**METAL FINISHING CALCULATOR**

Complete Changelog & Release Notes

**Version 3.0.0**

January 2026

**Psyrcuit LLC**

Tucson, Arizona

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**VERSION 3.0.0 - MULTI-ESTIMATOR RELEASE**

**Release Date:** January 30, 2026 **Status:** Production Release

**File Integrity**

Verify the downloaded file matches the official release:

|  |  |
| --- | --- |
| **Filename:** | Psyrcuit MFC.exe |
| **SHA-256:** | 8364D3ECBBB98F7175A81E2552FDB254241A5D1082657554573D6FDA6EC2D724 |
| **File Size:** | ~85 MB |

*To verify on Windows PowerShell:*

Get-FileHash "Psyrcuit MFC.exe" -Algorithm SHA256

**New Features in v3.0.0**

**1. Multi-Estimator Support (Computer-Specific Settings)**

* Settings tied to MAC address: Each workstation maintains its own configuration
* Automatic hardware detection: Settings isolated per computer without manual configuration
* Cross-estimator quote compatibility: View quotes from other estimators with their original settings
* Estimator banner: Visual indicator when viewing quotes from another workstation
* Temporary settings loading: Option to temporarily load another estimator's settings

**2. Shared Hub System**

* Network folder collaboration: Centralized storage for team environments
* Automatic folder structure creation: Creates Quotes, Settings, Templates, and Backups directories
* Settings synchronization: Share configurations across team workstations
* Quote repository: Centralized quote storage with organization by customer/quote number
* PDF archive: Automatic organization of generated PDF quotes
* Backup migration: Copies existing local backups to shared hub during setup

**3. Quote Browser**

* Visual quote management: Browse all saved quotes with preview cards
* Customer/Quote grouping: Organized hierarchy by customer → quote number → revisions
* Revision history tracking: View all versions of a quote with timestamps
* Quick search and filter: Find quotes by customer name, quote number, or date
* File metadata display: Shows estimator, date, version, and file size
* One-click loading: Load any quote directly from the browser

**4. Theme System with 30+ Presets**

* Comprehensive preset library including Dark, Light, Neon, and Professional themes
* WCAG-compliant contrast system: Automatic text color calculation based on luminance
* Theme-aware buttons: Button text automatically adjusts for readability
* Live preview: See theme changes in real-time before applying
* Custom theme support: Create and save personal color schemes

**5. Interactive Tutorial Mode**

* 28-step guided wizard: Complete walkthrough of all application features
* Isolated sandbox environment: Practice with demo data without affecting real settings
* Visual highlighting system: Color-coded element highlighting during tutorial
* Demo quote building: Build a complete sample quote during tutorial
* Skip/resume capability: Exit and return to tutorial anytime

**6. Selective Import/Export**

* Granular export control: Choose exactly which settings to export
* Category-based selection: Processes, Fees, Theme, PDF config, Field visibility
* Conflict detection: Identifies items that exist in both current and imported settings
* Side-by-side comparison: Visual diff of current vs. imported values
* Backwards compatibility: Works with legacy v2.x settings files

**7. Getting Started Wizard**

* First-run experience: Guided setup for new installations
* Step-by-step configuration: Estimator name, theme, branding, processes
* Directory configuration: Set up quotes, PDFs, and settings locations
* Import existing settings: Option to migrate from previous installation

**8. Settings Migration System**

* Automatic legacy detection: Finds settings from v2.x installations
* Multiple source support: localStorage, AppData folders, JSON files, LevelDB
* Non-destructive migration: Original settings preserved as backup
* Version tracking: Migration metadata stored with settings

**9. Multi-Monitor Window Management**

* Display-aware positioning: Window snaps to fill current monitor's work area
* Drag-to-move support: Drag window to another monitor and it snaps to that display
* Display change handling: Automatically adjusts when monitors are added/removed
* Taskbar avoidance: Respects system taskbar positioning

**10. Enhanced PDF Generation**

* Signature support: Configurable signature name and title
* Part detail control: Toggle visibility of individual part fields
* Process notes: Customizable summary notes per process
* Fee notes: Customizable display notes for fees
* Template variables: Dynamic content insertion with placeholders

**Improvements in v3.0.0**

**User Interface**

* Unified settings modal with all configuration in one organized interface
* Tab-based settings navigation: Processes, Fees, PDF, Branding, Theme, Fields, System
* Improved form layouts with better spacing and grouping
* Enhanced color picker for more intuitive theme selection
* Responsive modals with better handling of varying content heights
* Full keyboard accessibility throughout application

**Quote Management**

* Auto-save to configured directory
* Revision preservation with previous versions in revisions subfolder
* Intelligent filename generation with customer, quote number, date, time, version
* Unsaved changes protection with confirmation dialog
* Recent quotes tracking in File menu

**Settings System**

* Deep merge with defaults for automatic inheritance
* Automatic backup creation before major changes
* Fee migration system for legacy format conversion
* Process configuration preservation through updates
* Summary note template migration with updated syntax

**Performance**

* Optimized settings loading for faster startup
* Lazy component loading for on-demand UI
* Efficient state management with reduced re-renders
* Debounced window events for smoother transitions

**Bug Fixes in v3.0.0**

✓ Fixed window maximizing beyond screen bounds on secondary monitors

✓ Fixed theme colors not applying to all button states

✓ Fixed PDF generation failing with undefined process names

✓ Fixed settings not persisting after application restart in some configurations

✓ Fixed import dialog not detecting all legacy settings locations

✓ Fixed tutorial highlighting persisting after tutorial completion

✓ Fixed quote browser not refreshing after saving new quote

✓ Fixed estimator banner showing for current user's quotes

✓ Fixed multi-coat wet paint calculations using incorrect multipliers

✓ Fixed material lead time notes not respecting day/week unit preference

✓ Fixed fee summary notes not using configured templates

**11. Add-On Extension System**

* Modular add-on architecture: Extend MFC with optional modules without modifying the core application
* Ed25519 cryptographic signature verification: All add-ons must be signed by Psyrcuit before installation
* Manifest-driven registration: Each add-on declares its ID, version, entry points, and permissions via manifest.json
* Settings UI integration: Add-ons appear in Settings → Add-ons tab with enable/disable toggles and status indicators
* Theme-aware rendering: Add-on UI elements automatically inherit the active MFC theme
* Dual verification: Signature checked at install time and again at every application launch
* Tamper detection: Any file modification after signing causes silent rejection at load time
* Restart-to-activate workflow: New add-ons prompt for application restart with themed confirmation dialog

**12. Add-On API (v1.1)**

* MFC.calculations namespace: calculateEachPrice, calculateMinLot, getHighestLaborRate, getEffectiveRates, evaluateSummaryNotes, getFeesArray
* MFC.format namespace: formatProcessNotes, formatMaterialOrderNotes, processNoteTemplate, buildProcessNoteContext, generateDynamicProcessNote, replaceOptionGroupVariables, labelToCamelCase
* MFC.theme namespace: hexToRgba, getContrastColor, getColors (live CSS variable snapshot)
* Scoped API per add-on: getSelectedPart, getParts, getPartById, getProcesses, getProcessByName, getFees, openSettings
* Read-anything / compute-anything model: Add-ons have full read access to all data; write operations remain gated and minimal

**13. Add-On Admin Tools**

* Addon\_Key\_Generator.js: One-time Ed25519 key pair generation for the signing ecosystem
* Addon\_Signer.js: Signs add-on folders with manifest validation, deterministic file hashing, and self-verification
* License\_Key\_Generator.html: Browser-based admin tool for generating customer license keys
* Get\_Computer\_ID.html: Customer-facing tool for MAC address retrieval during onboarding
* Private key protected via .gitignore; public key embedded in application binary

**Security Notes**

**Vulnerability Scan Results**

npm audit completed January 2026 - **0 vulnerabilities found**

**Third-party component versions:**

|  |  |  |
| --- | --- | --- |
| **Component** | **Version** | **Changed?** |
| Electron | 40.1.0 | Updated from 28.1.0 |
| React | 18.2.0 | No change |
| ReactDOM | 18.2.0 | No change |
| Babel | 7.23.5 | No change |
| Three.js | r128 | No change |
| OpenCascade.js | 0.0.18 | No change |
| jsPDF | 2.5.1 | No change |

**Security Architecture:**

* 100% offline operation - zero network connectivity
* No telemetry or analytics collection
* No cloud services or external API calls
* All data remains on customer's machine
* Hardware-verified licensing (MAC address validation)
* Suitable for ITAR/CUI/CMMC environments

**Add-On Security Properties:**

* Ed25519 (RFC 8032) digital signatures with SHA-256 content hashing
* 256-bit key size, 64-byte signatures; public key embedded in application binary
* Deterministic hashing: Sorted filenames + contents ensures consistent verification across platforms
* Five enforcement points: Install-time check, post-copy integrity check, load-time re-verification, file-addition detection, file-rename detection
* Unsigned or tampered add-ons: Rejected at install with error message; silently skipped at load time
* Add-ons operate in read-only mode by default; no direct filesystem or network access

**VERSION 2.x SERIES - DESKTOP APPLICATION FOUNDATION**

**Version 2.3.0**

**Release Date:** December 2025 **Focus:** License System & File Management

* Hardware-verified license system implementation (MAC address validation)
* License key generator admin tool
* Computer ID retrieval tool for customer onboarding
* Native file dialog integration for save/load operations
* Custom window controls (minimize, close)
* Recent quotes menu with quick access
* Directory configuration for quotes, PDFs, and settings

**Version 2.2.0**

**Release Date:** November 2025 **Focus:** PDF Generation & Printing

* Native printing support via Electron
* PDF export with configurable options
* Quote summary page in PDF output
* Part-by-part pricing breakdown in PDF
* Customizable PDF header/footer
* Export/Import settings to JSON file

**Version 2.1.0**

**Release Date:** October 2025 **Focus:** 3D Viewer & Surface Area

* STEP file viewer integration using Three.js and OpenCascade.js
* Automatic surface area extraction from CAD models
* STL file support for 3D visualization
* Shape calculator tool for manual geometry entry
* Coverage calculator for paint/coating calculations
* Fullscreen 3D viewer mode

**Version 2.0.0**

**Release Date:** September 2025 **Focus:** Electron Desktop Application

* Platform migration from browser-based to Electron desktop application
* 100% offline capability with all dependencies bundled locally
* Offline bundler v7 for CDN dependency packaging
* Windows portable executable generation
* Electron main process with window management
* Context-isolated preload script for security
* Native menu bar with keyboard shortcuts
* GitHub Actions CI/CD workflow

**VERSION 1.0.0 - INITIAL RELEASE**

**Release Date:** August 2025 **Focus:** Core Estimation Functionality

**Quote Management**

* Multi-part quote creation
* Part duplication for efficiency
* Quote save/load to JSON format
* Customer information tracking
* Quote number generation

**Process Selection**

* Anodize (Type II Class 1/2)
* Chem Film / Chromate Conversion
* Passivation (multiple specs)
* Powder Coating
* Wet Paint (primer + topcoat)
* Sandblast / Media Blast
* Masking operations
* Specification-driven configuration
* Material compatibility validation

**Pricing Calculations**

* Square inch / square foot pricing
* Minimum piece pricing
* Minimum lot charges
* Quantity-based calculations
* Process stacking (multiple processes per part)

**Fee System**

* Expedite fee (percentage-based)
* EPA environmental fee
* Artwork fee per color
* Materials markup
* Sandblast media charges
* Delivery/shipping calculation
* Tax calculation

**Surface Area Tools**

* Shape calculator with Rectangle, Circle, Triangle, Cylinder, Cone, Sphere, Ellipse
* Unit conversion (SQ IN ↔ SQ FT)
* Manual entry option

**User Interface**

* Three-column layout (parts, details, tools)
* Real-time price updates
* Collapsible sections
* Process accordion interface
* Basic theming support

**VERSION HISTORY SUMMARY**

|  |  |  |  |
| --- | --- | --- | --- |
| **Version** | **Release Date** | **Codename** | **Major Theme** |
| 3.0.0 | January 2026 | Multi-Estimator | Team collaboration & enterprise features |
| 2.3.0 | December 2025 | Licensed | License system & file management |
| 2.2.0 | November 2025 | Printable | PDF generation & printing |
| 2.1.0 | October 2025 | Visual | 3D viewer & surface area |
| 2.0.0 | September 2025 | Desktop | Electron conversion |
| 1.0.0 | August 2025 | Genesis | Initial release |

**TECHNICAL SPECIFICATIONS**

**System Requirements**

**Operating System:**

* Windows 10 (64-bit) or later
* Windows 11 supported

**Hardware Requirements:**

* Processor: 2 GHz dual-core or better
* Memory: 4 GB RAM minimum (8 GB recommended)
* Storage: 200 MB available disk space
* Display: 1280x720 minimum resolution

**Data Management**

**File Formats:**

* Quote files: JSON (.json)
* Settings files: JSON (.json)
* PDF exports: PDF 1.7

**Storage Locations:**

* Default (Local): %APPDATA%/Metal Finishing Calculator/
* Shared Hub: User-configured network path
* Quote backups: [Settings Directory]/backup/

**Security Compliance**

* ITAR-compliant architecture (zero external connectivity)
* CUI-ready data handling
* CMMC environment compatible
* No cloud dependencies
* Local-only data processing

**UPGRADE INSTRUCTIONS**

**Upgrading from v2.x to v3.0.0**

**1.** Download the new portable executable

**2.** Verify the SHA-256 checksum matches: 8364D3ECBBB98F7175A81E2552FDB254241A5D1082657554573D6FDA6EC2D724

**3.** Replace the old executable with the new one

**4.** Launch the application - you'll see the Getting Started Wizard

**5.** Migrate Settings: The wizard will detect your existing settings. Choose to import processes, fees, and preferences, or start fresh

**6.** Configure Shared Hub (optional): If working in a team, select a network folder accessible to all workstations

**Note:** Your existing license key will continue to work. No re-activation required unless your computer's hardware has changed.

**Upgrading from v1.x to v3.0.0**

* 1. Export your settings from the old version (if available)
* 2. Install v3.0.0 using the instructions above
* 3. Import settings during the Getting Started Wizard or via File → Import Settings

**SUPPORT INFORMATION**

|  |  |
| --- | --- |
| **General Support:** | support@psyrcuit.com |
| **Security Issues:** | security@psyrcuit.com |
| **Sales Inquiries:** | sales@psyrcuit.com |
| **Website:** | https://psyrcuit.com |

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