Garmin fenix 7X Series Specifications

	fenix 7X Solar	fenix 7X Sapphire Solar
General		
Lens Material	Power Glass™	Power Sapphire™
Bezel Material	stainless steel	titanium
Case material	fiber-reinforced polymer with metal rear cover	fiber-reinforced polymer with metal rear cover
QuickFit™ watch band compatible	included (26 mm)	included (26 mm)
Strap material	silicone	silicone
Physical size	51 x 51 x 14.9 mm Fits wrists with the following circumference: Silicone band: 127-210 mm Leather Band: 135-213 mm Fabric Band: 135-213 mm Metal Band: 135-225 mm	51 x 51 x 14.9 mm Fits wrists with the following circumference: Silicone band: 127-210 mm Leather Band: 135-213 mm Fabric Band: 135-213 mm Metal Band: 135-225 mm
Touchscreen	✓	✓
Color display	✓	✓
LED flashlight	✓	✓
Display Size	1.4" (35.56 mm) diameter	1.4" (35.56 mm) diameter
Display Resolution	280 x 280 pixels	280 x 280 pixels
Display Type	sunlight-visible, transflective memory-in-pixel (MIP)	sunlight-visible, transflective memory-in-pixel (MIP)
Weight	96 g (case only: 68 g)	89 g (case only: 61 g)
Battery life	Smartwatch: Up to 28 days/37 days with solar* Battery Saver Watch Mode: Up to 90 days/1+ year with solar* GPS Only: Up to 89 hours/122 hours with solar** All Satellite Systems: Up to 63 hours/77 hours with solar* All Satellite Systems and Music: Up to 16 hours Max Battery GPS: Up to 213 hours/578 hours with solar** Expedition GPS: Up to 62 days/ 139 days with solar* *Solar charging, assuming all-day wear with 3 hours per day outside in 50,000 lux conditions **Solar charging, assuming use in 50,000 lux conditions	Smartwatch: Up to 28 days/37 days with solar* Battery Saver Watch Mode: Up to 90 days/1+ year with solar* GPS Only: Up to 89 hours/122 hours with solar** All Satellite Systems: Up to 63 hours/77 hours with solar* All Satellite Systems and Multi-band: Up to 36 hours/41 hours with solar** All Satellite Systems and Music: Up to 16 hours Max Battery GPS: Up to 213 hours/578 hours with solar** Expedition GPS: Up to 62 days/ 139 days with solar* *Solar charging, assuming all-day wear with 3 hours per day outside in 50,000 lux conditions **Solar charging, assuming use in 50,000 lux conditions
[Water rating](#)	10 ATM	10 ATM
Memory/History	16 GB	32 GB
Clock Features		
Time/date	✓	✓
GPS Time Sync	✓	✓
Automatic daylight saving time	✓	✓
Alarm clock	✓	✓
Timer	✓	✓
Stopwatch	✓	✓
Sunrise/sunset times	✓	✓
Health Monitoring		
Wrist-based Heart Rate (constant, every second)	✓	✓
Daily Resting Heart Rate	✓	✓
Abnormal Heart Rate Alerts	yes (high and low)	yes (high and low)
Respiration rate (24x7)	✓	✓
Pulse Ox Blood Oxygen Saturation	yes (spot-check, and optional all-day acclimation and in sleep)	yes (spot-check, and optional all-day acclimation and in sleep)
Fitness Age	yes (in app)	yes (in app)
Body Battery™ Energy Monitor	✓	✓

Feature		
All-day Stress	✓	✓
Relaxation reminders	✓	✓
Relaxation breathing timer	✓	✓
Sleep	yes (advanced)	yes (advanced)
Sleep score and insights	✓	✓
Hydration	yes (in Garmin Connect™ and optional Connect IQ™ widget)	yes (in Garmin Connect™ and optional Connect IQ™ widget)
Women's Health	yes (in Garmin Connect™ and optional Connect IQ™ widget)	yes (in Garmin Connect™ and optional Connect IQ™ widget)
Health snapshot	✓	✓

Sensors

Feature		
GPS	✓	✓
GLONASS	✓	✓
Galileo	✓	✓
Multi-frequency Positioning	✓	✓
Garmin Elevate™ wrist heart rate monitor	✓	✓
Barometric altimeter	✓	✓
Compass	✓	✓
Gyroscope	✓	✓
Accelerometer	✓	✓
Thermometer	✓	✓
Pulse Ox Blood Oxygen Saturation Monitor	✓	✓

Daily Smart Features

Feature		
Connectivity	Bluetooth®, ANT+®, Wi-Fi®	Bluetooth®, ANT+®, Wi-Fi®
Connect IQ™ (downloadable watch faces, data fields, widgets and apps)	✓	✓
On-device Connect IQ™ Store	✓	✓
Smart Notifications	✓	✓
Text response/reject phone call with text (Android™ only)	✓	✓
Calendar	✓	✓
Weather	✓	✓
Realtime settings sync with Garmin Connect™ mobile	✓	✓
Battery saver (customizable low power watch)	✓	✓
Controls smartphone music	✓	✓
Plays and controls watch music	✓	✓
Music storage	up to 2,000 songs	up to 2,000 songs
Find My Phone	✓	✓
Find My Watch	✓	✓
VIRB® Remote	✓	✓
Smartphone compatibility	iPhone®, Android™	iPhone®, Android™
Pairs with Garmin Golf app	✓	✓
Pairs with Garmin Connect™ Mobile	✓	✓
Garmin Pay™	✓	✓

Safety and Tracking Features

Feature		
LiveTrack	✓	✓
Group LiveTrack	✓	✓
Live Event Sharing	✓	✓
Incident Detection during select activities	✓	✓
Assistance	✓	✓

Tactical Features

Feature		
Dual grid coordinates	✓	✓

Activity Tracking Features

Feature		
Step counter	✓	✓

Move bar (displays on device after a period of inactivity; walk for a couple of minutes to reset it)	✓	✓
Auto goal (learns your activity level and assigns a daily step goal)	✓	✓
Calories burned	✓	✓
Floors climbed	✓	✓
Distance traveled	✓	✓
Intensity minutes	✓	✓
TrueUp™	✓	✓
Move IQ™	✓	✓
Garmin Connect™ Challenges app	yes (optional Connect IQ app)	yes (optional Connect IQ app)

Gym & Fitness Equipment

Available gym activity profiles	Strength, HIIT, Cardio and Elliptical Training, Stair Stepping, Floor Climbing, Indoor Rowing, Pilates and Yoga	Strength, HIIT, Cardio and Elliptical Training, Stair Stepping, Floor Climbing, Indoor Rowing, Pilates and Yoga
Cardio workouts	✓	✓
Strength workouts	✓	✓
HIIT workouts	✓	✓
Yoga workouts	✓	✓
Pilates workouts	✓	✓
On-screen workout animations	✓	✓
Automatic rep counting	✓	✓

Training, Planning and Analysis Features

HR zones	✓	✓
HR alerts	✓	✓
HR calories	✓	✓
% HR max	✓	✓
% HRR	✓	✓
Recovery time	✓	✓
Auto max HR	✓	✓
HRV stress test (measures your heart rate variability while standing still, for 3 minutes, to provide you with an estimated stress level; the scale of this is 1 to 100; low scores indicate lower stress levels)	yes (with compatible accessory)	yes (with compatible accessory)
HR Broadcast (broadcasts HR data over ANT+™ to paired devices)	✓	✓
Respiration rate (during exercise)	yes (with compatible accessory)	yes (with compatible accessory)
GPS speed and distance	✓	✓
Customizable data pages	✓	✓
Customizable activity profiles	✓	✓
Auto Pause®	✓	✓
Interval training	✓	✓
Advanced workouts	✓	✓
Downloadable training plans	✓	✓
Power Modes - customizable in-activity battery settings	✓	✓
Auto Lap®	✓	✓
Manual lap	✓	✓
Configurable lap alerts	✓	✓
Heat and altitude acclimation	✓	✓
VO2 Max (Run)	✓	✓
VO2 Max (Trail Run)	✓	✓
Realtime stamina	✓	✓
Training Status (lets you see if you're training effectively by tracking your training history and fitness level trend.)	✓	✓
Training Load (your total training load for the last 7 days calculated from estimated EPOC)	✓	✓
Training load focus	✓	✓
Training Effect	✓	✓

Feature		
Training Effect (anaerobic)	✓	✓
Primary benefit (Training Effect labels)	✓	✓
Improved recovery time	✓	✓
Daily suggested workouts	✓	✓
Custom alerts	✓	✓
Audio prompts	✓	✓
Finish time	✓	✓
Virtual Partner	✓	✓
Race an Activity	✓	✓
Auto multisport activities	✓	✓
Manual multisport activities	✓	✓
Course guidance	✓	✓
Garmin Live Segments	✓	✓
Strava Live Segments	✓	✓
Round-trip course creator (running/cycling)	✓	✓
Trendline™ Popularity Routing	✓	✓
Touch and/or button lock	✓	✓
Hot keys	✓	✓
Auto scroll	✓	✓
Activity history on watch	✓	✓
Physio TrueUp	✓	✓

Running Features

Feature		
Available run profiles	Running, Track Running, Treadmill Running, Indoor Track Running, Trail Running, Virtual Running, Ultra Running	Running, Track Running, Treadmill Running, Indoor Track Running, Trail Running, Virtual Running, Ultra Running
GPS-based distance, time and pace	✓	✓
Running dynamics	yes (with compatible accessory)	yes (with compatible accessory)
Vertical oscillation and ratio (the degree of 'bounce' in your running motion and the cost-benefit ratio with stride length)	yes (with compatible accessory)	yes (with compatible accessory)
Ground contact time and balance (shows how much time, in the running motion, your foot is on the ground rather than in flight and lets you check your running symmetry)	yes (with compatible accessory)	yes (with compatible accessory)
Stride length (real time)	yes (with compatible accessory)	yes (with compatible accessory)
Cadence (provides real-time number of steps per minute)	✓	✓
Performance condition (after running 6–20 minutes, compares your real-time condition to your average fitness level)	✓	✓
Lactate threshold (through analysis of your pace and heart rate, estimates the point where your muscles start to rapidly fatigue)	yes (with compatible accessory)	yes (with compatible accessory)
PacePro™ Pacing Strategies	✓	✓
Run workouts	✓	✓
Race predictor	✓	✓
Foot pod capable	✓	✓

Golfing Features

Feature		
Preloaded with 42,000 courses worldwide	✓	✓
Yardage to F/M/B (distance to front, middle and back of green)	✓	✓
Yardage to layups/doglegs	✓	✓
Measures shot distance (calculates exact yardage for shots from anywhere on course)	Automatic	Automatic
Digital scorecard	✓	✓
Custom targets	✓	✓
Stat tracking (strokes, putts per round, greens and fairways hit)	✓	✓
Garmin AutoShot™	✓	✓
Full vector map	✓	✓

Auto CourseView updates	✓	✓
Green View with manual pin position	✓	✓
Hazards and course targets	✓	✓
PinPointer	✓	✓
PlaysLike distance	✓	✓
Touch-targeting (touch target on display to see the distance to any point)	✓	✓
Handicap scoring	✓	✓
TruSwing™ compatible	✓	✓
Round timer/odometer	✓	✓
Automatic club tracking compatible (requires accessory)	✓	✓
Tournament legal	✓	✓

Outdoor Recreation

Available outdoor recreation profiles	Hiking, Indoor Climbing, Bouldering, Climbing, Mountain Biking, Skiing, Snowboarding, XC Skiing, Stand Up Paddleboarding, Rowing, Kayaking, Surfing, Hunting, Jumpmaster, Tactical, Kiteboard, Windsurf, Snowshoe, Tennis, Pickleball	Hiking, Indoor Climbing, Bouldering, Climbing, Mountain Biking, Skiing, Snowboarding, XC Skiing, Stand Up Paddleboarding, Rowing, Kayaking, Surfing, Hunting, Jumpmaster, Tactical, Kiteboard, Windsurf, Snowshoe, Tennis, Pickleball
Point-to-point navigation	✓	✓
Bread crumb trail in real time	✓	✓
Back to start	✓	✓
TracBack®	✓	✓
UltraTrac mode	✓	✓
Around Me mode	✓	✓
Up Ahead	✓	✓
Elevation profile	✓	✓
Distance to destination	✓	✓
Barometric trend indicator with Storm Alert	✓	✓
ClimbPro™ Ascent Planner	✓	✓
Trail run auto climb	✓	✓
Vertical speed	✓	✓
Total ascent/descent	✓	✓
Future elevation plot	✓	✓
Preloaded topographical maps	x	✓
Preloaded road and trail maps	x	✓
Preloaded ski resort maps	✓	✓
Downloadable cartography support	✓	✓
Compatible with BaseCamp™	✓	✓
GPS coordinates	✓	✓
Sight 'N Go	✓	✓
Area calculation	yes (via Connect IQ™)	yes (via Connect IQ™)
Hunt/fish calendar	yes (via Connect IQ™)	yes (via Connect IQ™)
Projected waypoint	✓	✓
Sun and moon information	yes (via Connect IQ™)	yes (via Connect IQ™)
XERO™ Locations	✓	✓
Expedition GPS Activity	✓	✓
Tides	yes (via Connect IQ™)	yes (via Connect IQ™)

Cycling Features

Available cycling profiles	Biking, Indoor Biking, Mountain Biking, Triathlon	Biking, Indoor Biking, Mountain Biking, Triathlon
Alerts (triggers alarm when you reach goals including time, distance, heart rate or calories)	✓	✓
Courses	✓	✓
Cycle Map (routable cycling-specific street map)	✓	✓
MTB Grit & Flow	✓	✓
Bike lap and lap maximum power (with power sensor)	✓	✓
Race an activity	✓	✓

FTP (Functional Threshold Power)	yes (with compatible accessory)	yes (with compatible accessory)
Compatible with Vector™ (power meter)	✓	✓
Power meter compatible	✓	✓
Advanced Vector support	✓	✓
Compatible with Varia Vision™ (head-mounted display)	✓	✓
Compatible with Varia™ radar (rear-facing radar)	✓	✓
Compatible with Varia™ lights	✓	✓
Speed and cadence sensor support (w/sensor)	✓	✓

Swimming Features

Available swim profiles	Pool Swimming, Open Water Swimming, Swimming/Running	Pool Swimming, Open Water Swimming, Swimming/Running
Open-water swim metrics (distance, pace, stroke count/rate, stroke distance, swim efficiency (SWOLF), calories)	✓	✓
Pool swim metrics (lengths, distance, pace, stroke count, swim efficiency (SWOLF), calories)	✓	✓
Stroke type detection (freestyle, backstroke, breaststroke, butterfly) (pool swim only)	✓	✓
Drill logging (pool swim only)	✓	✓
Basic rest timer (up from 0) (pool swim only)	✓	✓
"Repeat on" rest timer (pool swim only)	✓	✓
Auto rest (pool swim only)	✓	✓
Time and distance alerts	✓	✓
Pacing alerts (pool swim only)	✓	✓
Countdown start (pool swim only)	✓	✓
Pool swim workouts	✓	✓
Critical swim speed	✓	✓
Underwater wrist-based heart rate	✓	✓
Heart rate from external HRM (real-time during rests, interval and session stats during rests, and automatic heart rate download post-swim)	yes (with HRM-Tri™, HRM-Swim™ and HRM-Pro™)	yes (with HRM-Tri™, HRM-Swim™ and HRM-Pro™)

Kid Activity Tracking Features

Toe-to-Toe™ Challenges app	yes (optional Connect IQ Toe-to-Toe™ Challenges app)	yes (optional Connect IQ Toe-to-Toe™ Challenges app)

Connectivity

Smart trainer control	✓	✓