

## Specifications

### TeleFlash 130

#### Measuring Geometry

Alpha/Alpha

#### Light Source

Xenon Flash Lamp

#### Measuring Range

0 -160% reflectance

#### Spectral Range

400 to 700nm

#### Monochromator

Dual beam, 16 channel monochromator

#### Measuring Time

100 - 600  $\mu$ s micro seconds

#### Measuring Interval

Minimum 2 seconds

#### Short-Term Repeatability

$\leq 0.05 \Delta E_{cmc}$  (2:1) for 12 colored tiles (BCRA)

#### Long-Term Repeatability

$\leq 0.20 \Delta E_{cmc}$  (2:1) for 12 colored tiles (BCRA) specifications for 42cm measuring distance

#### Inter-Instrument Agreement

$< 0.30 \Delta E_{cmc}$  (2:1)

#### Measuring Distance Range

16.5" - 59.1" (42mm - 150cm)

#### Distance Stability

0.10  $\Delta E_{cmc}$  (2:1) / 0.4" (10mm)

#### Measuring Area

2.4" - 5.1" (60mm - 130mm) diameter

#### Measuring Angle

22.5° from the surface normal

#### Calibration

Black and white (external)  
Integrated, automated daily calibration

#### Data Output

Serial, RS 232 (DB 25, female), 9600 baud

#### Working Environment

10 - 60°C, 10 - 90% relative air humidity (non-condensing)

#### Power Supply

90 - 265 VAC

#### Compressed Air Connection

Air Purge for Prevention of dust intrusion (not necessary for application in laboratory)

#### Dimensions

6.3" H x 10.6" W x 15" L  
160 H x 270 W x 380 L (mm)

#### Weight

Approx. 34 lbs. (15.4 kg)

#### Option

IR non-contact thermometer for 32 - 210°F (0 - 100°C) (integrated in TeleFlash 445)

## Specifications

### TeleFlash 445

#### Measuring Geometry

45° / 0°

#### Light Source

Xenon Flash Lamp

#### Observation

0°

#### Measuring Range

0 -160% reflectance

#### Spectral Range

400 to 700nm

#### Spectrophotometer

16 channel, Dual beam monochromator

#### Measuring Time

100 - 600  $\mu$ s micro seconds

#### Measuring Interval

Minimum 2 seconds

#### Short-Term Repeatability

$\leq 0.03 \Delta E_{cmc}$  (2:1) for 12 colored tiles (BCRA)

#### Long-Term Repeatability

$\leq 0.20 \Delta E_{cmc}$  (2:1) for 12 colored tiles (BCRA) specifications for 2" (50mm) measuring distance

#### Inter-Instrument Agreement

$< 0.20 \Delta E_{cmc}$  (2:1)

#### Measuring Distance Range

2.17"  $\pm$  0.2" (55mm  $\pm$  5mm)

#### Distance Stability

0.10  $\Delta E_{cmc}$  (2:1) / 0.4" (10mm)

#### Measuring Area

1.2" (30mm) diameter

#### Mounting Position

Vertical to the mounting surface

#### Calibration

Black and white (external)

#### Data Output

Serial, RS 232 (DB 25, female), 9600 baud

#### Working Environment

50 - 140°F (10 - 60°C), 10 - 90% relative air humidity (non-condensing)

#### Power Supply

90 - 265 VAC

#### Compressed Air Connection

Air Purge for Prevention of dust intrusion (not necessary for application in laboratory)

#### Dimensions

7.9" H x 11.4" W x 15.8" L  
200 H x 290 W x 402 L (mm)

#### Weight

Approx. 25 lbs. (11.2 kg)

#### Option

IR non-contact thermometer for 32 - 210°F (0 - 100°C) (integrated in TeleFlash 445)



## TeleFlash® System

### Non-Contact Spectrophotometer

Eliminate costly production line color errors with this automated online quality control system that provides non-contact measurement and continuous reporting. Easy to operate, the system works on virtually any material and in the harshest production environments to offer comparisons to specific standards or absolute measurements.

## Hardware Options

- Traversing bridge for operation
- Edge sensor
- Non-contact temperature measurement with pyrometer
- Automated calibration
- Heating and cooling device for determination of thermochromism
- Counter for recording length of run
- Dust protection system
- Explosion-proof safety equipment
- GLOSSFLASH non-contact gloss measurement
- Personal computer with Windows® operating system

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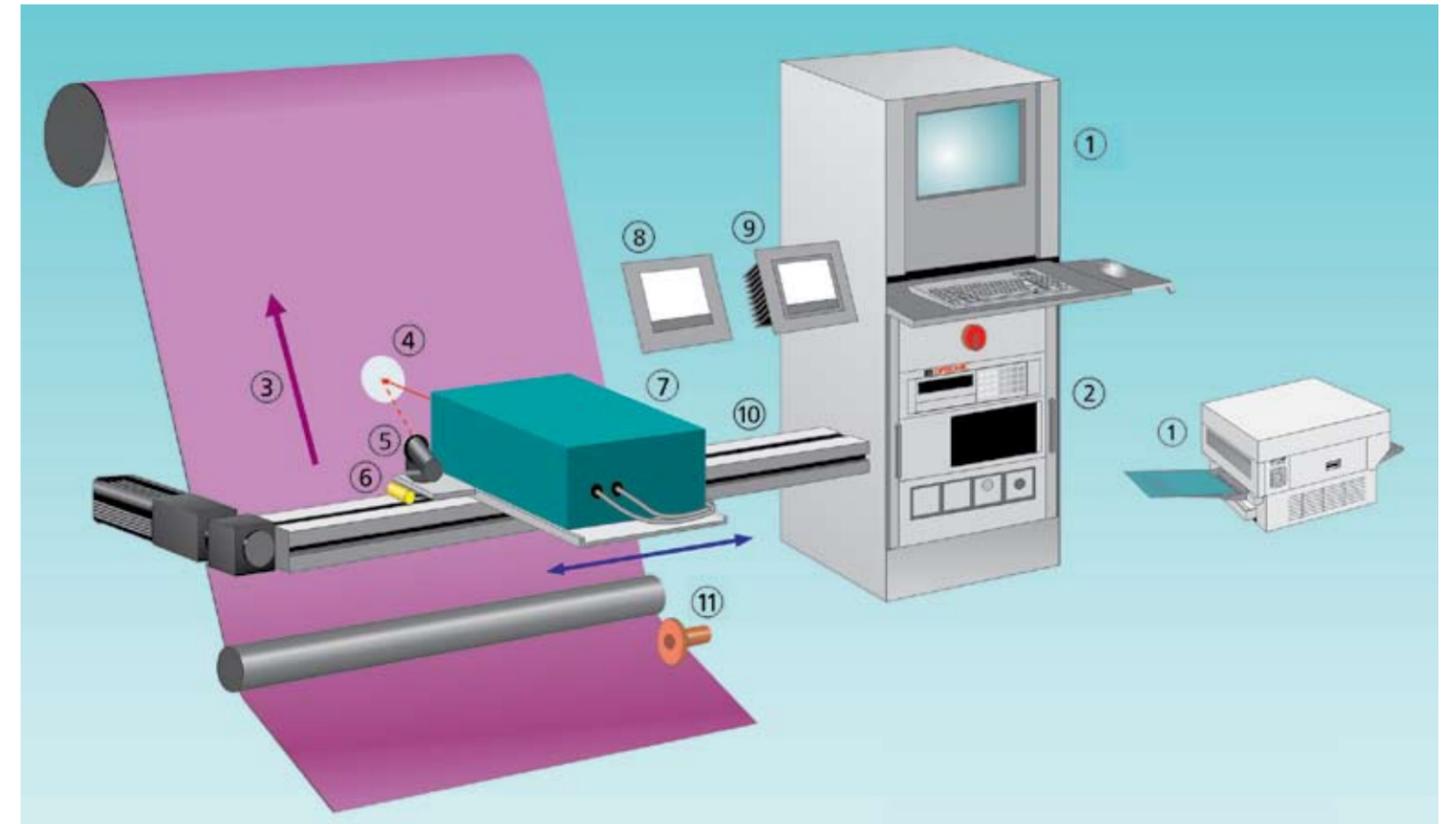
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## TeleFlash System Advantages

- **Uniform Online QA.** Online color measurement and evaluation of color deviation allows complete coverage of product run without stopping production
- **Easy to Operate.** Works with network connection or serial interface to support a network of computers and provide automated control of all operations, including calibration
- **Measures Wide Range of Materials and Products.** Measures a full range of materials, such as textured, finely patterned, gloss and for products such as vinyl, textiles, food, pigments, films, glass, and powders
- **Large Measuring Area.** Measures within a range of up to five feet without significant variation from system to sample
- **Withstands Harsh Environments.** Operates in dusty environments and operations that require explosion-proof protection
- **Non-Destructive.** Non-contact operation eliminates risk of damage and waste
- **Consistent Quality Measurement.** Visual graphics and acoustic alerts indicate when color tolerances are exceeded
- **Provides Extensive QA Data.** Complete documentation of color quality recorded and stored for later evaluation
- **Comprehensive Measurement.** Objective evaluation according to accepted international standards ensures integrity of online measurement program



## Automatic Color Quality Control During Production



1. Generate printed or onscreen reports for different timing intervals, length of run or width of run
2. Control tower with optional connection to a host computer
3. Moving goods
4. Measuring diameter, measuring distance
5. Non-contact thermometer (optional)
6. Edge sensor (optional)

7. TeleFlash spectrophotometer with integrated calibration device and pressurized air circulation
8. External sample holder (optional)
9. External heating and cooling device for the determination of thermochromism (optional)
10. Traversing measuring bridge
11. Meter/counter

### System Configuration

- TeleFlash 130 or 445 stationary spectrophotometer
- Certified calibration standards
- Software for color quality evaluation, including graphical output of differences in color against length of run or time
- Available formulas for calculating deviations in color: CIE Lab, HunterLab, CMC (l:c), CIE 94 (1:1:1), XYZ, Yxy, CIEUCS, CIE LUV, whiteness indices (ASTM E313-73, Stensby, CIE), yellowness indices (ASTM D1925-70), metamerism index, density (visual, filter: 29, 30, 33, 47, 47B, 50, 61, 70, 72B)
- Available illuminants for 2° and 10° normal observation: D65, D75, D55, D35, A, TL84, F2, F7, P, C, HOR, EGS, B, G, Xe, ADN
- Visual and/or acoustic signals