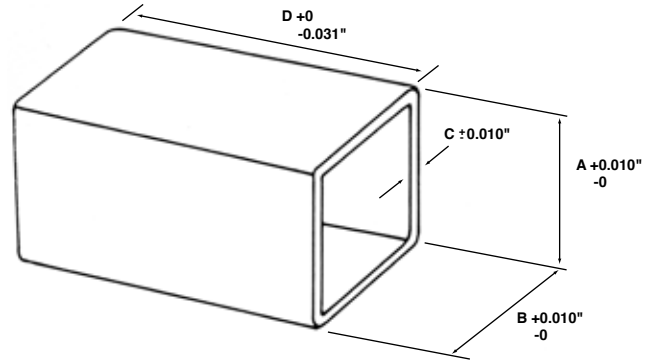
CEE FRAME – PRESSED STEEL OPEN TYPE ASSEMBLY TO SUIT BRITISH RANGE ‘C’ CORES



Core Ref.	Frame Ref.	DIMENSIONS IN INCHES									
		A	B	C	D	E	F	G	H	I	J
HWR 10/8	CF 10	1 1/16	2 5/8	2 3/16	1 1/2	2	2	2 3/64	1/2	5/32	1/4
10/12		1 5/16	2 5/8	2 3/16	1 3/4	2	2	2 3/64	1/2	5/32	1/4
10/16		1 9/16	2 5/8	2 3/16	2	2	2	2 3/64	1/2	5/32	1/4
10/24		2 1/16	2 5/8	2 3/16	2 1/2	2	2	2 3/64	1/2	5/32	1/4
HWR 30/8	CF 30	1 1/16	3 5/16	3 1/8	1 1/2	2 5/8	2 1/2	2 3/4	1/2	5/32	1/4
30/12		1 5/16	3 3/16	3 1/8	1 3/4	2 5/8	2 1/2	2 3/4	1/2	5/32	1/4
30/16		1 9/16	3 3/16	3 1/8	2	2 5/8	2 1/2	2 3/4	1/2	5/32	1/4
30/20		1 11/16	3 15/16	3 1/8	2 1/4	2 5/8	2 1/2	2 3/4	1/2	5/32	1/4
HWR 40/12	CF 40	1 3/8	3 1/2	3 3/8	2	2 3/4	2 3/4	2 15/16	5/8	7/32	3/8
40/16		1 5/8	3 1/2	3 3/8	2 1/4	2 3/4	2 3/4	2 15/16	5/8	7/32	3/8
40/20		1 7/8	3 1/2	3 3/8	2 1/2	2 3/4	2 3/4	2 19/16	5/8	7/32	3/8
40/24		2 1/8	3 1/2	3 3/8	2 3/4	2 3/4	2 3/4	2 19/16	5/8	7/32	3/8
HWR 50/14	CF 50	1 1/2	4	4 1/4	2 1/2	3 1/8	3 1/2	3 5/16	5/8	7/32	3/8
50/18		1 3/4	4	4 1/4	2 3/8	3 1/8	3 1/2	3 3/16	5/8	7/32	3/8
50/24		2 1/8	4	4 1/4	2 3/4	3 1/8	3 1/2	3 5/16	5/8	7/32	3/8
50/32		2 5/8	4	4 1/4	3 1/4	3 1/8	3 1/2	3 5/16	5/8	7/32	3/8
HWR 70/12	CF 70	1 9/16	4 13/16	5 1/4	2 1/4	3 3/4	4 3/8	3 15/16	3/4	9/32	7/16
70/18		1 15/16	4 13/16	5 1/4	2 5/8	3 3/4	4 3/8	3 15/16	3/4	9/32	7/16
70/24		2 15/16	4 13/16	5 1/4	3	3 3/4	4 3/8	3 15/16	3/4	9/32	7/16
70/32		2 13/16	4 13/16	5 1/4	3 1/2	3 3/4	4 3/8	3 15/16	3/4	9/32	7/16
HWR 90/16	CF 90	2	5 17/32	6 1/4	3 3/8	4 1/2	5 1/4	4 9/16	1 1/16	3/8	5/8
90/24		2	5 17/32	6 1/4	3 5/8	4 1/2	5 1/4	4 9/16	1 1/16	3/8	5/8
90/32		3	5 17/32	6 1/4	4 1/8	4 1/2	5 1/4	4 9/16	1 1/16	3/8	5/8
90/44		3	5 17/32	6 1/4	4 1/8	4 1/2	5 1/4	4 9/16	1 1/16	3/8	5/8



RECTANGULAR TUBES TO SUIT BRITISH RANGE 'C' CORES



CORE REF. SPEC. BS. 5347 IEC.329	CORE REF. DEF. 5193	TUBE REF.	DIMENSIONS IN INCHES			
			A	B	C	D
Q. 1.1 2.1 3.1 4.1 5.3	HWR 3/4	* 50/8888	5/16	5/16	1/32	1/2
		* 50/8889	3/8	3/8	1/32	5/8
		* 50/8890	7/16	7/16	1/32	13/16
		* 50/8891	7/16	7/16	1/32	1 1/16
		* 50/8892	1 1/16	3/8	1/16	1 7/16
Q. 5.1 5.2 5.3 5.4	HWR 10/8	50/8975	9/16	3/4	1/16	1 7/16
		50/8976	13/16	3/4	1/16	1 7/16
		50/8977	1 1/16	3/4	1/16	1 7/16
		50/8978	1 9/16	3/4	1/16	1 7/16
Q. 6.1 6.2 6.3 6.4	HWR 30/8	50/8979	9/16	7/8	1/16	1 15/16
		50/8980	13/16	7/8	1/16	1 15/16
		50/8981	1 1/16	7/8	1/16	1 15/16
		50/8982	1 5/16	7/8	1/16	1 15/16
Q. 7.1 7.2 7.3 7.4	HWR 40/12	50/8983	13/16	7/8	1/16	2 1/8
		50/8984	1/16	7/8	1/16	2 1/8
		50/8985	1 5/16	7/8	1/16	2 1/8
		50/8986	1 9/16	7/8	1/16	2 1/8
Q. 8.1 8.2 8.3 8.4	HWR 50/14	50/8987	15/16	1 1/8	1/16	2 3/8
		50/8988	1 3/16	1 1/8	1/16	2 3/8
		50/8989	1 9/16	1 1/8	1/16	2 3/8
		50/8990	2 1/16	1 1/8	1/16	2 3/8
Q. 9.1 9.2 9.3 9.4	HWR 70/14	50/8991	13/16	1 3/8	1/16	2 7/8
		50/8992	1 3/16	1 3/8	1/16	2 7/8
		50/8993	1 9/16	1 3/8	1/16	2 7/8
		50/8994	2 1/16	1 3/8	1/16	2 7/8
Q. 10.1 10.2 10.3 10.4	HWR 90/16	50/8995	1 1/16	1 5/8	3/32	3 3/8
		50/8996	1 9/16	1 5/8	3/32	3 3/8
		50/8997	2 1/8	1 5/8	3/32	3 3/8
		50/8998	2 7/8	1 5/8	3/32	3 3/8
Q. 10.1 11.2	HWR 110/20	50/8999	1 5/16	2 1/8	1/8	4 3/8
		50/8848	2 1/8	2 1/8	1/8	4 3/8
		50/8851	4 1/8	2 1/8	1/8	4 3/8

NOTE:* Single Loop only. All other sizes, Double Loop.

TUBES ARE MANUFACTURED IN SPBP TO BS.6128 (RATED 120° OPERATING).

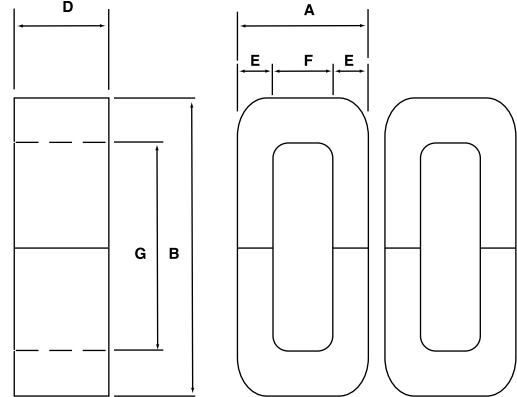
CORRELATION OF BRITISH RANGE 'C' CORES AND ACCESSORIES

BS Spec. 5347 & IEC Spec. 329	UK Spec. Def. 5193	UK Inter-Services Core Ref.		Ceeclamps Pattern	Ceeframes Reference	'54' Series Pressed Steel Clamp Frames			Rectangular Tubes Reference	
		0.3mm Strip	0.1mm Strip			Shrouded	Open Short	Open Tall		
Q. 1.1 2.1 3.1 4.1 5.3	HWR 3/4 4/5 5/6 7/6 10/16	Z371001	Z371030 Z371031 Z371032 Z371033 Z371020						*50/8888 *50/8889 *50/8890 *50/8891 *50/8892	
Q. 5.1 5.2 5.3 5.4	HWR 10/8 10/12 10/16 10/24		Z371038 Z371000 Z371001 Z371002	Z371018 Z371019 Z371020 Z371034	TDH 1008 TDH 1012 TDH 1016 TDH 1024	CF 10 CF 10 CF 10 CF 10	54/2751 54/2751 54/2751 54/2751	54/2701 54/2701 54/2701 54/2701	54/2731 54/2731 54/2731 54/2731	50/8975 50/8976 50/8977 50/8978
Q. 6.1 6.2 6.3 6.4	HWR 30/8 30/12 30/16 30/20		Z371039 Z371003 Z371004 Z371005	Z371021 Z371022 Z371023 Z371035	TDH 3008 TDH 3012 TDH 3016 TDH 3020	CF 30 CF 30 CF 30 CF 30	54/2755 54/2755 54/2755 54/2755	54/2705 54/2705 54/2705 54/2705	54/2735 54/2735 54/2735 54/2735	50/8979 50/8980 50/8981 50/8982
Q. 7.1 7.2 7.3 7.4	HWR 40/12 40/16 40/20 40/24		Z371040 Z371006 Z371007 Z371008	Z371024 Z371025 Z371026 Z371036	TDH 4012 TDH 4016 TDH 4020 TDH 4024	CF 40 CF 40 CF 40 CF 40	54/2759 54/2759 54/2759 54/2759	54/2709 54/2709 54/2709 54/2709	54/2739 54/2739 54/2739 54/2739	50/8983 50/8984 50/8985 50/8986
Q. 8.1 8.2 8.3 8.4	HWR 50/14 50/18 50/24 50/32		Z371041 Z371009 Z371010 Z371011	Z371027 Z371028 Z371029 Z371037	TDH 5014 TDH 5018 TDH 5024 TDH 5032	CF 50 CF 50 CF 50 CF 50	54/2763 54/2763 54/2763 54/2763	54/2713 54/2713 54/2713 54/2713	54/2743 54/2743 54/2743 54/2743	50/8987 50/8988 50/8989 50/8990
Q. 9.1 9.2 9.3 9.4	HWR 70/12 70/18 70/24 70/32	Z371042 Z371012 Z371013 Z371014		TDH 7012 TDH 7018 TDH 7024 TDH 7032	CF 70 CF 70 CF 70 CF 70	54/2767 54/2767 54/2767 54/2767	54/2717 54/2717 54/2717 54/2717	54/2747 54/2747 54/2747 54/2747	50/8991 50/8992 50/8993 50/8994	
Q. 10.1 10.2 10.3 10.4	HWR 90/16 90/24 90/32 90/44	Z371043 Z371015 Z371016 Z371017		TDH 9016 TDH 9024 TDH 9032 TDH 9044	CF 90 CF 90 CF 90 CF 90				50/8995 50/8996 50/8997 50/8998	
Q. 11.1 11.2	HWR 110/20 HWR 110/32 HWR 110/64	Z371044 Z371045		TDH 11020 TDH 11032 TDH 11064					50/8999 50/8848 50/8851	

NOTE: * Single Loop only. All other sizes, Double Loop.

PATTERNS – 0.3 mm MATERIAL

WILTAN ‘C’ CORES EQUIVALENT TO LAMINATION PATTERNS



Lamination Pattern Number	‘C’ Core Equivalent Number Minimum	‘C’ Core Window Dimensions	Build Up + 0 - 1/32	Overall ‘C’ Core Dimensions Maximum	Strip Width
		Inches	Inches	Inches	Inches
22 or 202	LC. 2	5 1/4 x 1 1/16	3/4	6 15/16 x 2 5/8	Up to 4
28 or 628	LC. 19	3 3/8 x 1 17/64	5/8	4 7/16 x 2 17/32	Up to 3
29	LC. 3	1 5/8 x 1 1/2	1/2	2 23/32 x 1 17/32	Up to 1 1/2
41 or 641	LC. 24	4 7/8 x 1 3/4	1 1/4	7 9/16 x 2 5/16	Up to 4
60 or 660	LC. 25	2 7/8 x 1	5/8	4 3/16 x 2 5/16	Up to 2 1/2
78	LC. 5	2 x 5/8	5/8	3 3/8 x 1 29/32	Up to 2
87	LC. 6	4 5/8 x 1 1/2	1	6 7/8 x 3 19/32	Up to 3 1/2
117	LC. 8	5 5/8 x 1 1/2	1 1/4	8 5/16 x 4 1/16	Up to 4
122	LC. 10	8 1/8 x 3/4	1 1/2	11 3/8 x 4 27/32	Up to 3 1/2
136 or 636	LC. 21	2 7/8 x 1	3/4	4 1/2 x 2 17/32	Up to 2 1/2
137 or 637	LC. 22	5 1/8 x 1 5/8	7/8	7 7/16 x 3 7/16	Up to 4
217	LC. 16	5 3/8 x 1 3/4	1 3/4	9 1/16 x 5 5/16	Up to 4
220 or 248	LC. 17	2 3/4 x 7/8	7/8	4 5/8 x 2 11/16	Up to 3
235 or 635	LC. 20	3 7/8 x 1 5/8	3/4	5 1/2 x 3 5/32	Up to 2 1/2
E 9	LC. 1	4 5/8 x 1 1/2	1 1/2	7 13/16 x 4 17/32	Up to 3 1/2
E135	LC. 12	6 7/8 x 2 1/4	2 1/4	11 9/16 x 6 25/32	Up to 6
E638	LC. 23	3 3/16 x 1 1/16	1 1/16	5 5/16 x 3 13/64	Up to 4 1/2
E825	LC. 26	4 1/4 x 1 3/8	1 3/8	7 3/16 x 4 5/32	Up to 4

2 ‘C’ Cores are required per laminated stack.

These ‘C’ Cores have been designed to suit Bobbins common to Laminations and they offer savings in handling and assembly time, improved electrical performance, and a greater rating for a given size of transformer.

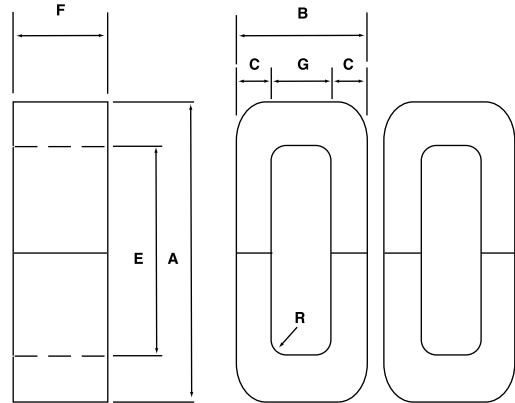
Increments in the ‘C’ Core strip or ribbon width of 1/8" up to 2", and 1/4" from 2" to 4 1/2", allow for a wide variation in the preferred core stack heights.

Many of the cores listed are available from stock, or on short delivery.

NOTE: Clamping Frames are not always interchangeable when using ‘C’ Cores in place of Laminations.

WILTAN 'C' CORES TYPE SM

SM RANGE 0.3, 0.1 & 0.05mm 'C' CORES TO DIN 41309



SM Core Ref	DIMENSIONS IN mm								Length of Flux Path (Lm) cms.	Nett Cross Section Area cm ²	Nominal Weight Kgs	Approx V.A. Ratings for 2 Loops 50 Hz.	
	A Max.	B Max.	C		E Min.	F		G Min.					R Max.
30a 30b	28.6	14.3	3.5	- 0.5	21.0	7.0 11.0	- 0.5	7.0	1.0	6.6	0.18 0.29	0.009 0.015	1.0 2.0
42	43.6	21.8	6.0	- 0.8	31.0	15.2	- 0.7	9.5	1.5	9.8	0.72	0.054	5.0
55	56.3	28.4	8.5	- 0.8	38.5	20.8	- 0.8	11.0	1.5	12.4	1.46	0.138	21.0
65	65.6	33.2	9.9	- 0.9	45.0	27.0	- 0.8	13.0	1.5	14.6	2.24	0.250	45.0
74	74.6	37.7	11.4	- 0.9	51.0	32.5	- 1.0	14.5	1.5	16.5	3.14	0.396	84.0
85a						32.5					4.01	0.561	115.0
85b	85.6	43.2	14.4	- 1.0	56.0	45.5	- 1.0	14.0	2.0	18.3	5.66	0.792	159.0
102a 102b	103.0	51.9	16.9	- 1.0	68.0	35.5 52.2	- 1.0	17.5	2.0	22.2	5.21 7.78	0.885 1.321	200.0 300.0

NOTE: The Ratings quoted relate to conditions specified in DIN. 41300.

CALCULATION OF WEIGHT OF 'C' CORES

$$\text{Weight in Kilos} = [A+B+E+G - (8-2\pi) (R + \frac{C}{2})] \times C \times F \times \rho$$

Where A,B,C,E,F,G & R are dimensions in mm.

$$\rho = 7.65 \times 10^{-6} \times \text{Stacking Factor}$$

STACKING FACTOR 0.3mm Material = 0.95

0.1mm Material = 0.92

0.05mm Material = 0.88

CALCULATION OF NETT CROSS SECTION AREA & WEIGHT

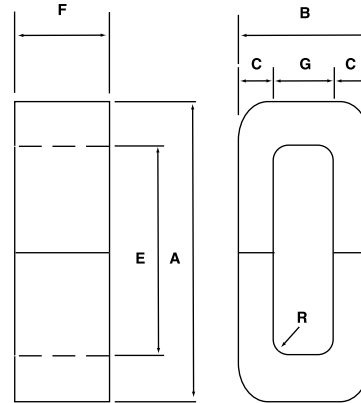
FOR 0.1mm & 0.05mm 'C' CORES

To Calculate Nett Cross Section & Weight for 0.1mm
Multiply 0.3mm figures by 0.968

To Calculate Nett Cross Section & Weight for 0.05mm
Multiply 0.3mm figures by 0.926

WILTAN 'C' CORES TYPE SU

SU RANGE 0.3, 0.1 & 0.05mm 'C' CORES TO DIN 41309



Su Core Ref.	DIMENSIONS IN mm								Length of Flux Path (Lm) cms.	Nett Cross Section Area cm ²	Nominal Weight Kgs.	Approx. V.A Ratings for 2 loops, 50Hz. 0.3mm	
	A Max.	B Max.	C		E Min.	F		G Min.					R Max.
				Tol.			Tol.			0.3mm	0.3mm		
15 ^a	28.7	15.0	4.9	-0.5	18.5	5.4		5	1.5	6.1	0.22	0.010	-
15 ^b						8.4	-0.4				0.35	0.015	-
24 ^a	42.7	24.0	7.9	-0.6	26.5	8.5		8	1.5	9.2	0.58	0.042	-
24 ^b						13.5	-0.5				0.95	0.066	-
30 ^a	52.7	30.0	9.9	-0.8	32.5	10.1		10	1.5	11.4	0.82	0.072	3
30 ^b						16.1	-0.6				1.34	0.117	6
39 ^a	67.9	39.1	12.9	-0.8	41.5	13.4		13	1.5	14.8	1.44	0.163	12
39 ^b						20.4	-0.9				2.24	0.254	20
48 ^a	82.9	48.0	15.8	-0.9	50.5	16.5		16	1.5	18.1	2.19	0.303	30
48 ^b						25.5	-1.0				3.47	0.480	48
60 ^a	103.6	60.1	19.8	-0.9	63.0	20.6		20	2.0	22.6	3.50	0.605	82
60 ^b						30.6	-1.1				5.30	0.916	122
75 ^a	128.6	75.0	24.7	-1.0	78.0	26.1		25	2.0	28.2	5.63	1.22	200
75 ^b						41.1	-1.1				9.01	1.95	306
90 ^a	155.8	90.0	29.6	-1.1	95.0	30.9		30	3.0	34.0	8.0	2.08	387
90 ^b						50.9	-1.4				13.4	3.49	630
102 ^a	175.4	102.4	33.7	-1.2	106.0	35.4		34	3.0	38.4	10.3	3.09	620
102 ^b						56.4	-1.4				17.0	5.00	960
114 ^a	195.6	114.4	37.6	-1.3	118.0	39.2		38	3.0	42.8	12.9	4.23	920
114 ^b						63.2	-1.7				21.2	6.96	1440
132 ^a	225.4	132.1	43.4	-1.4	136.0	45.2		44	3.0	49.5	17.4	6.58	1580
132 ^b						71.2	-1.7				27.1	10.50	2370
150 ^a	255.6	150.2	49.4	-1.5	154.0	51.2		50	3.0	56.2	22.5	9.70	2370
150 ^b						76.2	-1.7				33.9	14.58	3380
168 ^a	286.0	168.3	55.3	-1.6	172.0	57.0		56	3.0	63.0	28.1	13.53	3620
168 ^b						91.0	-2.0				45.5	21.88	5400
180 ^a	307.2	181.3	59.7	-1.8	184.0	62.0		60	3.0	67.6	33.0	17.07	4560
180 ^b						77.0	-2.0				41.3	21.35	6500
180 ^c						92.0					49.5	25.60	6400
210 ^a	357.2	211.2	69.9	-2.0	214.0	71.7		70	3.0	78.7	44.6	26.90	7800
210 ^b						101.7	-2.2				63.9	38.50	10500
210 ^c						131.7					83.2	50.10	12900

NOTE: The ratings quoted relate to conditions specified in DIN. 41300

CALCULATION OF WEIGHT OF 'C' CORES

$$\text{Weight in Kilos} = [A+B+E+G - (8-2\pi) (R + \frac{G}{2})] \times C \times F \times \rho$$

Where A,B,C,E,F,G & R are dimensions in mm.

$\rho = 7.65 \times 10^{-6} \times \text{Stacking Factor}$

STACKING FACTOR 0.3mm Material = 0.95

0.1mm Material = 0.92

0.05mm Material = 0.88

CALCULATION OF NETT CROSS SECTION AREA & WEIGHT

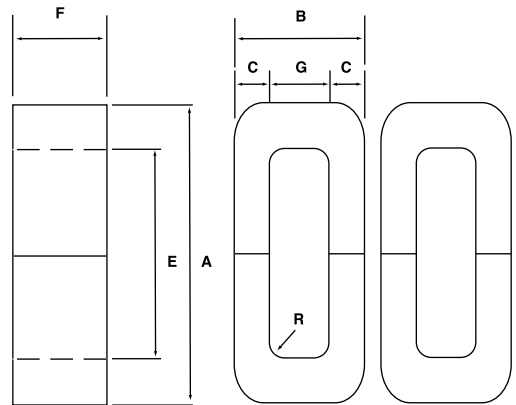
FOR 0.1mm & 0.05mm 'C' CORES

To Calculate Nett Cross Section & Weight for 0.1mm
Multiply 0.3mm figures by 0.968

To Calculate Nett Cross Section & Weight for 0.05mm
Multiply 0.3mm figures by 0.926

WILTAN 'C' CORES TYPE SE

SE RANGE 0.3, 0.1 & 0.05mm 'C' CORES TO DIN 41309



SE Core Ref.	DIMENSIONS IN mm									Length of Flux Path (Lm) cms.	Nett Cross Section Area cm ²	Nominal Weight Kgs	Approx. VA Ratings for 2 Loops, 50Hz
	A Max.	B Max.	C		E Min.	F		G Min.	R Max.				
				Tol.			Tol.						
60	52.2	30.0	9.9	-0.8	32.0	20.5	-0.8	10.5	1.5	11.4	1.8	0.15	-
66	57.2	33.5	10.9	-0.8	35.0	22.5	-0.8	11.5	1.5	12.5	2.19	0.20	-
78	68.2	39.5	12.9	-0.8	42.0	27.0	-0.9	13.5	2.0	14.9	3.16	0.343	-
84 ^a b	73.4	42.6	13.9	-0.8	45.0	29.0	-1.0	14.5	2.0	16.0	3.66	0.428	-
						43.0					5.51	0.641	
92 ^a b	77.6	46.2	11.4	-0.8	54.0	24.0	-1.0	23.0	2.0	18.7	2.44	0.333	-
						33.0					3.39	0.461	
106 ^a b	88.6	53.2	14.4	-0.8	59.0	33.0	-1.0	24.0	2.0	20.9	4.35	0.662	-
						46.0					6.12	0.930	
130 ^a b a	108.8	65.3	17.4	-0.9	73.0	37.2	-1.2	30.0	2.0	25.9	5.64	1.12	387
						47.2					7.21	1.43	484
						41.2					7.18	1.63	590
150 ^b c a	123.8	75.2	19.8	-0.9	83.0	51.2	-1.2	35.0	2.0	29.7	8.98	2.04	720
						61.2					10.80	2.45	860
						56.0					11.0	2.92	1130
170 ^b c a	145.8	85.0	22.1	-1.0	100.0	66.0	-1.5	40.0	3.0	34.7	12.9	3.42	1308
						76.0					14.9	3.96	1490
						57.0					13.8	4.58	1890
195 ^b c a	186.8	98.2	27.3	-1.1	130.0	70.0	-1.5	42.5	3.0	42.9	17.0	5.58	2250
						85.0					20.8	6.83	2390
						63.0					18.0	6.87	3000
231 ^b c	216.0	116.1	32.1	-1.3	149.0	79.0	-1.5	50.5	3.0	49.9	22.7	8.67	3710
						98.0					28.2	10.77	4400

NOTE: The ratings quoted relate to conditions specified in DIN. 41300

CALCULATION OF WEIGHT OF 'C' CORES

$$\text{Weight in Kilos} = [A+B+E+G - (8-2\pi) (R + \frac{G}{2})] \times C \times F \times \rho$$

Where A,B,C,E,F,G & R are dimensions in mm.

$\rho = 7.65 \times 10^{-6} \times \text{Stacking Factor}$
 STACKING FACTOR 0.3mm Material = 0.95
 0.1mm Material = 0.92
 0.05mm Material = 0.88

CALCULATION OF NETT CROSS SECTION AREA & WEIGHT

FOR 0.1mm & 0.05mm 'C' CORES

To Calculate Nett Cross Section & Weight for 0.1mm
 Multiply 0.3mm figures by 0.968

To Calculate Nett Cross Section & Weight for 0.05mm
 Multiply 0.3mm figures by 0.926

CORRELATION REFERENCE NOS. BRITISH RANGE OF 'C' CORES - CONTINENTAL REFERENCES



BS Spec. 5347 & IEC Spec. 329	UK Spec. DEF 5193 & Wiltan Ref.	German Spec. DIN. 41309	French Spec. UTE C93-325
			FA10/30 FL10/30
Q1.1*	HWR 3/4*	SG 27/6*	D 06*
2.1*	4/5*	33/7*	F 08*
3.1*	5/6*	41/9*	H 10*
4.1	7/6	48/19	J 10
5.1	10/8	54/13	Q 13
5.2	10/12	54/19	Q 19
5.3	10/16	54/25	Q 25
5.4	10/24	54/38	Q 38
6.1	30/8	70/13	T 13
6.2	30/12	70/19	T 19
6.3	30/16	70/25	T 25
6.4	30/20	70/32	T 32
7.1	40/12	76/19	U 19
7.2	40/16	76/25	U 25
7.3	40/20	76/32	U 32
7.4	40/24	76/38	U 38
8.1	50/14	89/22	V 22
8.2	50/18	89/29	V 29
8.3	50/24	89/38	V 38
8.4	50/32	89/51	V 51
9.1	70/12	108/19	X 19
9.2	70/18	108/29	X 29
9.3	70/24	108/38	X 38
9.4	70/32	108/51	X 51
10.1	90/16	127/25	Z 25
10.2	90/24	127/38	Z 38
10.3	90/32	127/51	Z 51
10.4	90/44	127/70	Z 70
11.1	110/20	165/32	AD 32
11.2	110/32	165/51	AD 51
-	110/64	-	-

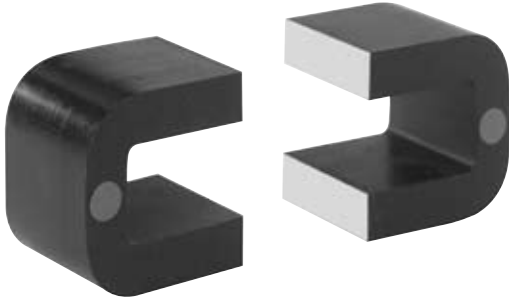
CORRELATION REFERENCE NOS. BRITISH RANGE OF 'C' CORES - CONTINENTAL REFERENCES



IEC Spec.329	German Spec. DIN.41309	French Spec. UTE C93-325	Wiltan Ref.
		FA10/30 FL10/30	
R 1.1	SE 130A	RA 36	SE 130A
R 1.2	SE 130B	RA 46	SE 130B
R 2.1	SE 150A	RB 40	SE 150A
R 2.2	SE 150B	RB 50	SE 150B
R 2.3	SE 150C	RB 60	SE 150C
R 3.1	SE 170A	RC 55	SE 170A
R 3.2	SE 170B	RC 65	SE 170B
R 3.3	SE 170C	RC 75	SE 170C
R 4.1	SE 195A	RD 56	SE 195A
R 4.2	SE 195B	RD 69	SE 195B
R 4.3	SE 195C	RD 84	SE 195C
R 5.1	SE 231A	RE 62	SE 231A
R 5.2	SE 231B	RE 78	SE 231B
R 5.3	SE 231C	RE 97	SE 231C
P 1.1	-	BA 3	P 1.1
P 2.1	-	BB 3	P 2.1
P 3.1	-	BB 6	P 3.1
P 4.1	-	BD 3	P 4.1
P 4.2	-	BD 6	P 4.2
P 5.1	-	BH 6	P 5.1

French Ref.	Wiltan Ref.
AJ. 32	C 3272
AJ. 51	C 3168
AP. 32	C 3430
AP. 51	C 3431
AS. 51	C 3432
AS. 70	C 3433
AS. 100	C 3434
HB. 32	C 3435
HB. 51	C 3436
HF. 38	C 3437
HG. 38	C 3438
HJ. 51	C 3439
HK. 51	C 3440

AMERICAN RANGE 'C' CORES



Due to the large number of cores in this range, it is not practicable to publish dimensions in the normal manner.

To assist the Designer in selection, we list below preferred window dimensions along with maximum strip width appropriate to a given window. More detailed information will be given on application.

DIMENSIONS		DIMENSIONS	
Window Dimensions (Ins) Tolerance - 1/64"	Strip Width Maximum Ins.	Window Dimension (Ins) Tolerance - 1/64"	Strip Width Maximum Ins.
1/2 x 1/4	1/2	1 x 1/2	1 1/2
5/8 x 1/4		1 1/8 x 1/2	
7/8 x 1/4		1 5/16 x 1/2	
1 1/16 x 5/16		1 3/8 x 1/2	
7/8 x 5/16		1 1/2 x 1/2	
1 x 5/16		1 9/16 x 1/2	
1 1/16 x 5/16	1 11/16 x 1/2	2	
2 1/4 x 5/16	1 1/4 x 5/8		
1 x 3/8	1 5/16 x 5/8		
1 1/8 x 3/8	1 1/2 x 5/8		
1 3/16 x 3/8	1 9/16 x 5/8		
1 1/4 x 3/8	1 11/16 x 5/8		
1 7/16 x 3/8	1 3/4 x 5/8		
1 3/8 x 7/16	1 15/16 x 5/8		
1 3/8 x 7/16	1 3/4 x 5/8		
1 9/16 x 7/16	1 15/16 x 5/8		
1 11/16 x 7/16	2 7/16 x 5/8		
	1 1/4		2 1/2 x 5/8

STANDARD ELECTRICAL GUARANTEES

0.3, 0.1mm 'C' CORES

BS Spec 5347	Wiltan Spec. No.	Material Thickness mm	Frequency Hz.	Guarantee Induction Tesla	Total Iron Loss Not Greater Than Watts/Kg	Total R.M.S. Mag. VA/Kg Not Greater Than	Remarks
T	OS 210	0.3	50	1.7	2.2	$13.5 + \frac{135}{L_m}$	Supplied to commercial tolerances and only when available
Y	OS-110	0.3	50	1.7	2.0	$9.9 + \frac{84}{L_m}$	
R	OS-111	0.3	50	1.7	1.8	$5.95 + \frac{42}{L_m}$	
-	OS-15	0.1	400	1.5	22.0	$\sqrt{(28.6 + \frac{1019}{L_m})^2 + 22^2}$	
-	OS-10	0.1	400	1.0	9.9 for Lm less than 10 cms 8.8 for LM equal or more than 10 cms.	$\sqrt{(13.2 + \frac{89.5}{L_m})^2 + 8.8^2}$	

'C' CORES IN 0.05mm MATERIAL: SPECIFICATION OS – 112

To give customers a **guidance** as to the performance levels of cores manufactured to this specification, we detail below test conditions for this particular range of cores.

All cores tested at a Bmax of 0.5 Tesla and a frequency of 2000Hz.

For cores with a magnetic path length equal to or greater than 10cms: -

Total iron losses not greater than 19.8 Watts/Kg.

Total R.M.S. magnetising VA/Kg. = $\sqrt{(28.6 + \frac{89.5}{L_m})^2 + 19.8^2}$

For cores with a magnetic path length less than 10cms: -

Total iron losses not greater than 24.8 Watts/Kg.

Total R.M.S. magnetising VA/Kg. = $\sqrt{(28.6 + \frac{89.5}{L_m})^2 + 24.8^2}$

NOTE: In all the above formulae, Lm is the mean length of magnetic path of core in cms.



NOTES