



	B-1	X-33
		
Manufacturer	Breitling	Omega
Named after	B-1 bomber aircraft	X-33 "next generation" launch vehicle, NASA project.
Primary purpose	Navigational aid – the most highly functional watch developed by Breitling.	Designed for space flight crew, non-EVA, for space mission crews, used actively in space by NASA.
Watch movement	Breitling 78 (SuperQuartz)	Cal 1666 precision quartz
Watch case	Highly polished Steel or Gold	Brushed Titanium
Size	Diameter. 42.5mm, Thickness 16.50mm, Weight, 95.7g	Diameter. 42.25mm Thickness 14mm? (est.) Weight, <30g? (est.)
Expected battery life	24-36 months	24-36 months
Expected accuracy	+ -15sec / year	+ -15sec / month
Real life accuracy	+4sec / year	Unknown (<0.5sec / day)
Method of Operation	Spinning the crown selects mode of operation – can be selected forward / backward. Two multi-function pushers.	Depressing the crown selects mode of operation –only cycling one way. Four multi-function pushers.
Adjustment method	Pressing pushers activates digital numbers affected. Spinning crown forward or backward changes values.	Pressing pusher activates digital numbers affected. Pressing other pushers' changes values.
Digital Display	Two digital LCD displays – can be switched off.	Two curved LCD displays – can be switched off.
Luminosity	Arabic 12,9,6,3 stick chapters, arrow hands, dot on bezel.	Stick chapters, double dot each side of 12, broad-arrow hands

Backlight	Illuminates digital readouts – activated by depressing the crown.	Complete backlit display – activated by depressing specific pusher (P3)
Analogue display	Hr, Min, Sec hands	Hr, Min, Sec hands
Digital Time display	24hr (only) Hr, Min, Sec	24 or am/pm Hr, Min, Sec
Calendar display	Day (can be switched off) digital dd.mm.yy perpetual calendar (can be mm.dd.yy), different languages can be set.	Day, digital dd.mm.yy, perpetual calendar to 2100 (can be mm.dd.yy)
Daily alarm	Daily Alarm for Local Time. Set by hh.mm – rings again if not switched off in 30sec	Daily Alarm for Local Time. Set by hh.mm – rings again if not switched off in 30sec
Mission Time		An independent time to define the start time of a long running experiment (up to 999d). Useful application is to synchronise this with current time and it can then use this as another independent time zone.
Mission Alarm		An alarm set to go off– defined by ddd/hh.mm.ss where ddd is the day number of the mission time. Useful application for setting an alarm some date ahead in the future
Universal Time (Coordinates)	UTC set independently of the Local Time – can be up to 24hrs difference from Local Time - set with 15min. incremental differences. Seconds are synchronised with Local Time (can be am/pm or 24hr)	UTC set totally independently of Local Time. Indicates the number of days since the beginning of the year and ddd/ hh.mm.ss. Seconds are synchronised with Local Time (24hr only)
Universal Time Alarm		Alarm for a defined UTC. Set by ddd/hh.mm – rings again if not switched off, in 60sec
Timer	Count down timer max 99d 23m59s. Alarm repeats itself after 30sec if not acknowledged.	Count down timer max -99h59m59s. Counter counts up to +99h.59m59s after alarm point reached (like space shuttle launch).

	Auto-reload of last countdown time.	Alarm repeats itself after 30sec if not acknowledged. Auto-reload of last countdown time.
Chronometer	Digital chronometer with synchronised analogue second hand with the chronometer measurement, resolution to 1/100 th sec. Stop/Start/Split Time function. Maximum duration 99d 24h 59m59.99s	Independent digital chronometer resolution to 1/100 th sec. Stop/Start/Split Time function. Maximum duration 99h 59m59.99s
Second time zone	Digital Second Time Zone set independently of the Local Time – can be up to 24hrs difference from Local Time - set with 15min. incremental differences. Seconds are synchronised with Local Time (can be am/pm or 24hr)	
Second time zone Alarm	Daily Alarm set, against a time (hh.mm) in the second time zone	
Battery EOF indicator	Jumping second hand	Jumping second hand
Un-documented features	'BAT' mode allows watch to be set into 'hibernation' mode, which saves battery consumption when off wrist.	Most functions (except MT) can be accessed by holding down the crown rather than pulling out the crown (as documented).
Bezel	Internal "Navitimer" style rotating slide-rule with gearing, and descending reverse minute intervals on outer edge of bezel	Ascending minute intervals bi-directional rotation 2 clicks per minute.
Time signals	Hourly chimes can be set – audible confirmation of settings can be set on/off.	
Aesthetics	Tool watch, 'massive steel', may be too bulky for some – (tends to take out chunks in door frames), highly functional – still looks like a 'Breitling' watch, quite 'shiny'	Tool watch, easy to wear, highly functional – looks like a 'digital instrument'. Has a 'stealth' look about it.
Water resistance	Rated at 50m – ok for surface swimming. Not a diving watch. Designed for Air not	Rated at 30m – Omega website officially says its 30m rated watches are ok for

	Sea.	surface swimming. Not a diving watch – designed for Space Missions not Underwater Missions
COSC certification	One of a few digital watches that is COSC certified.	Has passed rigorous testing for space missions
Availability	To be superseded by 'Air Wolf', announced at 2006 Basel Fair.	Not in 2005-2006 Omega catalogue.



Size is actually quite similar – but the B-1 being steel weighs much, much more. Both have anti-glare finish on both sides of the sapphire glass, X-33 is domed (for outward pressure loss), B-1 has a flat crystal face.



Notice the crown differences – the X-33 is pushed, the B-1 is spun, just noticeable



Sound chamber on X-33 allows alarm to be heard on wrist – B-1 sound can be muffled on wrist. Both loud off wrist. So wear the B-1 loose if using the alarm



Shiny finish on the stainless steel B-1. . .



Matt, brushed finished Titanium on X-33



Both excellent finished clasps – B-1 has safety clasp, X-33 double 'speedy' clasp



Document Written By: MartynJC (UK) (2006)
All Pictures Taken By: MartynJC (UK) (2006)

Contact me at: [watches3\(at\)designmjc.com](mailto:watches3(at)designmjc.com) (substituting (at) by '@') for permission, before copying or distributing any of this document or pictures.