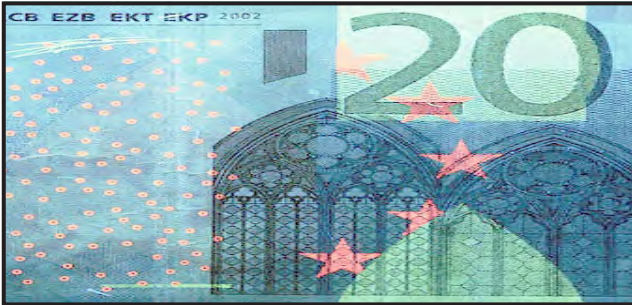


FLUO O

TRADEMARK
COUNTERFEIT
PROTECTION

UV Ink Densitometers / Colorimeters Measure Fluorescence & Phosphorescence Make Invisible Ink Quality **VISIBLE**



FLUO ADVANCED / Fluorescence & Phosphorescence



Measure

- CIE, XYZ, xy, Lch, BiFL, Delta E
- Red Fluorescence
- Green Fluorescence
- Blue Fluorescence
- Fluorescence dot area %
- Phosphorescence

Technology

- Near UV LED
- Far UV LED
- Tristimulus sensor
- Auto dynamic range

FLUODXConnect v0.59.0.0

Interface Display FLUODX Language Help

FLUODX Configuration EXIT

BETA

Measurement Data Table Phosphorecence Graphic XYZ->RGB Table

Color Space: WideGamutRGB

XYZ

Delete last line Clear Export Load

F365 F255 XYZ->RGB

| RGB | R | G | B | X | Y | Z | x | y | L | a | b | C | h | Co |
|---------|-----|-----|-----|--------|--------|--------|------|------|--------|--------|---------|--------|--------|-----|
| Red | 77 | 255 | 93 | 189,49 | 295,63 | 133,87 | 0,31 | 0,48 | 150,49 | -91,31 | 52,05 | 105,11 | 150,32 | lim |
| Yellow | 255 | 255 | 78 | 253,93 | 284,78 | 114,28 | 0,39 | 0,44 | 148,42 | -18,24 | 60,56 | 63,25 | 106,76 | yel |
| Cyan | 255 | 19 | 26 | 160,39 | 95,88 | 33,70 | 0,55 | 0,33 | 98,38 | 99,40 | -48,84 | 110,75 | 26,17 | ora |
| Magenta | 255 | 73 | 207 | 189,33 | 135,43 | 212,47 | 0,35 | 0,25 | 112,34 | 72,93 | -52,84 | 90,06 | 324,08 | ma |
| Blue | 10 | 86 | 255 | 84,14 | 84,23 | 255,04 | 0,20 | 0,20 | 93,55 | 5,60 | -102,44 | 102,59 | 273,13 | blu |
| Cyan | 71 | 255 | 255 | 219,98 | 309,13 | 297,63 | 0,27 | 0,37 | 152,98 | -70,13 | -15,36 | 71,79 | 192,35 | tur |
| Yellow | 255 | 255 | 202 | 263,15 | 287,64 | 232,47 | 0,34 | 0,37 | 148,97 | -12,35 | 1,98 | 12,50 | 170,89 | gre |
| Black | 0 | 0 | 0 | | | | | | | | | | | |

Average: 194,333 213,239 182,740 0,344 0,349 129,303 -2,017 -1,016 79,441 177,613

Std.Dev: 60,934 102,551 92,235 0,110 0,099 26,720 69,454 60,939 34,361 99,619

Max: 263,070 309,130 297,630 0,550 0,480 152,980 99,400 60,560 110,750 324,080

Min: 84,140 84,230 33,700 0,200 0,200 93,550 -91,310 -102,440 12,540 26,170

COM4 FLUO DX v00.59 sn00020 AA IRDA NC

FluoDX Software: Data Collection and Documentation Software

FLUO Invisible Ink Densitometer

Fluorescence and Phosphorescence Colorimeters

UV Ink Densitometer

Trademark & Counterfeit Protection

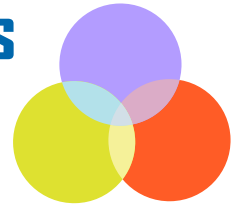
Control the Ink Film Thickness of Invisible Inks



FLUO Advanced (Fluorescence & Phosphorescence)

Improve Brand Security & Protection

- Solid Ink Coverage
- Fluorescent Tint Images
- Overprint Control



Invisible Ink Measured In The Visible Spectrum

MODEL TYPES

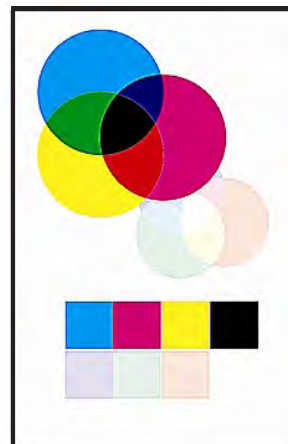
Incorporate Protection with Clever Designs

FLUO BASIC

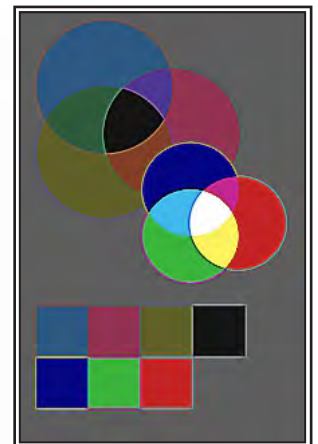
Measure Fluorescence
UV LED for Near UV (365nm)

FLUO ADVANCED

Measure Fluorescence
and Phosphorescence
Dual UV LED for Near
(365nm) and Far (256nm)

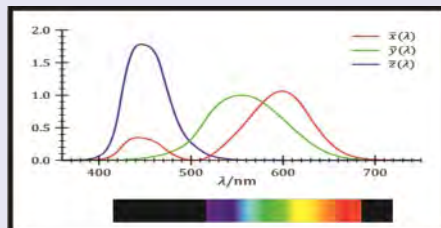


Visible Light



UV-LED

Serial Numbers, QR Codes
Digital Signatures
Tapes and Labels
Synthetic Paper
Smartphone Apps



Track & Trace
Holographic Images
RFID Printed Memory
Tracer Particles
DNA Markers

FUNCTIONS

Measure F365 M Lab
L = 98.0
a = 91.1
b = 58.5
n: 1

Measure P365B M Lab
ET 50.00 ms
DT 10.00 ms
7.0%E

Measure F365 M Lab
x = 0.55
y = 0.33
orange
n: 1

Measure P365B M Lab
Int Ph Filter B 26.3%
chg/dchg >74.6/ 23.2 ms
PhI 50/20: 0.6/ 11.3 ms

Measure F256 M Lab
Ratio F256/365 = 24%
Hue = 285 °/ 287 °
blue/blue
n: 1

Measure F365 M Int
Reference R1 Filter R
Value 103.7%
n: 8

F365 R1 R AA0008
Average = 100.7%
Max = 103.7%
Min = 97.5%
Tolerance 85%-115%

The easy to understand device user interface gives access to many measurement functions

PHOSPHORESCENCE

FLUODXConnect v0.59.0.0

Interface Display FLUODX Language Help

FLUODX Configuration EXIT

BETA

Measurement Data Table Phosphorencence Graphic XYZ->RGB Table

Wait Off Time 5 ms
Exposure Time 5 ms
Cool down Time 20 ms

PH365 Export Clear

SIGNAL [0-1]

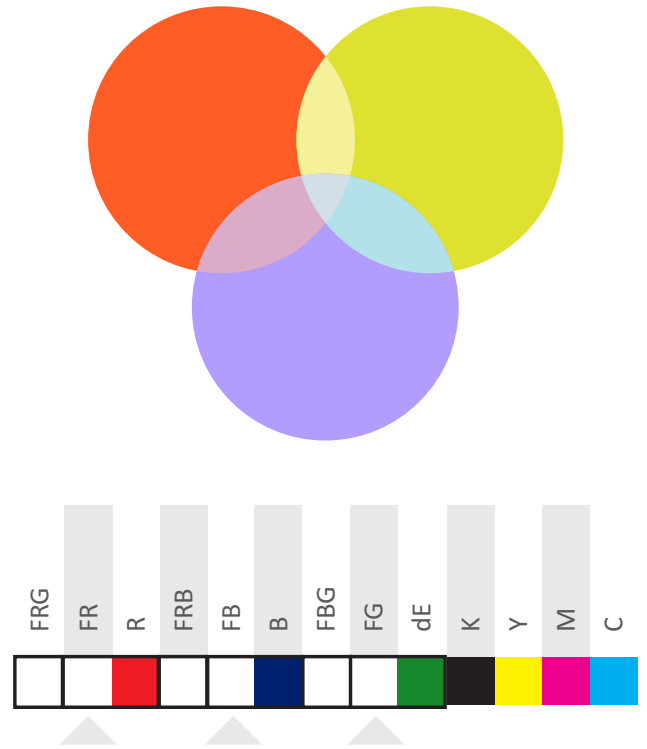
0 0.08 0.16 0.24 0.32 0.4 0.48 0.56 0.64 0.72 0.8 0.88 0.96

0 3.2 6.4 9.6 12.8 16 19.2 22.4 25.6 28.8 32 35.2 38.4 msec

Time R G B

Compare phosphorescence behaviour of various samples using the FLUODXConnect Software

DESIGN AND CONTROL



FLUORESCENT COLOR

FLUODXConnect v0.59.0.0

Interface Display FLUODX Language Help

FLUODX Configuration EXIT

BETA

Measurement Data Table Phosphorencence Graphic XYZ->RGB Table

Color Space WideGamutRGB XYZ Delete last line Clear Export Load

| RGB | R | G | B | X | Y | Z | x | y | L | a | b | C | h | Co |
|-----|-----|-----|--------|--------|--------|------|------|--------|--------|---------|--------|--------|-----|----|
| 77 | 255 | 93 | 189,49 | 295,63 | 133,87 | 0,31 | 0,48 | 150,49 | -91,31 | 52,05 | 105,11 | 150,32 | lim | |
| 255 | 255 | 78 | 253,93 | 284,78 | 114,28 | 0,39 | 0,44 | 148,42 | -18,24 | 60,56 | 63,25 | 106,76 | yel | |
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| 10 | 86 | 255 | 84,14 | 84,23 | 255,04 | 0,20 | 0,20 | 93,55 | 5,60 | -102,44 | 102,59 | 273,13 | blu | |
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| 255 | 255 | 202 | 263,15 | 287,64 | 232,47 | 0,34 | 0,37 | 148,97 | -12,35 | 1,98 | 12,50 | 170,89 | gre | |
| 0 | 0 | 0 | | | | | | | | | | | | |

Average: 194,333 213,239 182,740 0,344 0,349 129,303 -2,017 -1,016 79,441 177,613
Std.Dev: 60,934 102,551 92,235 0,110 0,099 26,720 69,454 60,939 34,361 99,619
Max: 263,070 309,130 297,630 0,550 0,480 152,980 99,400 60,560 110,750 324,080
Min: 84,140 84,230 33,700 0,200 0,200 93,550 -91,310 -102,440 12,540 26,170

Measure the visual color impression of various samples using the FLUODXConnect Software

