

## DT-40L / DT-40G / DT-40F Pyrometer Series

Self Contained, 2 Wire Infrared Temperature Sensors



- Digital 2-wire loop powered, self contained Pyrometer
- For use with a wide array of applications
- Selection of temperature ranges from  $-40^{\circ}\text{C}$  to  $1400^{\circ}\text{C}$
- Integrated USB interface for sensor parameter settings
- Built-in peak picker
- Robust stainless steel housing

The Innovative design of Process Sensors Models; DT-40L, DT-40G and DT-40F with digital technology, are compact, rugged and based on simplicity of installation.

Used in a 2 wire loop powered configuration the sensor's 4-20 mA linear output signal can be easily integrated into existing instrumentation for recording and process control.

The rugged stainless steel housing and companion protective stainless steel, water cooling jacket with air purge ensures reliable operation in harsh industrial environments.

Software is provided for IR sensor adjustments, temperature measuring and data acquisition evaluation.

### Typical applications:

- Glass and ceramics
- Ovens and dryers
- Thermoforming
- Aggregate, powders and organics
- Paper, packaging and food
- Textiles, rubber and plastics  
>100 mils
- Furnace applications

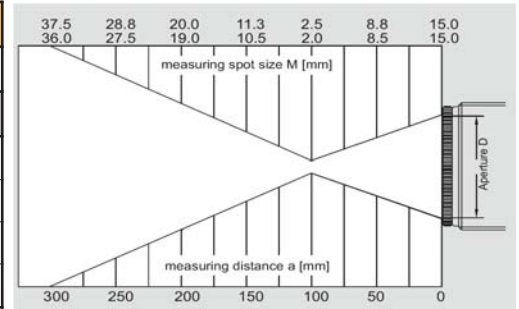
The DT 40 pyrometer series with fixed focus optics offers fast response times, small spot sizes and a choice of wavelengths for a variety of applications.

## TECHNICAL SPECIFICATIONS FOR DT-40L / DT-40G / DT-40F

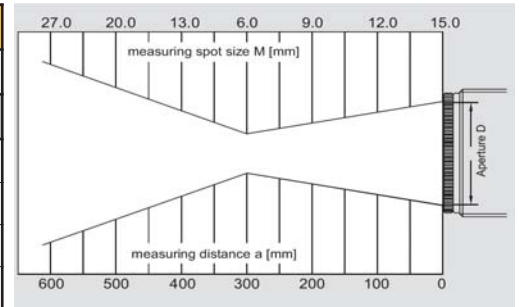
TYPE	DT 40L	DT 40G	DT 40G	DT 40F
<b>Technical Data</b>				
Temperature range	-40 to 1000°C	100 to 1200°C	200 to 1400°C	300 to 1300°C
Sub temperature range	adjustable within overall temperature range, minimum span 51°C			
Spectral range	8 μm to 14 μm	5.14 μm	5.14 μm	3.9 μm
Optics (refer to table)	several fixed optics (tyupe V, VI,VII and VIII), aperature diameter 0.64" (16mm)			
Distance ratio	> 50:1			
Measurement uncertainty	1.0% of measurement value 1K (T <sub>U</sub> =23°C, ε =1,t95 =1s)			
Reproductibility	0.5% of measurement value (T <sub>U</sub> =23°C, ε =1,t95 =1s)			
Response time (t95)	< 60ms, adjustable up to 100s			
Emissivity	adjustable, 0.20 to 1.00			
Peak Picker	maximum value storage, adjustable via interface			
Output	4...20 mA, temperature linear, max. burden: 700Ω at 24V			
Interface	galvanically isolated USB interface			
Software	PSC Spot for Windows®			
Aiming	Laser aiming light (accessory)			
Parameters	adjustable via interface and software (emissivity, response time, temperature unit °C or °F, storage, sub range)			
Power supply	24V DC ± 25%			
Power consumption	max 0.6 W			
Operating temperature	0°C to 70°C			
Storage temperature	-20°C to 70°C			
Weight	approx 395 g			
Dimensions	thread M40 X 1.5, length 140mm			
Housing	stainless steel with plug connector			
Safety class	IP 65 (DIN 40 050)			
CE-Symbol	according to EU regulations (EN 50 011)			
Scope of delivery	DT 40x, manual, inspection sheets, PSC Spot for Windows® (without connecting cable, please order separately)			
<b>Accessories, mechanical, electrical and optical</b>				
Connecting cable 3-pin	Length 2m, 5m, 10m, 15m, 20m, 25m or 30m / Feet 6.5', 16', 33', 49', 65', 82', 98'			
USB-connecting cable	Length 1.8m, screened			
Power supply	24V DC/0.6A			
Mounting angle	fixed or adjustable			
Ball and socket mounting	stainless steel, adjustable			
Air purge unit	stainless steel, air pressure 0.2 bis 1.0 bar, oil free			
Water cooling jacket	with integrated air purge and mounting angle			
Vacuum flange	KF 16, with Quartz CaF <sub>2</sub> -, or ZnSe window			
Laser aiming light	adapter (battery operated)			

## Optic types V, VI, VII and VIII

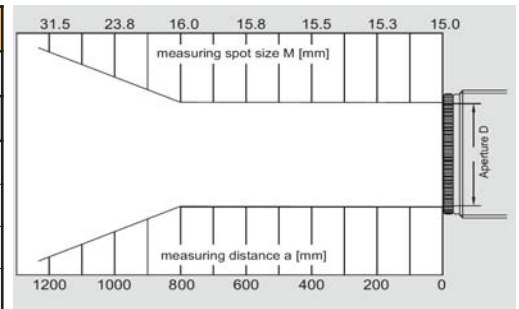
Optics V (focussed at a = 100mm measuring distance)							
Measuring distance a in mm	0	50	<b>100</b>	150	200	250	300
Measuring field diameter M in mm							
DT 40L (-40°C to 1000°C)	15	8.5	<b>2.0</b>	10.5	19.0	27.5	36.0
DT 40G (100°C to 1200°C)	15	8.8	<b>2.5</b>	11.3	20.0	28.8	37.5
DT 40G (200°C to 1400°C)	15	8.8	<b>2.5</b>	11.3	20.0	28.8	37.5
DT 40F (300°C to 1300°C)	15	8.8	<b>2.5</b>	11.3	20.0	28.8	37.5



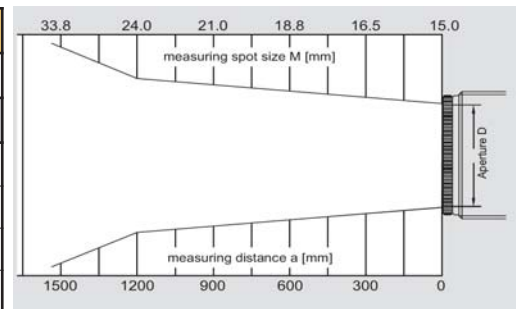
Optics VI (focussed at a = 300mm measuring distance)							
Measuring distance a in mm	0	100	200	<b>300</b>	400	500	600
Measuring field diameter M in mm							
DT 40L (-40°C to 1000°C)	15	12.0	9.0	<b>6.0</b>	13.0	20.0	27.0
DT 40G (100°C to 1200°C)	15	12.0	9.0	<b>6.0</b>	13.0	20.0	27.0
DT 40G (200°C to 1400°C)	15	12.0	9.0	<b>6.0</b>	13.0	20.0	27.0
DT 40F (300°C to 1300°C)	15	12.0	9.0	<b>6.0</b>	13.0	20.0	27.0



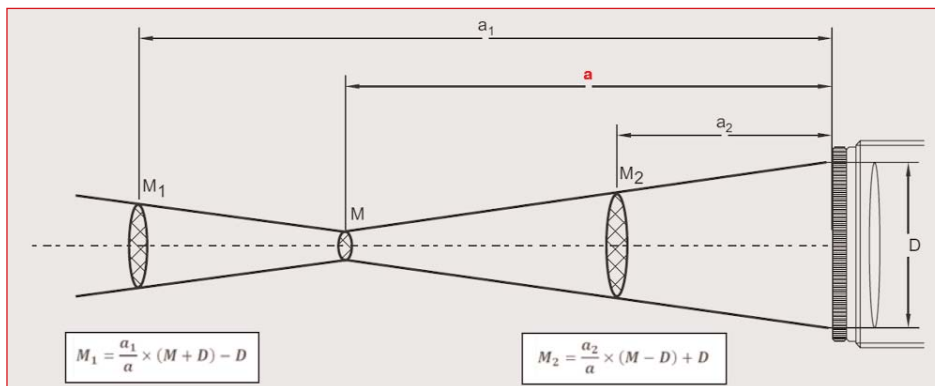
Optics VII (focussed at a = 800mm measuring distance)							
Measuring distance a in mm	0	200	400	600	<b>800</b>	1000	1200
Measuring field diameter M in mm							
DT 40L (-40°C to 1000°C)	15	15.3	15.5	15.8	<b>16.0</b>	23.8	31.5
DT 40G (100°C to 1200°C)	15	15.3	15.5	15.8	<b>16.0</b>	23.8	31.5
DT 40G (200°C to 1400°C)	15	15.3	15.5	15.8	<b>16.0</b>	23.8	31.5
DT 40F (300°C to 1300°C)	15	15.3	15.5	15.8	<b>16.0</b>	23.8	31.5



Optics VIII (focussed at a = 1200mm measuring distance)							
Measuring distance a in mm	0	100	300	600	900	<b>1200</b>	1500
Measuring field diameter M in mm							
DT 40L (-40°C to 1000°C)	15	15.0	16.5	18.8	21.0	<b>24.0</b>	33.8
DT 40G (100°C to 1200°C)	15	15.0	16.5	18.8	21.0	<b>24.0</b>	33.8
DT 40G (200°C to 1400°C)	15	15.0	16.5	18.8	21.0	<b>24.0</b>	33.8
DT 40F (300°C to 1300°C)	15	15.0	16.5	18.8	21.0	<b>24.0</b>	33.8

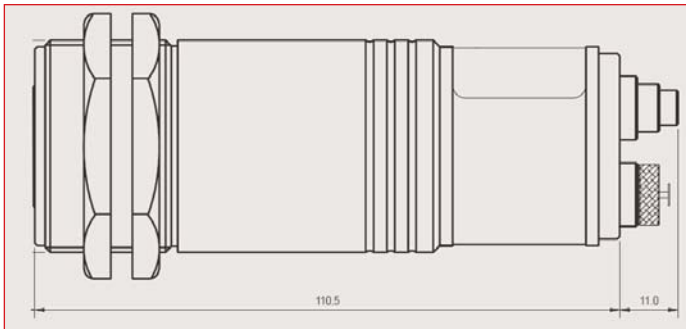


### Field of view (for) calculations

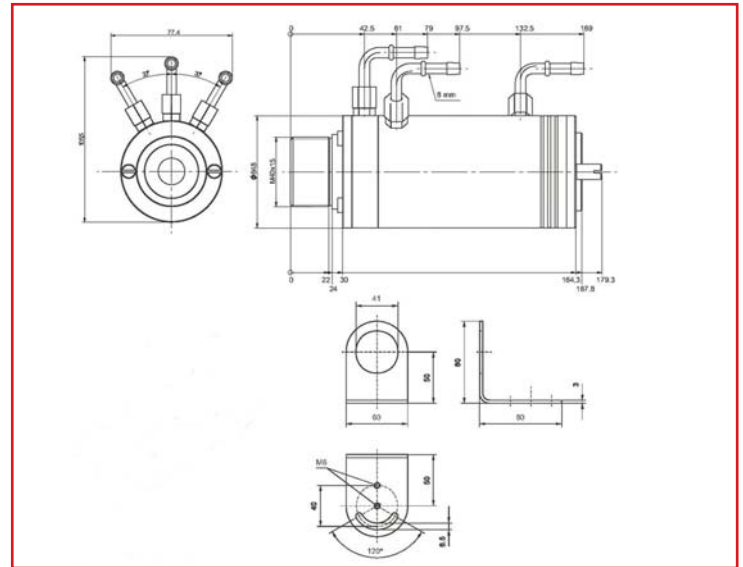


## Dimensions

### Pyrometer



### Cooling Jacket & Air Purge



## Accessories

Adjustable mounting bracket  
PN#3310A21011



Cooling jacket with air purge  
PN#3310A23010



Laser aiming light adapter  
PN#310A33010



Air purge unit  
PN#3310A22010



Digital Display  
PN#TIC500



Power supply 24 VDC (din rail)  
PN#950-004



## PROCESS SENSORS CORPORATION

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