



How to build a new image quality test lab from scratch

Information and checklists for enhancing your test lab

Introduction

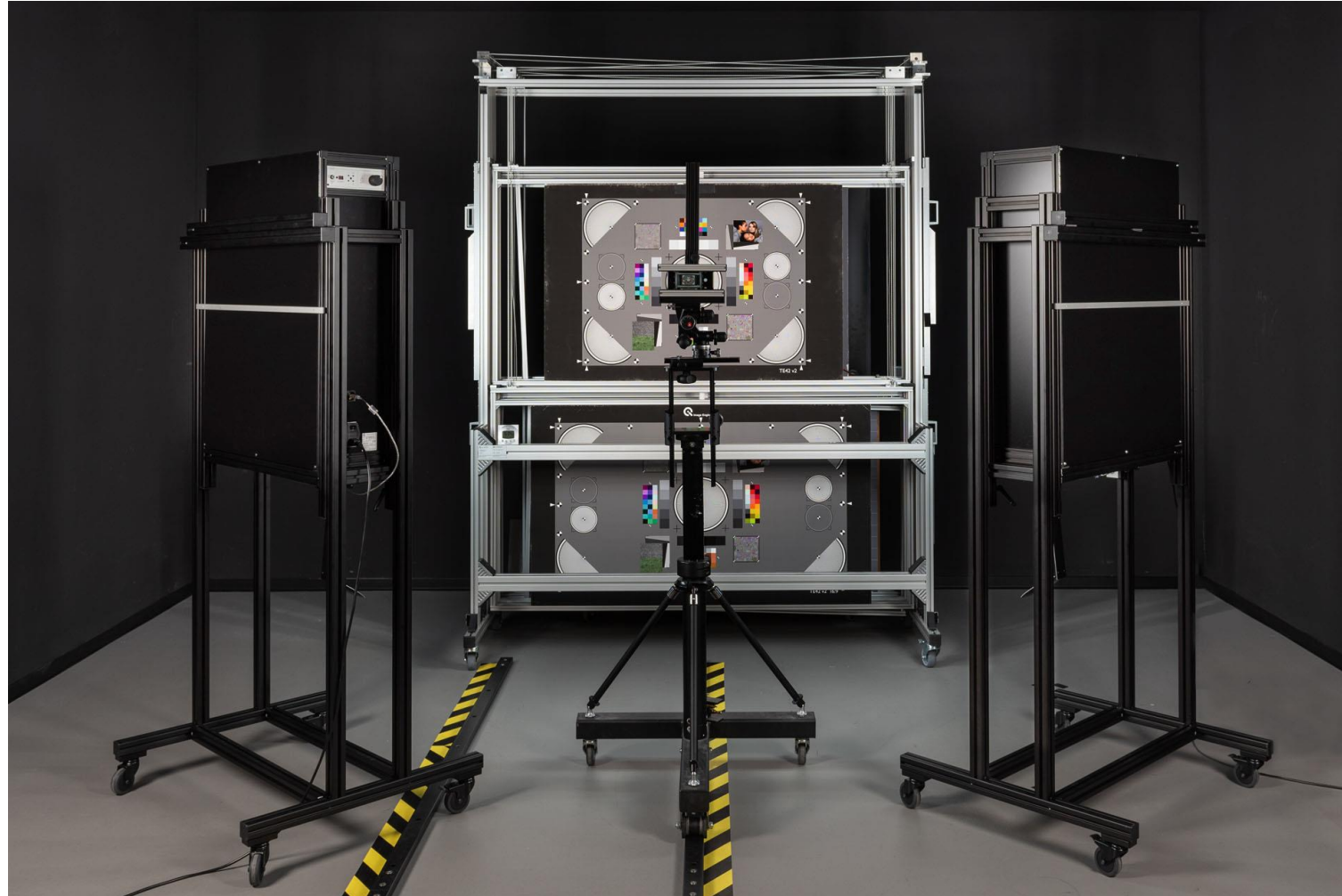
- The following slides contain a set of checklists with requirements and recommendations to consider when building a new image quality test lab.
- For detailed explanations and example scenarios, please visit our website:
- Checklists:
 - Room Requirements (page 3)
 - Room Recommendations (page 5)
 - Automating your test lab (page 8)

Room requirements (checklist)

1. Dark room without windows to avoid stray light.
 1. If a windowless room is unavailable then you must cover windows with proper material (e.g., Molton fabric).
2. Walls, floors and ceilings painted in a neutral dark color (e.g., black or dark grey).
3. Air-conditioning and temperature control over the room (most ISO tests require a temp between 21-23°C).
4. High ceilings, but can vary depending on the size of the equipment you are using.
5. Solid floors with no (or very limited) vibrations from outside elements (e.g., close passing trains).
6. A sufficient power supply capable of powering all of the various light sources.
7. Proper covering to ensure complete coverage of any remaining reflective material (e.g., doorway exit signs).
 1. When splitting a room for different tests, ensure you have proper partitions to separate the areas and avoid stray light from the other test (we recommend Molton curtains).

Room Requirements

An example from our test lab of a windowless dark room for image quality testing.



Room recommendations (checklist)

1. Rail system for mounting tripod to ensure tripod is always in a uniform system when testing.

- iQ-Teststand / iQ-Monopod
- <https://www.image-engineering.de/products/solutions/modular-test-stand>

2. Chart holder either motorized or manual for quickly changing charts.

- iQ-Chartmount-V/M
- <https://www.image-engineering.de/products/solutions/modular-test-stand>

3. Lux meter for determining the accuracy of the luminance during testing.

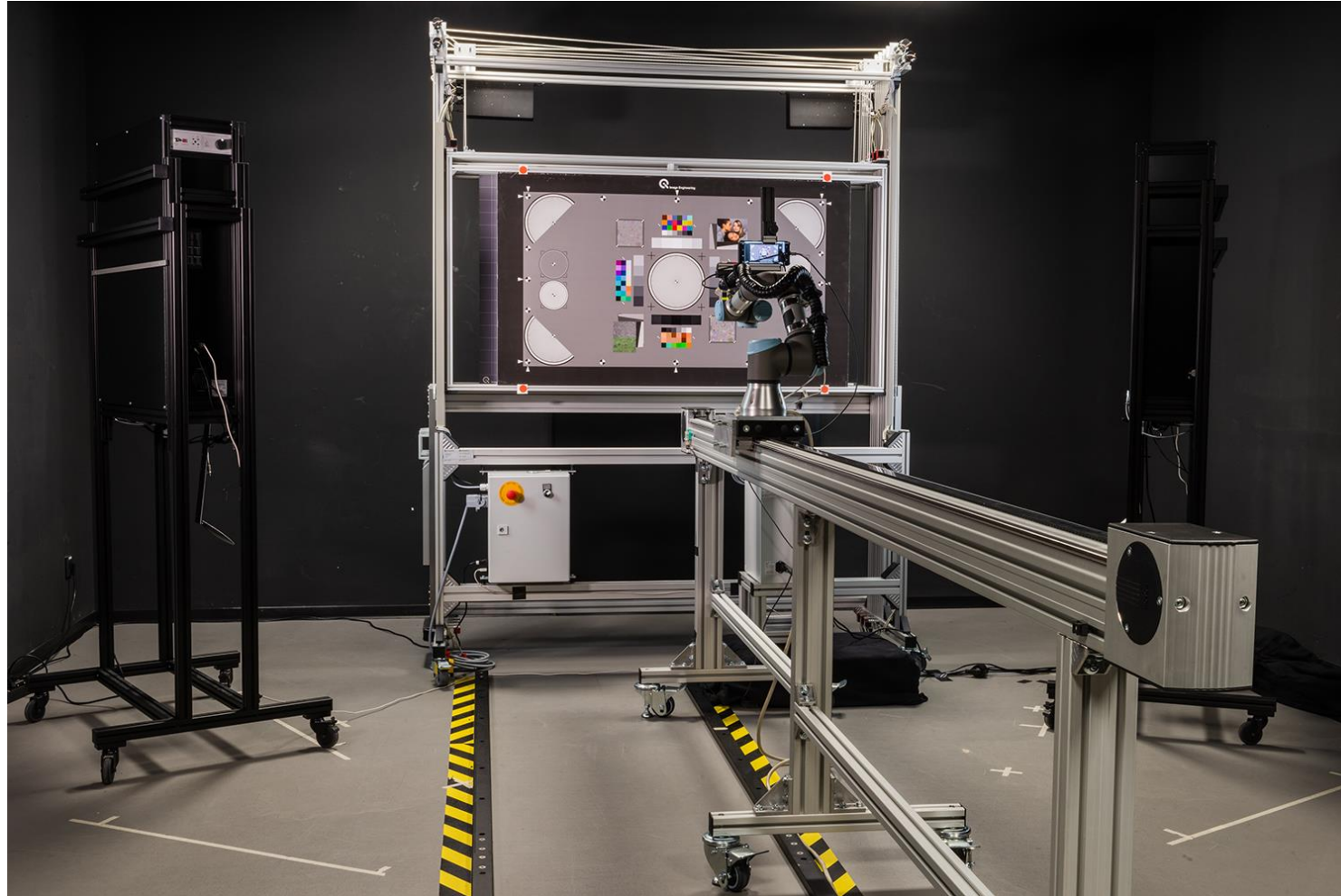
- PRC Krochmann Radiolux 111
- <https://www.image-engineering.de/products/accessories/all/139-3rd-party-accessory/928-prc-krochmann-radiolux-111>

4. Analysis software for analyzing test results.

- iQ-Analyzer
- <https://www.image-engineering.de/products/software/376-iq-analyzer>

Room Recommendations

A test bench and chart mount provide a stable and accurate testing environment.



An automated test lab

There are many benefits of an automated test lab including:

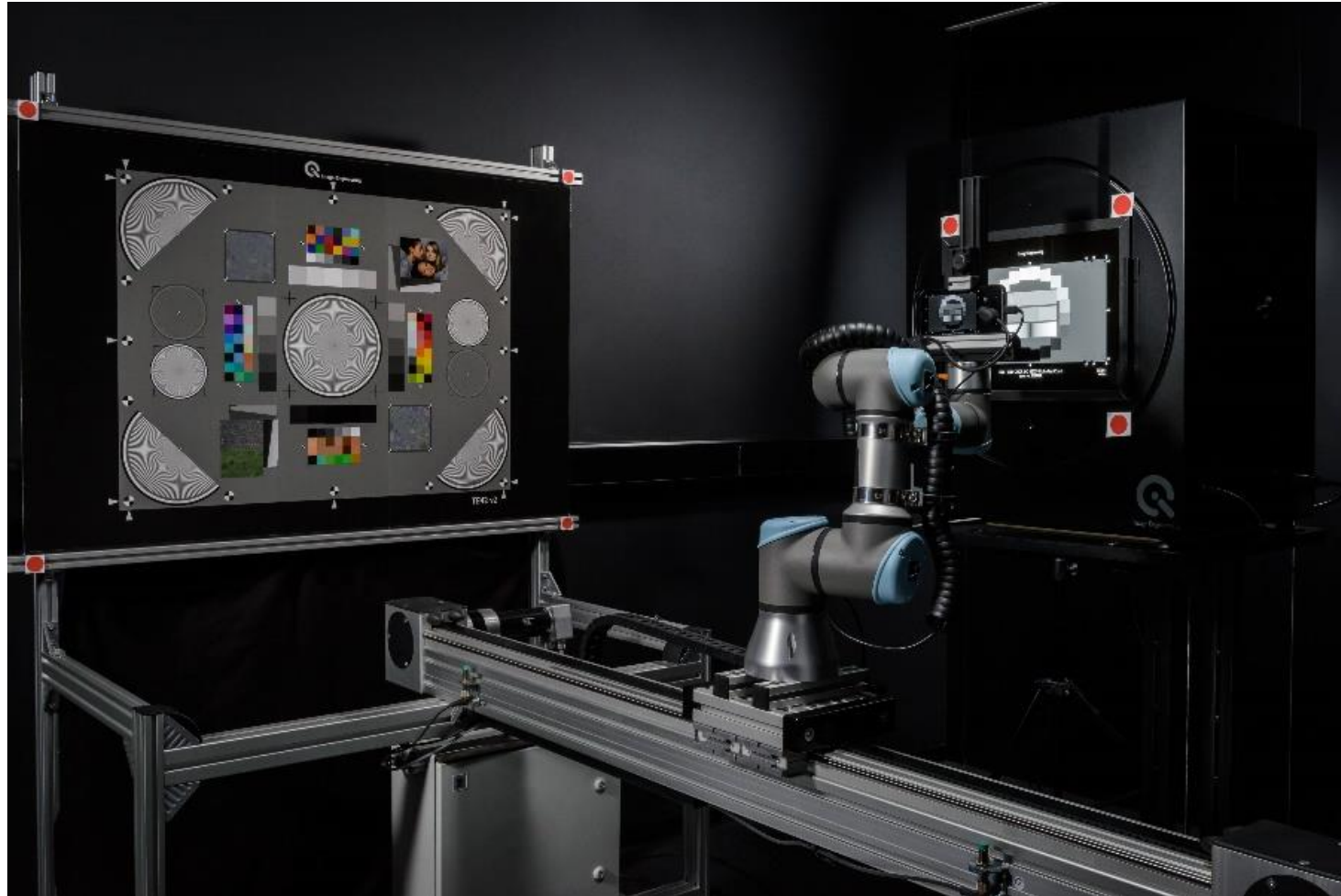
- Improved overall accuracy and consistency of repeated measurements.
- Improved overall productivity – quicker overall measurements and fewer “do-over” tests.
- Reducing the amount of times, a human must handle the equipment.
- Reducing human interaction in the measurement process.

An automated test lab (checklist)

1. Light sources – LED-based light sources allow you to generate spectra and control the intensity.
 - iQ-Flatlight
 - <https://www.image-engineering.de/products/equipment/illumination-devices/803-iq-flatlight>
2. Chart handling – automatically change charts with a motorized chart mount.
 - iQ-Chartmount-V
 - <https://www.image-engineering.de/products/solutions/modular-test-stand>
3. Camera distance – automate camera distancing during testing with a motorized test bench and API software.
 - iQ-Teststand
 - <https://www.image-engineering.de/products/solutions/modular-test-stand>
4. Camera positioning – automate camera alignment with a robot arm and software.
 - iQ-Automator
 - <https://www.image-engineering.de/products/solutions/all-solutions/iq-automator>

An automated test lab

Consider automating parts of your test lab for even more accurate testing.



We are here to help!

If you are not sure where to begin, or just need some advice for your lab setup, please don't hesitate to contact us for a free consultation.

Contact us at:

support@image-engineering.de

More information on setting up a new test lab is also available on our website at:

<https://www.image-engineering.de/library/technotes/1081-how-to-build-a-new-test-lab-from-scratch>



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