Comprehensive Camera Selection Criteria or a Woodturning Demo System

Below are the 10 most important categories, each with:

- What to evaluate
- Why it matters for woodturning demos
- How important it is (High / Medium / Low)
- What "good" looks like

1. Optical Zoom Quality (≥5x Requirement)

What to evaluate: True optical zoom (not digital), autofocus performance at close range, sharpness when zoomed in

Why it matters: Woodturning demos require clear close-ups of bevel contact, grain tear-out, tool edge behavior, chucking and tenon shaping

Importance: High

What "good" looks like: 5x optical zoom with fast autofocus, no hunting or pulsing, clean detail on spinning wood

2. PTZ Smoothness and Responsiveness

What to evaluate: Motor noise, speed control, preset accuracy, smoothness of pan/tilt

Why it matters: Jittery or noisy PTZ movement distracts the audience

Importance: High

What "good" looks like: Quiet motors, smooth movement, accurate presets

3. Ease of Wireless Control

What to evaluate: Mobile app quality, preset buttons, responsiveness over Wi-Fi, control both cameras from one device

Why it matters: Simple, reliable control for volunteers

Importance: High

What "good" looks like: Intuitive app, fast response, easy preset switching

4. Ease of Setup (Monthly Meetings)

What to evaluate: Cable count, PoE support, Wi-Fi connection ease, settings memory

Why it matters: Setup should take under 5 minutes

Importance: High

What "good" looks like: One power cable, wireless HDMI, auto-connect, saved presets

5. Interchangeability Between Overhead and Side Camera

What to evaluate: Mounting pattern, power needs, control interface, size/weight

Why it matters: Enables swapping and future upgrades

Importance: High

What "good" looks like: Identical units or same series, same app, same output format

6. Image Quality (1080p vs 4K)

What to evaluate: Sharpness, color accuracy, low-light, motion clarity

Why it matters: Clarity without motion blur on spinning wood

Importance: Medium-High

What "good" looks like: 1080p60 minimum, clean detail, accurate color

7. Latency (Delay Between Camera and Screen)

What to evaluate: Wireless HDMI latency, camera processing delay

Why it matters: Low latency helps demonstrator sync with audience view

Importance: Medium-High

What "good" looks like: < 100 ms delay, no noticeable lag

8. Mounting Options (Especially Overhead)

What to evaluate: Ceiling mount compatibility, weight, cable routing

Why it matters: Overhead camera must be safe and permanent

Importance: Medium

What "good" looks like: Standard 1/4-20 mount, universal bracket compatible

9. Reliability and Build Quality

What to evaluate: Heat management, fan noise, stability, firmware support

Why it matters: Avoid crashes during demos

Importance: Medium

What "good" looks like: Solid housing, no overheating, stable firmware

10. Cost vs. Value

What to evaluate: Price justification, setup time, demo clarity

Why it matters: Maximize performance per dollar

Importance: High

What "good" looks like: $600-$800 per camera, strong wireless control, HDMI output

Weighted Importance Table:

Criterion | Importance | Weight (%)

Optical Zoom Quality | High | 20%

PTZ Smoothness | High | 20%

Ease of Wireless Control | High | 15%

Ease of Setup | High | 15%

Interchangeability | High | 10%

Image Quality | Medium-High | 10%

Latency | Medium-High | 5%

Mounting Options | Medium | 3%

Reliability | Medium | 2%

Cost vs Value | High | 20%

Side-by-Side PTZ Camera Comparison Table

Criteria	AViPAS AV-1251	Avmatrix PTZ2870-5X	Reolink E1 Outdoor Pro	SV3C 36x PTZ
Optical Zoom	5x optical	5x optical	3x digital only	36x optical
Zoom Quality for Woodturning	High	High	Low	Medium-High
PTZ Smoothness	High	Very High	Medium	Medium
Autofocus Performance	High	Very High	Medium	Medium
Wireless Control Quality	High	High	Medium	Medium
Ease of Setup	High	Medium-High	High	Medium
Interchangeability	Excellent	Excellent	Medium	Medium
Mounting Options	Excellent	Excellent	Low	Medium
Image Quality	High	Very High	Medium	Medium-High
Latency	Low	Low	Medium	Medium
Reliability	High	Very High	Medium	Medium
Cost	$720	$1,242	$60-$100	$120-$180
Cost vs Value	Excellent	Good	Good	Good
Best Use Case	Professional demos	Broadcast demos	Budget setups	Large-room zooming