CKT-S-TF1830 Kit System

The CKT-S-TF1830 kit system is a high performance passive sub-woofer. This system comprises the 4 ohm TF1830 18”(457mm) bass driver in a 174L ported enclosure. The TF1830 features a 3” voice coil, vented magnet system, Kevlar loaded cone, good excursion capability and 500W(AES) power handling. The result is a sub-woofer with 30Hz bass extension (-10dB), 131dB peak maximum output and 100dB sensitivity (2.83V) when floor-mounted and used with an 80Hz low pass filter. This sub-woofer is an ideal match for typical 10”, 12” and 15” based two-way satellites.

Components	
System	Bass Driver
CKT-S-TF1830	TF1830

CELESTION

ENGINEERING SAMPLE SPECIFICATION

REF: S8151

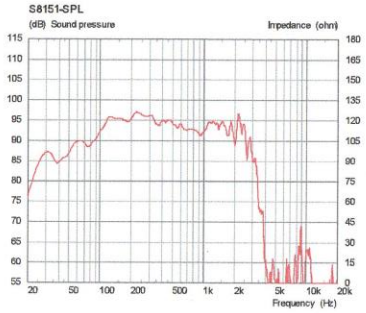
DESCRIPTION:18"x3" CE, pressed, ferrite, 4ohm

Specification	
Nominal diameter (in)	18
Nominal impedance (Ω)	4
Magnet material	Ferrite
Magnet weight (oz)	65
Xmax (mm)	4.5
Gap height (mm)	8
V/C winding length (mm)	17
V/C wire type	Round
V/C wire profile	Cu
V/C diameter (in)	3
Chassis type	Pressed
Power rating (W)*	500W

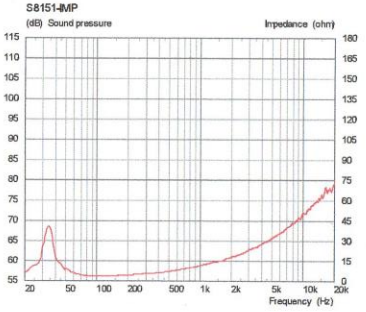
Low Frequency Parameters	
D (cm)	38
fs (Hz)	35.2
Re (Ω)	2.77
Rms (kg/s)	4.499
Qms	8.813
Qes	0.397
Qts	0.38
Vas (l)	207.39
Mms (g)	179.15
Mmd (g)	157.54
Cms (mm/N)	0.114
Bl (Tm)	16.64
SPL (dB 1W @ 1m)	97.22
Le (mH)	1.275

Mounting Information	
Overall diameter (mm)	457
Bolt circle diameter/PCD (mm)	445
Hole diameter (mm)	8.5
Baffle cutout diameter (mm)	416
Depth (mm)	210
Flange and gasket thickness (mm)	15
Net weight (kg)	7.3

Additional Features



1W @ 1m, Hemi-anechoic chamber measurement



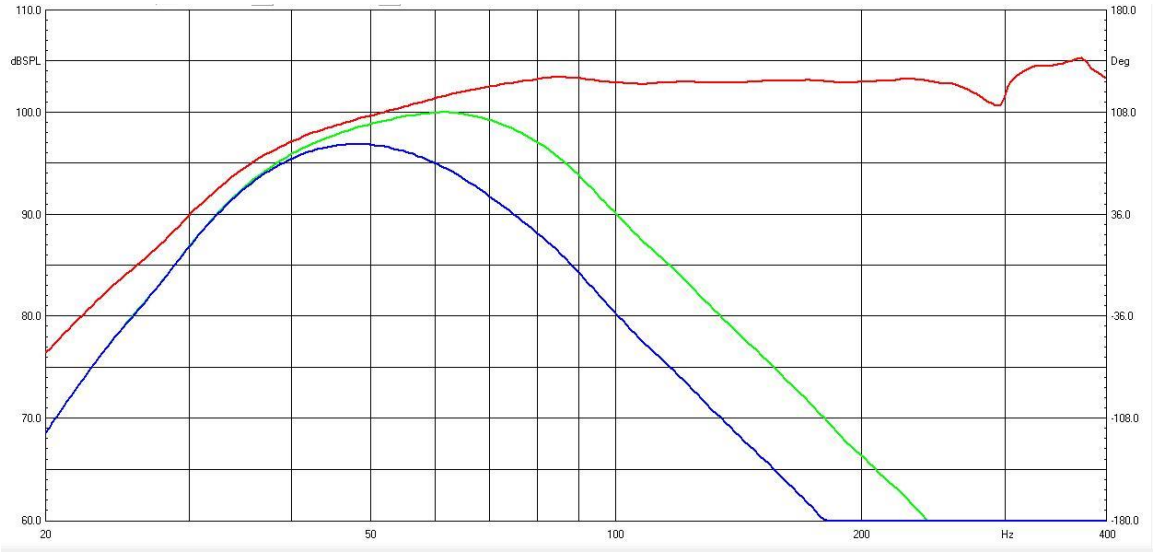
Celestion International Ltd, Ipswich, England.
www.celestion.com

*The stated figure should be considered a guide. The final rating will depend on application and further testing.

WL Li Apr/01/2017

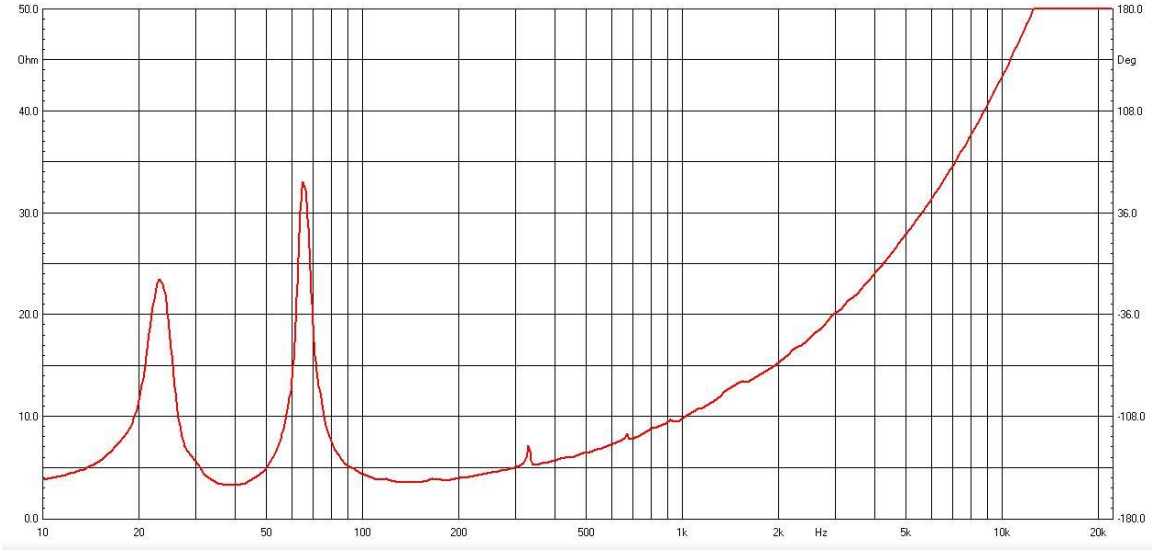
CELESTION CKT-S-TF1830

Measured Data



Frequency Response

Red: Measured near-field, corrected to indicate the 2m far-field, floor mounted response (level normalized to 2.83V/1m).
Green: With 80Hz (-6dB) 4th order low pass filter and 30Hz (-3dB) 4th order high pass filter.
Blue: With 60Hz low pass and 30Hz high pass filters.



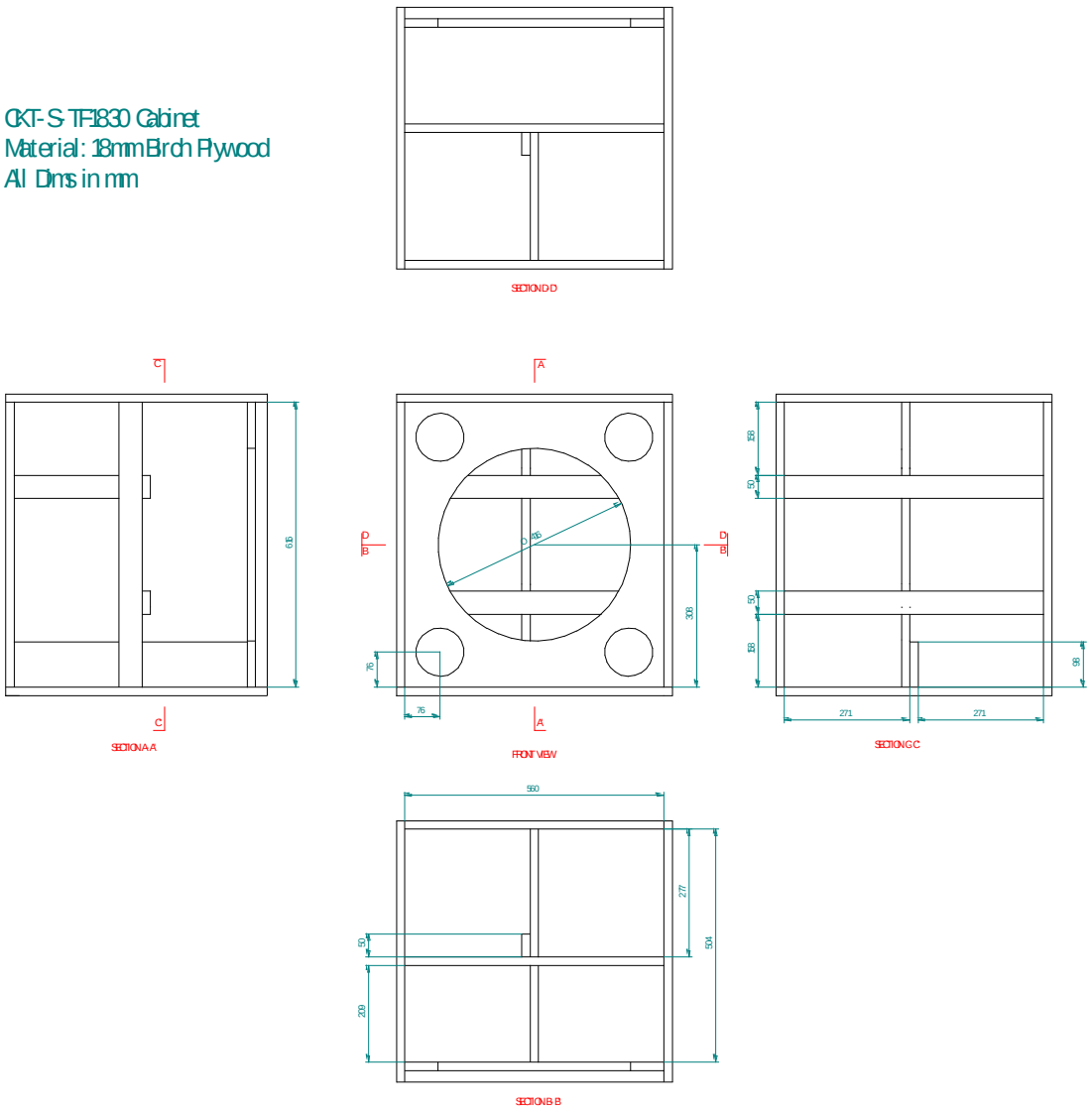
Input Impedance

Specifications:

Format: Passive Sub-woofer
Driver: TF1830
Sensitivity: 100dB (2.83V/1m/floor-mounted/including 80Hz LPF (-6dB))
Input Impedance: 4 ohms (nominal), 2.9 ohms (minimum)
System Rated Power: 650W (EIA), 2600W (peak)
LF Extension: 40Hz (-3dB), 30Hz(-10dB), floor mounted with 80Hz LPF (-6dB)
Maximum Output Level (floor-mounted/with LPF): 125dB (Continuous), 131dB (peak)
LF Unit Power Rating: 500W (AES)
Recommended High Pass Filter: -3dB at 30-35Hz (4^{th} order)
Internal Volume: 174L
Port Tuning Frequency: 38Hz
Port Dimensions: 4 x (Diameter 100mm x Length 275mm)
Port Options: smaller port: 4 x (90Dx210L) / larger port: 4 x (110Dx348L)
Overall Dimensions: 596 x 652 x 565mm(H x W x D)

Cabinet Design:

CKT-S-TF1830 Cabinet
Material: 18mm Birch Plywood
All Dims in mm



Construction Notes:
All joints should be glued and screwed. The front and back panels can be fitted onto internally mounted battens.
T-Nuts and fixing bolts are recommended as a means of fixing the units.
Ensure that there are no air leaks in the cabinet apart from the ports – foam gasket strip should be used in the mounting of drivers, stand attachment (top-hat) and terminal panel.
Internal cables should be carefully positioned to avoid any rattling.
Internal acoustic damping is not essential for a sub-woofer but, if used, it should be positioned clear of the ports and driver cone.
It is important that the cabinet is solidly built and free of obvious panel resonances which may colour the sound. For this design 18mm MDF can be used instead of 18mm Birch plywood but we would recommend adding extra bracing.
A cable conductor cross-sectional area of 2.5 square mm is recommended.

The positive connection on the input panel should be connected to the positive terminal of the driver.

Operation with satellite speakers

Successful integration of a sub-woofer with a satellite normally requires a little bit of adjustment and tweaking, however, the following procedure is a good starting point:

(1) Set the –3dB point of the High Pass Filter to the -3dB point of the satellite's low frequency roll-off.
(2) Set the –6dB point of the Low Pass Filter to the same frequency.
(3) Adjust the sub-woofer level for the best low-mid balance.
(4) If it sounds like there's a 'notch' at the crossover frequency then reverse the polarity of the sub-woofer or satellite to determine the setting which gives the best integration.
(5) To protect the sub-woofer and maximize its output capability add a suitable high pass filter to the sub-woofer channel