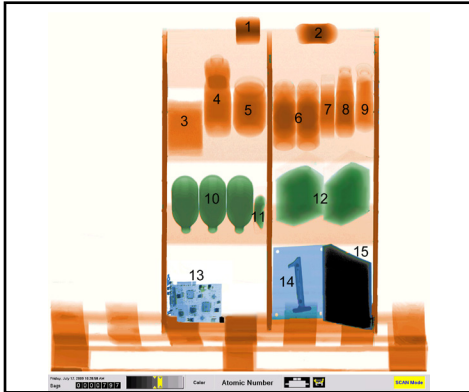


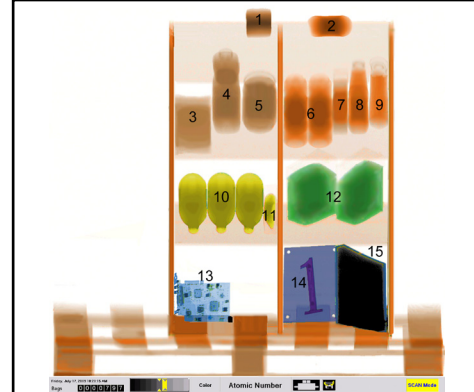
# 6 Color Imaging

When Z-Number Discrimination Is Critical<sup>TM</sup>

## Conventional 3 Color Imaging



## Astrophysics 6 Color Imaging



- |                 |                  |                   |                   |                    |
|-----------------|------------------|-------------------|-------------------|--------------------|
| 1. C4 Explosive | 4. Cooking Oil   | 7. Salad Dressing | 10. Glass Bottles | 13. Circuit Board  |
| 2. Heroin       | 5. Peanut Butter | 8. Shampoo        | 11. Toothpaste    | 14. Gold Lettering |
| 3. Rice         | 6. Soda Cans     | 9. Conditioner    | 12. Salt          | 15. Steel Block    |

Astrophysics 6 Color Imaging is a **breakthrough in the x-ray security industry** and marks a significant step forward in **threat discrimination** and **material identification**.

The introduction of 6 color, rather than the conventional 3 color palette allows operators to **more efficiently recognize objects and isolate security threats**. As a result, 6 Color Imaging not only increases **precision screening**, but also greatly **improves throughput**.

The commonly used 3 color imaging was established over 20 years ago and has a limited color coding that makes it difficult to discriminate between similar materials. 3 Color Imaging simply does not provide the operator with enough information.

In contrast, 6 Color Imaging utilizes **extended color categorizing** through **Atomic Z-Number Measurement**. Each screened object appears in one of the 6 colors based upon a specific range of atomic numbers.

6 Color distinguishes between objects that only utilizing 3 Color cannot, dramatically improving an operator's material identification. 6 Color provides the operator more information in order to decipher between threat and non-threat items, therefore the operator is able to interpret the x-ray image quicker and isolate threats with precision. This increases both throughput and detection accuracy.

The two images above feature identical objects processed using industry standard 3 color, and Astrophysics 6 Color Imaging software. In comparison, 6 Color Imaging clearly displays **greater material separation** of objects screened. As an operator, the evident distinctions between materials allows for faster and more precise object identification, as well as fewer opened parcels, and increased efficiency.

Astrophysics exclusive 6 Color Imaging is a **standard feature** on all Astrophysics x-ray inspection systems, with **industry leading penetration and software**.

Z-Number	Material Type	3 Color	6 Color	Examples	Possible Threats
0-8	Organic	Orange	Brown	Wood, Oil	C-4, TNT, Semtex
8-10	Low Inorganic	Orange	Orange	Paper	Cocaine, Heroin
10-12	High Inorganic	Green	Yellow	Glass	Propellants
12-17	Light Metals	Green	Green	Aluminum, Silicon	Gunpowder, Trigger Devices
17-29	Heavy Metals	Blue	Blue	Iron, Steel	Guns, Bullets, Knives
29+	Dense Metals	Blue	Violet	Gold, Silver	High Value Contraband
-	Impenetrable	Black	Black	Lead	Shielding for Above Threats

## The 6 Color Industry Advantage

Advantages of 6 Color Imaging versus 3 Color are numerous and may vary by industry. The utilization of 6 Color Imaging enables high security threats to be more easily identified by operators; including illicit goods, explosives, sharpened implements, and other weapons or contraband.

- **Explosives Detection:** Benign low inorganic materials can be distinguished from **military explosives** which are displayed in brown, thus reducing false alert rates.
- **Drug Contraband:** Chlorinated **narcotic compounds** can be discriminated from many common organic materials and will appear in orange and allows for further color separation.
- **Propellants:** **Glass bottles** and containers which may contain liquor or suspicious liquids will be more readily differentiated from other inorganic and light metallic materials and appear in yellow.
- **Device Detection:** **Complex circuitry** and **detonating devices** differentiation in green allows trained personnel to safely disable and remove **IEDs**.
- **Weapon Detection:** **Guns, knives and other associated weaponry** are differentiated in blue and can be recognized based on their shape and their construction material.
- **Precious Metal Industry:** 6 Color Imaging differentiates **gold, silver** and **platinum** in violet while steel and iron appear in blue. Separating such precious metals allows for easier and more immediate object recognition.



ISO 9001:2008 Certified Organization

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