

BULLETIN TR-95C

CAMERA EQUIPMENT

MOBILE VITASCAN
CAMERA EQUIPMENT

DU MONT[®]

Mobile Vitascan Camera Equipment

FEATURES

VITASCAN

*For LIVE Color
Programming*

- SIMPLIFIED SERVICE
- NO LENGTHY WARM-UP
- ELIMINATES AIR CONDITIONING
- NO BURN-IN
- NO SPECIAL MAKE-UP
- PERFECT CAMERA MATCH
- COMPACT CAMERA



*Mobile Vitascan
Camera
provides the finest
method for live
color pickup
at extremely
low cost.*

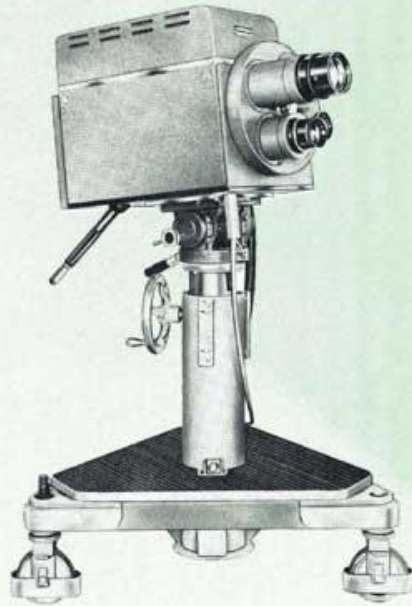
- NO REGISTRATION PROBLEMS
- CUTS MANPOWER IN HALF
- NO HOT LIGHTS
- TUBE COST a few cents per hour
- COLOR AT MONOCHROME COST

**PROVIDING
THE FINEST,
MOST ECONOMICAL
METHOD OF
ORIGINATING
LOCAL
LIVE COLOR
PROGRAMMING**

The Du Mont Vitascan is a low-cost, extremely simple television system offering beautiful, full-color pictures. It represents an entirely new concept in television pickup principles proved superior in both broadcasting and industrial applications. In addition to full-color reproduction, the Vitascan is equally well-adapted to black-and-white picture use. The Vitascan answers the need for a versatile color/monochrome television system limited only by the fact that it is operated in a light-tight studio, under special lights supplied as part of the system.

The Du Mont Vitascan utilizes the principle of the flying spot scanner. Operating as a mobile light source, the Vitascan camera houses a cathode-ray tube which provides a very bright raster. The raster is projected through an objective lens and scans the desired scene.

Multiplier phototubes mounted in pickup scoops which are grouped like studio floodlights pick up the reflected light. Red, green, and blue filters mounted in front of the multiplier phototubes filter the reflected light from the scene into the three primary color components required by the television system and each phototube converts the light energy into an electrical signal. The three separate

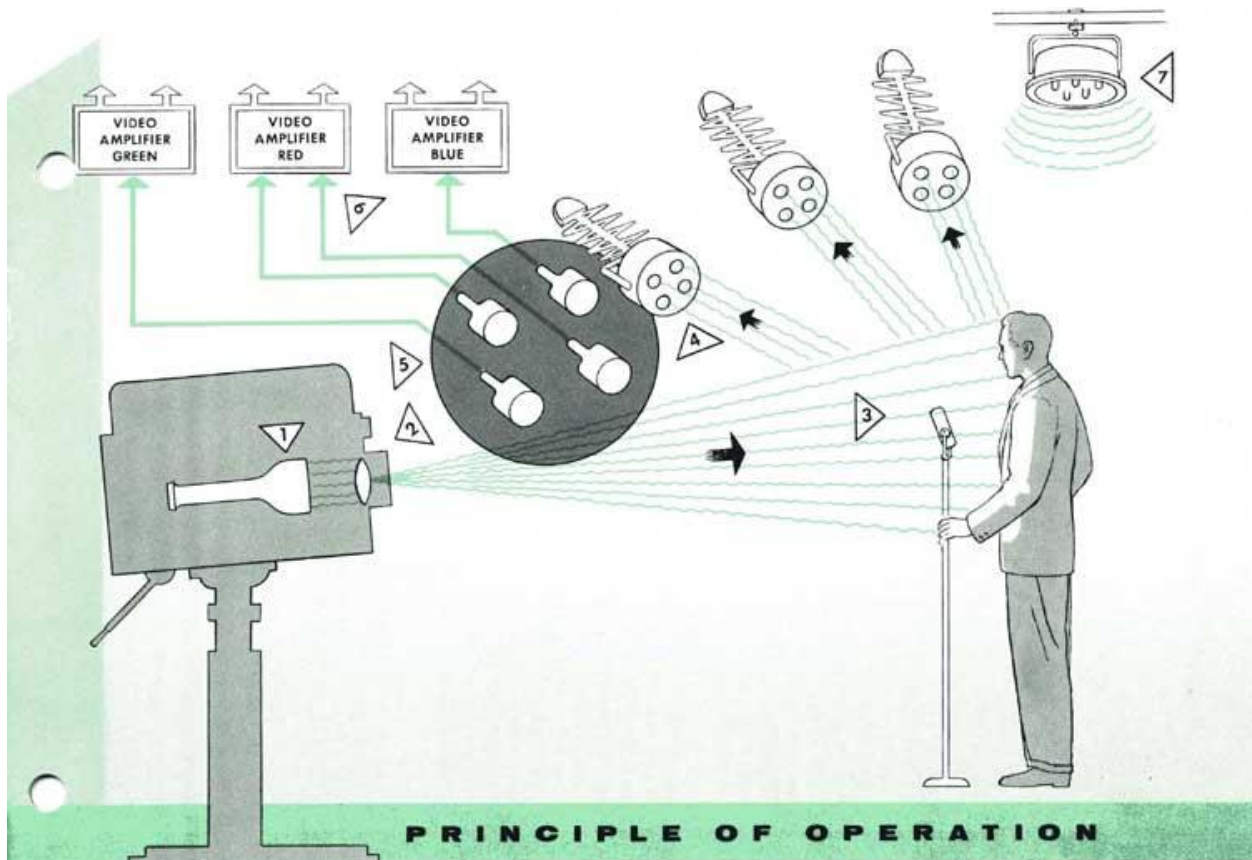


signals from the pickup scoops are amplified to form standard red, green, and blue video for feed to any standard encoder.

The pickup scoops used in the light-tight studio are physically positioned for desired "lighting" effects and controlled by a dimmer panel.

Since the bright raster produced by the Vitascan camera does not provide enough illumination for the convenience of performers, sync-lites are provided. These fixtures are pulsed into illumination during the vertical blanking period of the television signal, so that they do not interfere with the video produced by the Vitascan raster.

The Vitascan is the simplest, most economical method for achieving local live color programming, and when combined with the Du Mont Color Multi-Scanner, provides complete color programming facilities.



PRINCIPLE OF OPERATION

- 1 Within the mobile Vitascan camera, an extremely small spot traces an unmodulated raster of high light intensity on the face of a special cathode-ray tube. This is known as the "flying spot".
- 2 The raster is directed through the camera objective lens.
- 3 The light passes from the lens to scan the subject where it is modulated by varying degrees of reflection from the subject.
- 4 Modulated reflected light is picked up by the pickup scoops. Blue, green, and two red filters within the pickup scoop pass their respective light components into multiplier phototubes.

- 5 The multiplier phototubes (see detail), transform the light into electrical signals which are multiplied in strength within the tube.
- 6 From the multiplier phototubes the electrical signals are fed into their respective video amplifiers which gamma- and phosphor- correct the signals for optimum reproduction of both gray and chromatic scales. Each video amplifier adds blanking and provides two identical outputs—one for monitoring and one for programming.
- 7 Overhead sync-lites provide studio illumination during vertical blanking periods of scanning operation.

VITASCAN MOBILE LIGHT SOURCE

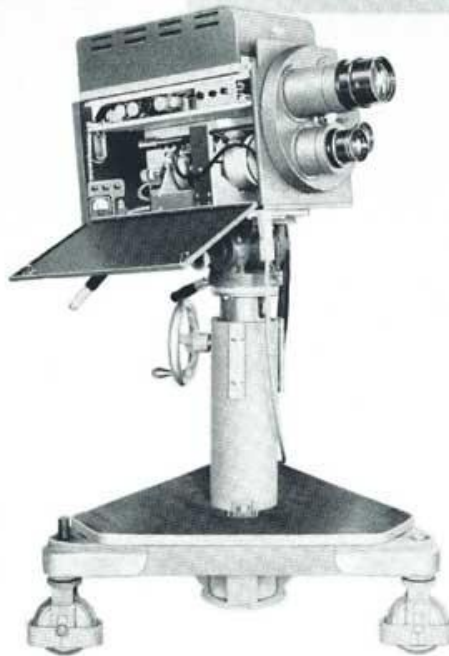
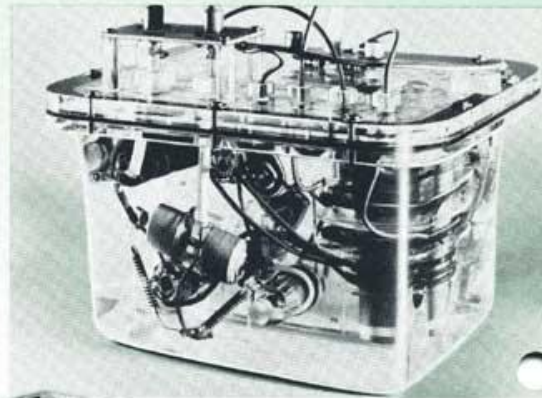
TYPE 5454-A

The Vitascan Mobile Light Source contains the 5AUP24 flying spot scanner tube and the sweep chassis which develops the raster for it. Using a 25 kv accelerating potential from the special high voltage supply, the cathode-ray tube provides a high intensity, high resolution raster. The 5AUP24 is mounted in a rack assembly at the bottom of the camera. This assembly can be moved back and forth by rotating the focusing arm at the rear of the camera.

The camera is mounted on a standard panning head and standard dolly for ease of operation. It is equipped with a lens turret containing three lenses. A monochrome, electronic viewfinder is mounted on top of the camera so the camera operator can focus on the subject.

Mounted external to the studio are the high and low voltage supplies, and three video amplifiers.

Compact Type 5313-A High Voltage Supply, which provides the accelerating potential for the special cathode-ray tube, has all high voltage components contained and immersed in an insulated lucite compartment filled with silicone fluid. The silicone fluid absolutely prevents high voltage corona and arcing.



All components and circuits in the mobile Vitascan camera are easily and quickly accessible for maintenance. All seldom-used control adjustments are in easy reach with side-panel swung open.

EQUIPMENT COMPLEMENT

TA-205-A

Mobile Vitascan Camera Equipment including:

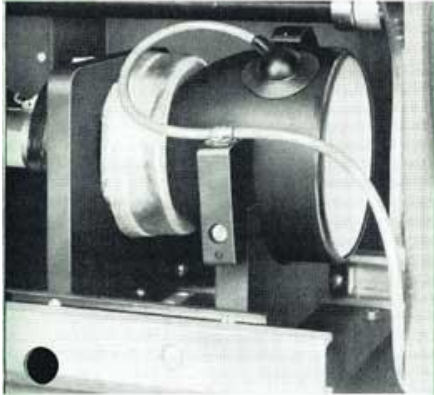
- 1 5454-A Vitascan Head
- 1 5099-C Vitascan Viewfinder
- 1 5455-A Vitascan Connector Panel
- 1 5313-B High Voltage Supply
- 2 5019-A Low Voltage Supply
- 1 5319-A Power Control Panel
- 1 PR77-C Rack Cabinet

Accessories

Du Mont Type C camera cable
Vitascan High Voltage Cable Assembly
Conventional camera mounting
and dolly equipment

LENS COMPLEMENT

- 1 101mm, f 2.8, Horizontal viewing angle 37.4°
- 1 150mm, f 2.8, Horizontal viewing angle 26.7°
- 1 210mm, f 3.5, Horizontal viewing angle 19.2°



High-Voltage, high-intensity cathode-ray tube of superb resolution qualities. Long life, low cost.

TUBE COMPLEMENT

5454-A Vitascan Head

- | | |
|------|--------|
| Qty. | Type |
| 1 | 5AUP24 |
| 1 | 6AL5 |
| 2 | 6AU5 |
| 1 | 6AS7 |
| 1 | 6BD4 |
| 2 | 6CD6 |
| 1 | 12AT7 |
| 3 | 12AU7 |

5099-C Vitascan Viewfinder

- | | |
|------|--------|
| Qty. | Type |
| 1 | 003 |
| 1 | 5FP4 |
| 2 | 6AK5 |
| 1 | 6AG7 |
| 1 | 6AL5 |
| 1 | 6AS6 |
| 1 | 6AS7-G |
| 1 | 6BQ6 |
| 1 | 6C4 |
| 2 | 6J6 |
| 1 | 8016 |

5019-A Low Voltage Supply

- | | |
|------|---------|
| Qty. | Type |
| 2 | 0A3 |
| 3 | 0D3 |
| 2 | SR4-GY |
| 2 | 6AS7-G |
| 7 | 6B4-G |
| 1 | 6HG |
| 2 | 6SL7-GT |

5313-B High Voltage Supply

- | | |
|------|---------|
| Qty. | Type |
| 1 | 0A3 |
| 1 | 6AG7 |
| 2 | 6CD6-G |
| 1 | 6SL7-GT |
| 1 | 6SN7-GT |
| 4 | 8016 |

ELECTRICAL SPECIFICATIONS

Inputs

- | | |
|-------------------------------|--|
| Negative horizontal drive | 3.5 v to 8 v (75 ohm terminated) |
| Negative vertical drive | 3.5 v to 8 v (75 ohm terminated) |
| Video signal (black negative) | 1 v (for Vitascan Viewfinder, from green 5310-C Video Amplifier) |

Output

- Scanning light beam (raster)

PHYSICAL DIMENSIONS

Type 5454-A Vitascan Head

- Length — 22¾ inches
- Width — 14½ inches
- Height — 12½ inches
- Weight — 75 pounds

Type 5099-C Vitascan Viewfinder

- Length — 20½ inches
- Width — 12½ inches
- Height — 7 inches
- Weight — 40 pounds

VERTICAL RACK-MOUNTING DIMENSIONS

All panels of standard 19" width

Unit	Vertical Space	Weight
5313-B High Voltage Supply	10-5/16"	40 lbs.
5019-A Low Voltage Supply	14"	70 lbs.
5455-A Connector Panel	5½"	5 lbs.
5319-A Power Control Panel	3-15/32"	3 lbs.

POWER REQUIREMENTS (Overall)

TA-205-A Mobile Vitascan Camera Equipment

117 v ac, 21 amp.

POWER REQUIREMENTS (Internal)

5454-A Vitascan Head

- | | |
|--------------------|--------------------------|
| 117 v ac, 0.8 amp. | from Power Control Panel |
| +27 kv, 540 µa. | from High Voltage Supply |
| +350 v, 240 ma. | from Low Voltage Supply |
| +250 v, 30 ma. | from Low Voltage Supply |

5099-C Vitascan Viewfinder

- | | |
|---------------------|--------------------------|
| 117 v ac, 0.46 amp. | from Power Control Panel |
| +350 v, 120 ma. | from Low Voltage Supply |
| +250 v, 45 ma. | from Low Voltage Supply |

5313-B High Voltage Supply

- | | |
|--------------------|-------------------------|
| 6.3 v ac, 6.6 amp. | from Connector Panel |
| +350 v, 200 ma. | from Low Voltage Supply |

5019-A Low Voltage Supply

- | | |
|--------------------|--------------------------|
| 117 v ac, 4.6 amp. | from Power Control Panel |
|--------------------|--------------------------|

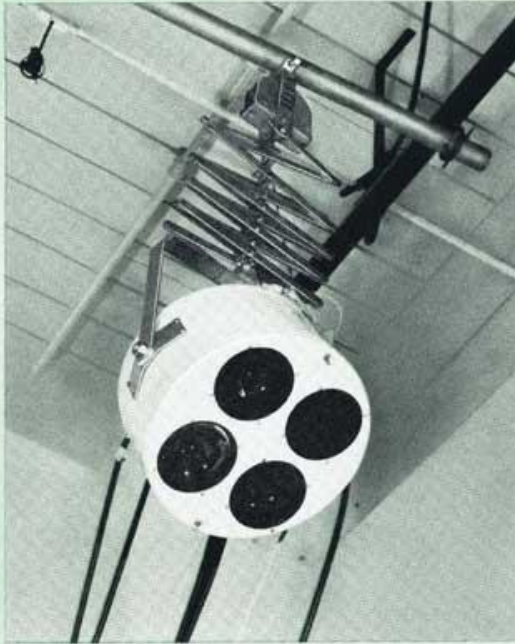
5455-A Connector Panel

- | | |
|--------------------|--------------------------|
| 117 v ac, 1.0 amp. | from Power Control Panel |
|--------------------|--------------------------|

5319-A Power Control Panel

- | | |
|---------------------|-----------|
| 117 v ac, 21.0 amp. | from Line |
|---------------------|-----------|

Vitascan Color Pickup Equipment



EQUIPMENT COMPLEMENT

TA-204-A Vitascan Color Pickup Equipment including:

8	5440-A Scanner Pickup Scoop	1	5019-A Low Voltage Supply
1	5439-A Video Junction Box	1	PR77-C Cabinet Assembly
1	5438-A Dimmer Panel		
3	5310-C Video Amplifier	Photocell complement	
4	5314-A High Voltage Supply	16	Type K1416 (red)
1	5315-A Regulator Unit	16	Type K1420 (blue, green)

ELECTRICAL SPECIFICATIONS

Resolution Capable of 550 lines

Inputs

Composite sync, negative (if desired)	3.5 v to 4.5 v p-p (bridging)
Blanking, negative	3.5 v to 4.5 v p-p (bridging)
Horizontal drive, negative	3.5 v to 4.5 v p-p (bridging)
Optional (used for setup purposes)	
Stepwave, black negative, linear	1 v p-p at 75 ohms

Outputs

5310-C Video Amplifier (green channel): two identical video signals	1 v p-p source-terminated in 75 ohms (one for camera viewfinder)
5310-C Video Amplifier (red channel): two identical video signals	1 v p-p source-terminated in 75 ohms
5310-C Video Amplifier (blue channel): two identical video signals	1 v p-p source-terminated in 75 ohms

PHYSICAL DIMENSIONS

Type 5440-A Scanner Pickup Scoop

Diameter	14 inches
Height	12 inches
Weight	25 pounds

ASSOCIATED EQUIPMENT FOR

Vitascan Sync-Lite Equipment

EQUIPMENT COMPLEMENT

TA-203-A Vitascan Sync-Lite Equipment including:

4	5452-A Sync-Lite Fixture
1	5450-A Sync-Lite Trigger Unit
1	5451-A Sync-Lite Power Panel
2	5019-A Low Voltage Supply

ELECTRICAL SPECIFICATIONS

Input

Negative vertical drive	3.5 v to 4.5 v p-p at 75 ohms
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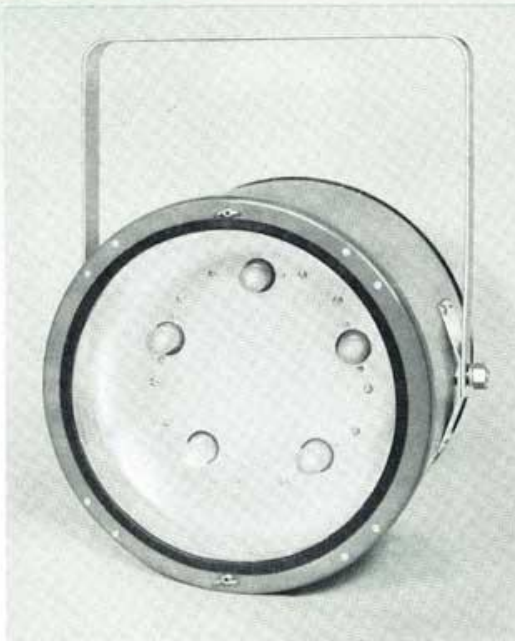
Output

Pulsed white light, 100 μ s. duration, synchronized with vertical drive

PHYSICAL DIMENSIONS

Type 5452-A Sync-Lite Fixture

Diameter	14 inches
Height	10 inches
Weight	15 pounds



VERTICAL RACK-MOUNTING DIMENSIONS

All panels of standard 19" width

Unit	Vertical Space	Weight
5439-A Video Junction Box	6-13/16"	5 lbs.
5438-A Scanner Dimmer Panel	5"	12 lbs.
5310-C Video Amplifier	8-3/16"	8 lbs.
5314-A High Voltage Supply	5-1/16"	11 lbs.
5315-A Regulator Unit	5-1/16"	35 lbs.
5019-A Low Voltage Supply	14"	60 lbs.

POWER REQUIREMENTS (Overall)

TA-204-A Vitascan Color Pickup Equipment
117 v ac, 8.9 amp.

POWER REQUIREMENTS (Internal)

5440-A Scanner Pickup Scoop		5310-C Video Amplifier	
+250 v, 16 ma.	from Low Voltage Supply	115 v ac (regulated), 0.3 amp.	from Regulator Unit
-1000 v, 6 ma.	from Dimmer Panel	+250 v, 130 ma.	from Low Voltage Supply
5438-A Scanner Dimmer Panel		5315-A Regulator Unit	
-1000 v, 64 ma.	from High Voltage Supply	117 v ac, 2.0 amp.	from Line or Control Panel
5314-A High Voltage Supply		5019-A Low Voltage Supply	
115 v ac (regulated), 0.3 amp.	from Regulator Unit	117 v ac, 4.6 amp.	from Line or Control Panel

TUBE COMPLEMENT

5440-A Scanner Pickup Scoop		5310-C Video Amplifier		5019-A Low Voltage Supply	
Qty.	Type	Qty.	Type	Qty.	Type
2 (red)	K1416	4	6AH6V	2	0A3
2 (blue, green)	K1420	1	6AK5	3	0D3
		1	6AL5	2	5R4-GY
		1	12AT7	2	6AS7-G
5314-A High Voltage Supply			1	7	6B4-G
Qty.	Type		Type		Type
1	5R4-GY	2	5687	1	6H6
				2	6SL7-GT

MOBILE VITASCAN SYSTEM

VERTICAL RACK-MOUNTING DIMENSIONS

All panels of standard 19" width

Unit	Vertical Space	Weight
5450-A Sync-Lite Trigger Unit	3-5/16"	6 lbs.
5451-A Sync-Lite Power Panel	5-7/32"	5 lbs.
5019-A Low Voltage Supply	14"	70 lbs.

POWER REQUIREMENTS (Overall)

TA-203-A Vitascan Sync-Lite Equipment
117 v ac, 9.4 amp.

POWER REQUIREMENTS (Internal)

5452-A Sync-Lite Fixture		5019-A Low Voltage Supply	
+350 v, 200 ma.	from Low Voltage Supply	117 v ac, 4.6 amp.	from Sync-Lite Power Panel
5450-A Sync-Lite Trigger Unit		5451-A Sync-Lite Power Panel	
117 v ac, 0.2 amp.	from Sync-Lite Power Panel	117 v ac, 9.4 amp.	from Line
+350 v, 21 ma.	from Low Voltage Supply	+350 v, 800 ma.	from Low Voltage Supply

TUBE COMPLEMENT

5452-A Sync-Lite Fixture		5019-A Low Voltage Supply		5450-A Sync-Lite Trigger Unit	
Qty.	Type	Qty.	Type	Qty.	Type
5	U35A	2	0A3	7	6B4-G
		3	0D3	1	6H6
		2	5R4-GY	2	6SL7-GT
		2	6AS7-G		



Typical studio scene ready for programming. Note positioning of pickup scoops arranged to achieve back-lighting, highlighting and other dramatic effects.



Program in progress. Vitascan mobile camera is used in exactly the same manner as an ordinary camera. Operator focuses and views through electronic viewfinder.



As a merchandising tool the Vitascan has proved a traffic stopper. Monitors or standard color receivers may be located throughout a store.



Stopping traffic outside the store! This photo was taken at a recent demonstration by Gimbel Brothers in New York City.



SUGGESTED MINIMUM STUDIO SPECIFICATIONS

DEPTH 20' WIDTH 15' HEIGHT 12'
WALLS AND CEILING PAINTED WHITE FOR MAXIMUM
LIGHT REFLECTION.

DU MONT[®]

**TELEVISION TRANSMITTER DEPARTMENT
ALLEN B. DU MONT LABORATORIES, INC.
CLIFTON, NEW JERSEY**