



LED TESTING PRODUCTS

Technology you can Trust

2025 Handbook of Products

Telephone: +353 61 330333—Fax: + 353 61 330452 —Website: www.feasa.ie

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Rev No 11.10 Date 19/02/2025

Feasa LED Analysers

Feasa LED Analysers are multichannel LED test tools which measure LED output for colour and intensity. Feasa test solutions are a popular choice for PCB production environments worldwide as they ensure the traceable measurement of individual LEDs. Fast, compact, robust and easy to integrate, the Feasa LED analyser is capable of testing 100 LEDs in less than 3 seconds.

Our products are used in markets such as Automotive, Aerospace, Medical Devices, Telecommunications, White Goods, Lighting and Computing.

The Feasa LED Analyser is supplied with an extensive suite of software to help with the integration of our system into your Test Station.

We provide DLLs and Labview drivers for use with VB, C++, C# and National Instruments Labview, or any software platform that can send or receive ASCII string commands. Test plans are also provided for Agilent 3070 and Genrad/Teradyne ICT platforms.

For more information about our products please visit www.feasa.ie.

Functional Analyser

The Feasa Functional LED Analyser is available in 3,5,6,10 and 20 channel configurations. Interface to the device is via USB or RS232 and has a Daisy Chain capability for up to 30 analysers. The dimensions of the 3,5,6 and 10 channel units are 86x57x50mm and the 20 channel unit is 127x57x55mm. Each channel has a fiber of 0.6m in length with a 1mm diameter inc. cladding and a bend radius of 10mm. The operating wavelength range is 450nm-650nm with a temp range of 0-50°C.



Available Interfaces: USB, Serial and Daisy Chain .

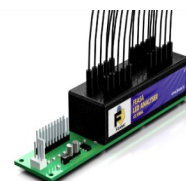
Output: Red, Green, Blue (RGB), Hue, Saturation, Intensity (HSI), Dominant Wavelength, CCT, CIE xy, CIE u'v' depending on interface used.

Drivers/ Software: DLL used for Testing, Programming examples in Labview, C++

Model Numbers: 20F, 10F, 6F, 5F, 3F

In Circuit Test Analyser

The Feasa In Circuit Test LED analyser is available in 3,5,6,10 and 20 Channel configurations. Interface to the device is via RS232 or a 20 pin Addressable Port. The unit has the capability to be triggered externally by an event. The dimensions of the 3,5,6,10 channel units are 100x29x50mm and the 20 channel is 140x29x50mm. Each Channel Fiber is 0.6m in length with a 1mm diameter and a bend radius of 10mm. The operating wavelength range is 450nm-650nm with a temp range of 0-50°C.



Available Interfaces: ICT Interfaces.

Output: Red, Green, Blue (RGB), Hue, Saturation, Intensity (HSI), Dominant Wavelength, CCT, CIE xy, CIE u'v' depending on interface used.

Drivers/Software: Test Models Agilent i3070, Test Code for Teradyne, DLL used for Testing, Programming examples in Labview, C++

Model Numbers: 20i, 10i, 6i, 5i, 3i

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Infrared Analyser

The Infrared LED Analyser measures the wavelength and relative power of Infrared LEDs and sources. It is ideal for Automotive, Security and Surveillance Applications.

The IR LED Analyser is available in 3, 10 and 20 channel configurations. Interface to the device is via USB or RS232 with 'Daisy Chain' functionality which allows multiple units to be connected together. The Infrared LED Analyser is available with glass (IR) or plastic (IRP) fibers. The operating wavelength range is 700nm-950nm (glass fiber model) and 700nm-900nm (plastic fiber model) with a temperature range of 0-50°C. The accuracy of the analyser is 700-750nm ± 30 nm, 751-900nm ± 10 nm, 901-950nm ± 20 nm. Repeatability is < 1 nm on wavelength and $< 1\%$ of intensity.



Available Interfaces: USB, Serial and Daisy Chain.

Drivers/ Software: DLL used for Testing, Programming examples in Labview, C++

Model Numbers: 20IR, 10IR, 3IR (700 – 950nm – Glass Fiber)

Model Numbers: 20IRP, 10IRP, 3IRP (700 – 900nm – Plastic Fiber)

Low Light Analyser

The Feasa Low Light LED Analyser was designed for measuring LED backlit switches and panels where the light is travelling through etched or painted plastic panelling; such as on car dashboards. This analyser tests for intensity, homogeneity, xy Chromaticity, Dominant Wavelength and CCT accurately, reliably and fast.

The Low Light Analyser is available in 3, 5, 6, and 10 channel configurations.

The dimensions of the 3, 5 and 6 channel units are 105x55x50mm; the 10 channel model is 145x55x50mm. Each channel fiber has a length of 0.6m, the fiber has a diameter of 2.2mm, including cladding, and a bend radius of 35mm.

Operating from a minimum luminance of 0.5cd/m² and a maximum luminance of 1000 cd/m² and temperature range of 0-50°C. Accurate to ± 0.01 @ $x=0.33$, $y=0.33$ with repeatability of ± 0.002 and $< 1\%$ of intensity.



Available Interfaces: USB, Serial, and Daisy Chain.

Software: Set up software provided; Sample command line interface C, C++; DLL, Labview support.

Model Numbers: 10A, 6A, 5A, 3A

High Brightness Analyser

The Feasa High Bright LED Analyser was developed to test LED automotive and matrix headlights in the production environment. The High Bright Analyser is capable of testing individual LEDs as close as 1.1mm center to center distance .

The High Bright Analyser is available in 3,5,10, and 20 channel configurations; with models for Functional (FB) and In Circuit Testing (IB).

Available Interfaces: USB, Serial and Daisy Chain.

Software: Set up software provided; Sample command line interface C, C++; DLL, Labview support.

Model Numbers (Functional): 20FB, 10FB, 5FB, 3FB

Model Numbers (In circuit Test): 20iB, 10iB, 5iB, 3iB



Feasa Legend Analyser

The Feasa Legend is a test solution for applications with large LED counts.

The Feasa Legend system consists of two component parts, a Hub and a Satellite Analyser. The Hub can be mounted in the Test Station or in the Test Fixture and can control up to 8 Satellite Analysers. Each Satellite Analyser can test up to 20 LEDs so a fully populated Hub can test up to 160 LEDs concurrently. Stable readings in Intensity and Common Colour Spaces: Hue, Saturation, Intensity (HSI), Dominant Wavelength, CCT, CIE xy Chromaticity.

The Legend has an operating wavelength range of 450-650nm, and temperature range of 0-50°C.

The Feasa Legend Hub dimensions are 130x55x30mm; the Legend Analyser dimensions are 120x29x50mm. Each channel has a fiber length of 0.6m, the fiber has a diameter of 1.0mm including cladding, and a bend radius of 10mm.

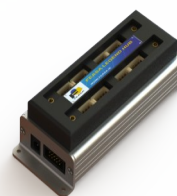
Drivers/ Software: DLL used for Testing, Programming examples in Labview, C++.

In addition Feasa also provides a number of programmes to allow for the most efficient and appropriate use of the analyser.

Output: Red, Green, Blue (RGB), Hue, Saturation, Intensity (HSI), Dominant Wavelength, CCT, CIE xy, CIE u'v' depending on interface used.

Drivers/ Software: DLL used for Testing, Programming examples in Labview, C++

Model Numbers: HUB, 20L, 10L



RGB Analyser

The Feasa RGB LED Analyser was designed for measuring RGB LEDs, RGB LED backlit switches and panels where the light is travelling through etched or painted plastic panelling; such as on car dashboards.

This analyser tests for intensity, homogeneity, xy Chromaticity, Dominant Wavelength and CCT accurately, reliably and quickly.

The RGB LED Analyser is available in 3,5,6 and 10 channel configurations.

The dimensions of the 3,5,6 channel units is 105x55x50mm; the 10 channel model is 145x55x50mm. Each channel fiber is polished and has a length of 0.6m, the fiber has a diameter of 2.2mm, including cladding, and a bend radius of 35 mm. Operating from a minimum luminance of 0.5cd/m² and a maximum luminance of 1000 cd/m² and temperature range of 0-50°C.

Accurate to ± 0.01 @ $x=0.33$, $y=0.33$ for monochromatic and RGB colours, with repeatability of ± 0.002 and $<1\%$ of intensity.



Available Interfaces: USB, Serial, and Daisy Chain.

Software: Set up software provided; Sample command line interface C, C++; DLL, Labview support.

Models: **3-RGB, 5- RGB, 6-RGB, 10-RGB**

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FEASA Optical Heads

Feasa Optical Heads are designed for use with the Feasa LED Analyser, to ensure stability when testing the intensity of LEDs. The range of Feasa Optical Heads available accommodate variations in LED diameter, LED intensity, the physical limitations of PCBs and fixturing restrictions. The robust and compact design delivers consistent and repeatable readings with a <10% intensity change over a 1mm placement of the LED. The Optical Head compensates for LED placement, facilitates repeatable intensity readings and reduces sensitivity to ambient light. Please refer to our [website](#) for more detailed information.

The following is a list of the most popular Optical Heads. Please contact the factory if you require another option that is not listed.

Optical Head Specification & Ordering Information

These Optical Heads (OH) have a Diameter of 2.54mm and are suitable for Led centre to centre distance of 2.8mm: They are used with 1mm Plastic Optical Fiber (POF). The Temperature range is 0C – 70C

Part No	Body Diameter - Imperial	Body Diameter - Metric	Drill Size in G10	Overall Length (inc. Screw holder if applicable)	Minimum Centre to Centre Distance	Fiber	Comments
OH-21	0.100 +/- .001	2.54 +/- 0.025 mm	2.5mm	1.000 +/- .005 in	2.8mm	POF 1mm	Standard Intensity Leds

These Optical Heads (OH) have a Diameter of 3mm and are suitable for Led centre to centre distance of 3.5mm: They are used with 1mm Plastic Optical Fiber (POF). The Temperature range is 0C – 70C

Part No	Body Diameter - Imperial	Body Diameter - Metric	Drill Size in G10	Overall Length (inc. Screw holder if applicable)	Minimum Centre to Centre Distance	Fiber	Comments
OH-1	0.120 +/- .001	3.022 – 3.048 mm	3.02mm	40mm	3.5mm	POF 1mm	Standard Intensity Leds
OH-1A	0.120 +/- .001	3.022 – 3.048 mm	3.02mm	40mm	3.5mm	POF 1mm	High Intensity Leds
OH-24	0.120 +/- .001	3.022 – 3.048 mm	3.02mm	40mm	3.5mm	POF 1mm	Standard Intensity. 90°

These Optical Heads (OH) have a Diameter of 3.55mm and are suitable for Led centre to centre distance of 4mm: They are used with 1mm Plastic Optical Fiber (POF). The Temperature range is 0C – 70C

Part No	Body Diameter - Imperial	Body Diameter - Metric	Drill Size in G10	Overall Length (inc. Screw holder if applicable)	Minimum Centre to Centre Distance	Fiber	Comments
OH-5	0.141 +/- .001	3.556 – 3.607 mm	3.55mm	49mm	4mm	POF 1mm	Standard Intensity Leds
OH-5S	0.141 +/- .001	3.556 – 3.607 mm	3.55mm	28mm	4mm	POF 1mm	Short (OH5)

These Optical Heads (OH) have a Diameter of 4.55mm and are suitable for Led centre to centre distance of 5mm: They are used with 1mm Plastic Optical Fiber (POF). The Temperature range is 0C – 70C

Part No	Body Diameter - Imperial	Body Diameter - Metric	Drill Size in G10	Overall Length (inc. Screw holder if applicable)	Minimum Centre to Centre Distance	Fiber	Comments
OH-3	0.180 +/- .002	4.521 – 4.623 mm	4.55mm	50mm	5mm	POF 1mm	Standard Intensity Leds
OH-2	0.180 +/- .002	4.521 – 4.623 mm	4.55mm	30mm	5mm	POF 1mm	Short (OH3)
OH3-RGB	0.180 +/- .002	4.521 – 4.623 mm	4.55mm	50mm	5mm	POF 1mm	RGB Led Test
OH-4	0.180 +/- .002	4.521 – 4.623 mm	4.55mm	59mm	5mm	POF 1mm	90°
OH-4S	0.180 +/- .002	4.521 – 4.623 mm	4.55mm	39mm	5mm	POF 1mm	Short 90°
OH-23	0.180 +/- .002	4.521 – 4.623 mm	4.55mm	51mm	5mm	POF 1mm	Super High Bright Intensity
OH-33	0.180 +/- .002	4.521 – 4.623 mm	4.55mm	50mm	5mm	POF 1mm	High Bright Intensity

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These Optical Heads (OH) have a Diameter of 12mm and are suitable for Led centre to centre distance of 13mm: They are used with 1mm Plastic Optical Fiber (POF). The Temperature range is 0C – 70C

Part No	Body Diameter - Imperial	Body Diameter - Metric	Drill Size in G10	Overall Length (inc. Screw holder if applicable)	Minimum Centre to Centre Distance	Fiber	Comments
OH-30	0.472 +/- .001	11.80 – 12.02 mm	12mm	57mm	13mm	POF 1mm	Large Diameter Led

These Optical Heads (OH) are suitable for Leds in High Temperature Environments: They are used with 1.1mm Glass Optical Fiber. The Temperature range is -65C to +125C. They are Recommended to be used with the Led Life Tester Analyser.

Part No	Body Diameter - Imperial	Body Diameter - Metric	Drill Size in G10	Overall Length (inc. Screw holder if applicable)	Minimum Centre to Centre Distance	Fiber	Comments
OH-7LT	0.180 +/- .002	4.521 – 4.623 mm	4.55mm	40mm	5mm	Glass 1.1mm	Standard Intensity Leds
OH-17LT	0.180 +/- .002	4.521 – 4.623 mm	4.55mm	40mm	5mm	Glass 1.1mm	RGB Led Test
OH-10G-xxx	0.037 +/- .0025	0.876 – 1.003 mm	1.00mm	52mm + Fiber xxx cm	1.5mm	Glass 1.1mm	High Bright Int.

These Optical Heads (OH) have a Diameter of 4.55mm and are suitable for Led centre to centre distance of 5mm: They are used with 1.1mm Glass Optical Fiber. The Temperature range is 0C – +70C. They are Recommended to be used with the Infra Red Led Analyser for Wavelength up to 950nm

Part No	Body Diameter - Imperial	Body Diameter - Metric	Drill Size in G10	Overall Length (inc. Screw holder if applicable)	Minimum Centre to Centre Distance	Fiber	Comments
OH8-IR	0.180 +/- .002	4.521 – 4.623 mm	4.55mm	50mm	5mm	Glass / POF	Standard IR Leds
OH8A-IR	0.180 +/- .002	4.521 – 4.623 mm	4.55mm	51.5mm	5mm	Glass / POF	High Bright IR Leds

These Optical Heads (OH) have a Diameter of 8.00mm and are suitable for Led centre to centre distance of 9mm: They are used with 1mm Plastic Optical Fiber (POF). The OH-6S has a diameter of 10.2mm and a centre to centre distance of 11mm. The Temperature range is 0C – 70C.

Part No	Body Diameter - Imperial	Body Diameter - Metric	Drill Size in G10	Overall Length (inc. Screw holder if applicable)	Minimum Centre to Centre Distance	Fiber	Comments
OH-6	0.315 +/- .001	7.975 – 8.026 mm	8.00mm	51mm	9mm	POF 1mm	High Bright Intensity Led
OH-6S	0.400 +/- .005	10.2 +/- 0.15 mm	10.2mm	34.5mm	11mm	POF 1mm	Short (OH-6) PVC
OH-6N	0.315 +/- .001	7.975 – 8.026 mm	8.00mm	50mm	9mm	POF 1mm	Standard Intensity Led
OH6-RGB	0.315 +/- .001	7.975 – 8.026 mm	8.00mm	50mm	9mm	POF 1mm	RGB Led Test
OH-26	0.315 +/- .001	7.975 – 8.026 mm	8.00mm	52mm	9mm	POF 1mm	Super High Bright Int.

These Optical Heads (OH) have a Diameter of 6.55mm and are suitable for Led centre to centre distance of 7mm: They are used with 1mm Plastic Optical Fiber (POF). The Temperature range is 0C – 70C. They are recommended for use in an RF Environment.

Part No	Body Diameter - Imperial	Body Diameter - Metric	Drill Size in G10	Overall Length (inc. Screw holder if applicable)	Minimum Centre to Centre Distance	Fiber	Comments
OH-9RF	0.257 +/- .002	6.25 – 6.55 mm	6.55mm	50mm	7mm	POF 1mm	RF Testing
OH-19RF	0.257 +/- .002	6.25 – 6.55 mm	6.55mm	35mm	7mm	POF 1mm	RF Testing 90°

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This Optical Heads (OH) have been developed for specific Customer Requirements

Part No	Body Diameter - Imperial	Body Diameter - Metric	Drill Size in G10	Overall Length (inc. Screw holder if applicable)	Minimum Centre to Centre Distance	Fiber	Comments
OH-7D	0.180 +/- .002	4.521 – 4.623 mm	4.55mm	40mm + 2 Fibers 60cm	5mm	Optional	Dual fiber

These Optical Heads (OH) have a Diameter of 0.9mm - 1.00mm and are suitable for Leds centre to centre distance of 1.5mm: They are pre-fitted with 60cm long 1mm Plastic Optical Fiber (POF). The Temperature range is 0C – 70C for the OH-10 & OH-11. The Temperature range is -65C – +125C for the OH-10G-XX. They are recommended for testing High Bright Leds such as headlights and rear light of cars.

Part No	Body Diameter - Imperial	Body Diameter - Metric	Drill Size in G10	Overall Length (inc. Screw holder if applicable)	Minimum Centre to Centre Distance	Fiber	Comments
OH-10	0.038 +/- .0025	0.914 – 1.016 mm	1.00mm	52mm + Fiber 60cm	1.5mm	POF 1mm	High Bright Int.
OH-10G-xxx	0.038 +/- .0025	0.914 – 1.016 mm	1.00mm	52mm + Fiber xxx cm	1.5mm	Glass 1.1mm	High Bright Int. With Glass Fiber
OH-11	0.0357 +/- .0003	0.899 – 0.914 mm	0.90mm	35mm + Fiber 60cm	1.1mm	POF 1mm	High Bright Int.

These Optical Heads are recommended for testing with the Low Light and RGB Analyser Range. They require 2.2mm Plastic Optical Fiber (POF) to be glued in place. The Temperature range is 0C – 70C.

Part No	Body Diameter - Imperial	Body Diameter - Metric	Drill Size in G10	Overall Length (inc. Screw holder if applicable)	Minimum Centre to Centre Distance	Fiber	Comments
OH-12	0.180 +/- .002	4.521 – 4.623 mm	4.55mm	29mm	5mm	POF 2.2mm	Short (OH13)
OH-13	0.180 +/- .002	4.521 – 4.623 mm	4.55mm	37mm	5mm	POF 2.2mm	Low Light Analyser
OH-14	0.180 +/- .002	4.521 – 4.623 mm	4.55mm	45mm	5mm	POF 2.2mm	90°
OH-14S	0.180 +/- .002	4.521 – 4.623 mm	4.55mm	32mm	5mm	POF 2.2mm	Short (OH14)

They are designed to be used with the Feasa Low Light and RGB Analyser Range. These Optical Heads (OH) have a Diameter of 8.00mm and are suitable for Led centre to centre distance of 9mm: They use 2.2mm Plastic Optical Fiber (POF). The Temperature range is 0C – 70C.

Part No	Body Diameter - Imperial	Body Diameter - Metric	Drill Size in G10	Overall Length (inc. Screw holder if applicable)	Minimum Centre to Centre Distance	Fiber	Comments
OH-16						POF 2.2mm	Replaced by OH-36
OH-31	0.472 +/- .001	11.80 – 12.02 mm	12mm	54mm	13mm	POF 2.2mm	Large Diameter Led
OH-34	0.315 +/- .001	7.975 – 8.026 mm	8.00mm	51mm	9mm	POF 2.2mm	For use with RGB Analyser, 90°, Low Intensity
OH-34A	0.315 +/- .001	7.975 – 8.026 mm	8.00mm	51mm	9mm	POF 2.2mm	For use with RGB Analyser, 90°, High Intensity
OH-36	0.315 +/- .001	7.975 – 8.026 mm	8.00mm	51mm	9mm	POF 2.2mm	For use with RGB Analyser, Low Intensity
OH-36A	0.315 +/- .001	7.975 – 8.026 mm	8.00mm	51mm	9mm	POF 2.2mm	For use with RGB Analyser, Low Intensity Analyser

Feasa continues to develop Optical Heads for new applications. We can provide specialised customer solutions when possible. Please contact Feasa if you require advice or assistance on Optical Head design.

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FEASA LED Spectrometer

The Feasa LED Spectrometer System was designed to measure the absolute colour and intensity of LEDs that are populated on a PCB. Various intensity and colour measurements made by the Feasa LED Spectrometer can be used to produce a 'golden board' which can be used as a reference for the Feasa LED Analyser. All measurements are traceable to International Standards.

It operates through a ASCII command structure and can be controlled by the accompanying software or end user programs. All measurements from the Spectrometer can be used to train the Feasa LED Analyser.

The Spectrometer has a spectral range of 380nm to 780nm with a minimum interpolated wavelength resolution of 0.1nm and an operating temperature range of 0-40°C. Traceable measurements can be obtained for Luminous Flux (lumens), Luminous Intensity (mcd) , Luminance (cd/m²) , Chromaticity and Wavelength with automatic and custom exposure control. A range of specialised accessories have been developed for use with the Feasa LED Spectrometer.

Ideal Measurement Instrument for RGB / RGBW / RGBA LEDs

Daisy Chain bus to allow multiple Spectrometers to be connected via a single USB or RS232 connection

PWM capture mode for Pulse Width Modulated LEDs

Sequence Capture Functionality

External Trigger

The Spectrometer connects to accessories via an armoured 0.6m cable

Communication via RS232 or USB

Feasa software included as standard.

Mounting Brackets provided for easy fixturing.



Optional Accessories	Used with the Feasa LED Spectrometer to generate absolute and traceable measurements for :
Feasa Luminance Head 	Chromaticity and Luminance Part Number: LU04 (4mm) LU07 (7mm)
Feasa Luminous Intensity Head 	Chromaticity, Luminance and Radiant Intensity. Part Number: CD04 (4mm) CD08 (8mm)
Feasa Integrating Spheres 	Chromaticity, Luminous Flux and Power Part Number: SP13 (.1 to 100 lumens) SP23 (50 to 2500 lumens)

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