

## P/N: 83213-0102

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### Website

<http://www.flir.com>

### Customer support

<http://support.flir.com>

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General description	
<p>The FLIR A35 has features and functions that make it the natural choice for anyone who uses PC software to solve problems and for whom 320 × 256 pixel resolution is sufficient.</p> <p>Among its main features are GigE Vision and GenICam compliance, which makes it plug-and-play when used with software packages such as IMAQ Vision and Halcon.</p>	
<p>Key features:</p> <ul style="list-style-type: none"> <li>• Very affordable.</li> <li>• Compact.</li> <li>• GigE Vision and GenICam compliant.</li> <li>• GigE Vision lockable connector.</li> <li>• PoE (power over Ethernet).</li> <li>• 8-bit 320 × 256 pixel images streamed at 60 Hz, signal linear.</li> <li>• 14-bit 320 × 256 pixel images streamed at 60 Hz, signal and temperature linear.</li> <li>• High frame rates (60 Hz).</li> <li>• Synchronization between cameras possible.</li> <li>• 1x+1x GPIO.</li> <li>• Compliant with any software that supports GenICam, including National Instruments IMAQ Vision, Stemmers Common Vision Blox, and COGNEX Vision Pro.</li> </ul>	
<p>Typical applications:</p> <ul style="list-style-type: none"> <li>• Automation and thermal machine vision.</li> <li>• Entry level "high-speed" R&amp;D.</li> </ul>	
Imaging and optical data	
IR resolution	320 × 256 pixels
Thermal sensitivity/NETD	< 0.05°C @ +30°C (+86°F) / 50 mK
Field of view (FOV)	25° × 19°
Minimum focus distance	7.6 cm (3.0 in.)
Focal length	13 mm (0.51 in.)
Spatial resolution (IFOV)	1.308 mrad
F-number	1.25
Image frequency	60 Hz
Focus	Fixed

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<b>Detector data</b>	
Detector type	Focal plane array (FPA), uncooled VOX microbolometer
Spectral range	7.5–13 $\mu\text{m}$
Detector pitch	17 $\mu\text{m}$
Detector time constant	Typical 12 ms
<b>Measurement</b>	
Object temperature range	<ul style="list-style-type: none"> <li>–25 to +100°C (–13 to 212°F)</li> <li>–40 to +550°C (–40 to +1022°F)</li> </ul>
Accuracy	$\pm 5^\circ\text{C}$ ( $\pm 9^\circ\text{F}$ ) or $\pm 5\%$ of reading
<b>Measurement analysis</b>	
Atmospheric transmission correction	Automatic, based on inputs for distance, atmospheric temperature and relative humidity
Optics transmission correction	Automatic, based on signals from internal sensors
Emissivity correction	Variable from 0.5 to 1.0
Reflected apparent temperature correction	Automatic, based on input of reflected temperature
External optics/windows correction	Automatic, based on input of optics/window transmission and temperature
Measurement corrections	Global object parameters
<b>Ethernet</b>	
Ethernet	Control and image
Ethernet, type	Gigabit Ethernet
Ethernet, standard	IEEE 802.3
Ethernet, connector type	RJ-45
Ethernet, communication	GigE Vision ver. 1.2 Client API GenICam compliant
Ethernet, image streaming	8-bit monochrome @ 60 Hz <ul style="list-style-type: none"> <li>Signal linear/ DDE</li> <li>Automatic/ Manual</li> <li>Flip H&amp;V</li> </ul> 14-bit 320 x 256 pixels @ 60 Hz <ul style="list-style-type: none"> <li>Signal linear/ DDE</li> <li>Temperature linear</li> </ul> GigE Vision and GenICam compatible
Ethernet, power	Power over Ethernet, PoE IEEE 802.3af class 0 Power
Ethernet, protocols	TCP, UDP, ICMP, IGMP, DHCP, GigEVision
<b>Digital input/output</b>	
Digital input, purpose	General purpose
Digital input	1x opto-isolated, "0" <1.2 VDC, "1" = 2–25 VDC.
Digital output, purpose	General purpose output to ext. device (programmatically set)

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<b>Digital input/output</b>	
Digital output	1× opto-isolated, 2–40 VDC, max. 185 mA
Digital I/O, isolation voltage	500 VRMS
Digital I/O, supply voltage	2–40 VDC, max. 200 mA
Digital I/O, connector type	12-pole M12 connector (shared with Digital synchronization and External power)
Synchronization in, purpose	Frame synchronization in to control camera
Synchronization in	1×, non-isolated
Synchronization in, type	LVC Buffer @3.3V, "0" <0.8 V, "1">2.0 V.
Synchronization out, purpose	Frame synchronization out to control another FLIR Ax5 camera
Synchronization out	1×, non-isolated
Synchronization out, type	LVC Buffer @ 3.3V, "0"=24 MA max, "1"= –24 mA max.
Digital synchronization, connector type	12-pole M12 connector (shared with Digital I/O and External power)
<b>Power system</b>	
External power operation	12/24 VDC, < 3.5 W nominal < 6.0 W absolute max.
External power, connector type	12-pole M12 connector (shared with Digital I/O and Digital Synchronization )
Voltage	Allowed range 10–30 VDC
<b>Environmental data</b>	
Operating temperature range	–15°C to +60°C (+5°F to +140°F)
	<div style="border: 1px solid black; padding: 5px;"> <p> <b>NOTE</b></p> <p>The operating temperature range assumes that the camera is mounted on the base support (included in the package) or a similar type of heatsink.</p> </div>
Storage temperature range	–40°C to +70°C (–40°F to +158°F)
Humidity (operating and storage)	IEC 60068-2-30/24 h 95% relative humidity +25° C to +40°C (+77°F to +104°F)
EMC	<ul style="list-style-type: none"> <li>• EN 61000-6-2 (Immunity)</li> <li>• EN 61000-6-3 (Emission)</li> <li>• FCC 47 CFR Part 15 Class B (Emission)</li> </ul>
Encapsulation	IP 40 (IEC 60529) with base support mounted
Shock	25 g (IEC 60068-2-27)
Vibration	2 g (IEC60068-2-6) and MIL-STD810G
<b>Physical data</b>	
Camera size (L × W × H)	104.1 × 49.6 × 46.6 mm (4.1 × 1.9 × 1.8 in.)
Tripod mounting	1 × UNC ¼"-20 (with Base support accessory, included in the delivery box )

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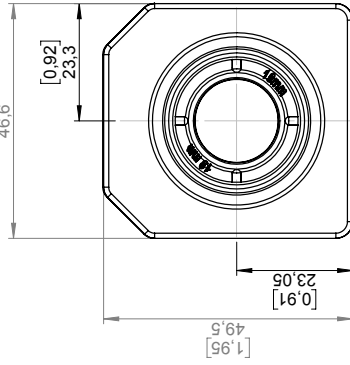
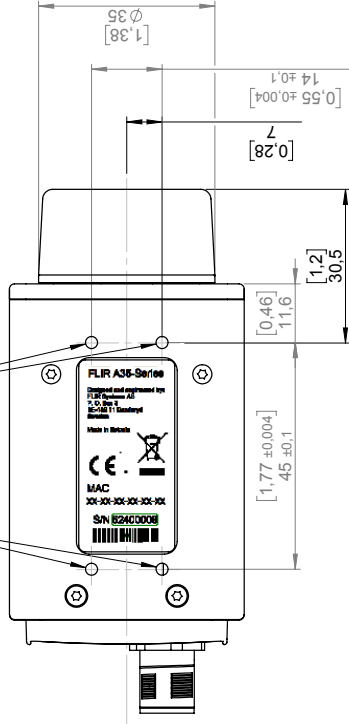
Physical data	
Base mounting	4 × M3 thread mounting holes (bottom)
Housing material	Magnesium and aluminum
Shipping information	
Packaging, type	Cardboard box
List of contents	<ul style="list-style-type: none"><li>• Infrared camera with lens</li><li>• Base support</li><li>• Focus adjustment tool</li><li>• Printed documentation</li></ul>
EAN-13	7332558013090
UPC-12	845188014858
Country of origin	Sweden

### Supplies & accessories:

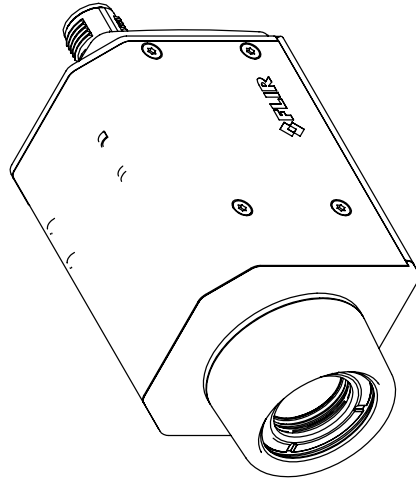
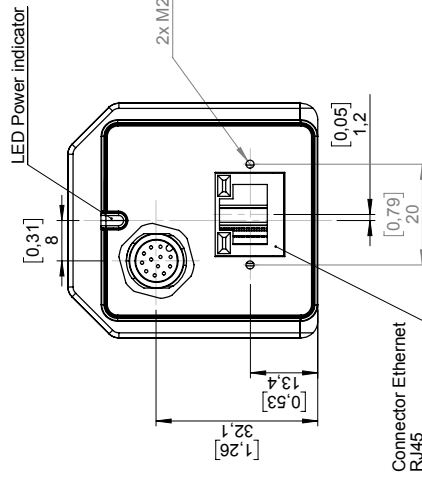
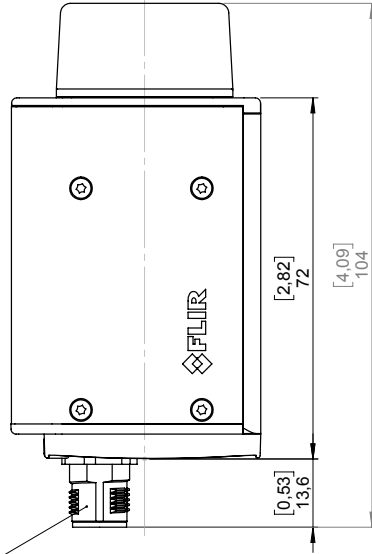
- T951004ACC; Ethernet cable CAT6, 2 m/6.6 ft.
- T198349; Base support
- T198348; Cable kit Mains (UK,EU,US)
- T127605ACC; Cable M12 Pigtail
- T127606ACC; Cable M12 Sync
- T199698; Environmental housing for Ax5
- T199356; FLIR Ax5 accessory starter kit
- T198342ACC; Focus adjustment tool
- T911183; Gigabit PoE injector 16 W, with multi-plugs
- T198392; Table stand kit
- T198594ACC; Transport case Ax5
- T198584; FLIR Tools
- T198583; FLIR Tools+ (download card incl. license key)
- T199233; FLIR Atlas SDK for .NET
- T199234; FLIR Atlas SDK for MATLAB

Basic dimensions  
for cameras with  
focal length:  
f= 7,5 mm  
f= 9 mm  
f=13 mm  
f=19 mm

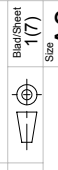
4x M3  
Depth max 4 mm



Connector GP I/O  
M12 12-pin



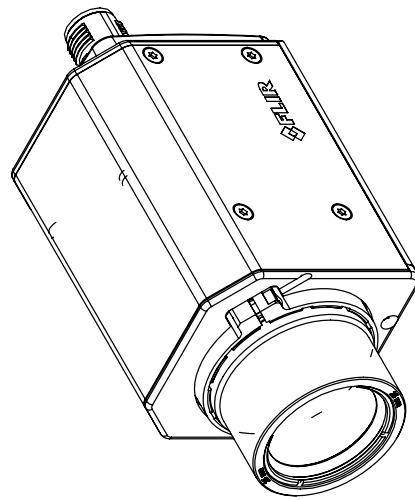
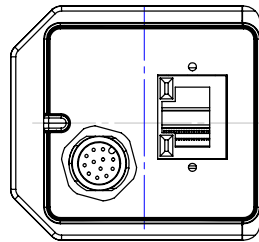
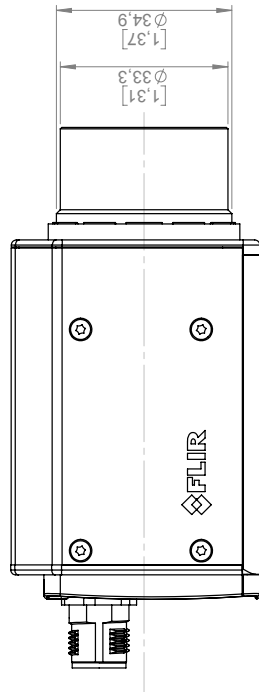
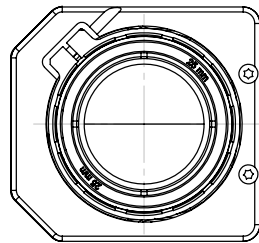
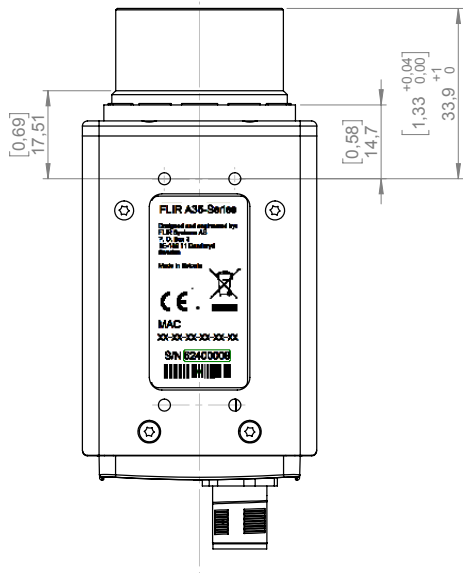
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Ändrad av/Modified by		Ytbehandling/Surface treatment	
P. MARCUS		Ra	
Datum/Date		Kontroll/Check	
2015-12-14		-	
Ändrad av/Modified		Ytämnhet/Roughness	
2016-10-18		Ra	
Benämning/Denomination		Skala/Scale	
Basic dimensions Ax5 w. flag shutter f=7,5 mm to f=100 mm		1:1	
Dir: ej ämnad ändras/Unless otherwise stated		Bladd/Sheet	
Genet ISO 2768-mK		1(7)	
Ultragång ut/Excerpt from ISO 2768-m		Size	
0,5-6 ±0,1 Hållradier		A3	
6,3-320 ±0,2 Fillet radi		Rev	
120)-400 ±0,5 Kanter brutna		-002	
(400)-1000 ±0,8 Edges broken		Ritning/Drawing No	
		T129297	



Bladd/Sheet  
1(7)  
Size  
A3  
Rev  
-002  
Ritning/Drawing No  
T129297



Basic dimensions:  
 Camera with focal length  
 f=25 mm IR lens.  
 Only dimensions valid for  
 this IR lens.  
 For all other dimensions see pages  
 1 and 2.



Konstr/Drawing	P. MARCUS	Datum/Date	2015-12-14	Kontroll/Check	Material
Ändrad av/Modified by	P. MARCUS	Ändrad/Modified	2016-10-18	Ytjämnhet/Roughness	Ytbehandling/Surface treatment
Dir. ej annat angavs/Unless otherwise stated		Benämning/Denomination		µm	
Gen. tol. ISO 2768-mK					
UTdrag ur/Excerpt from ISO 2768-m					
0,50	40,1	Hålsläpplader			
(30)-120	40,3	Fläkt. radi			
(20)-400	40,5	Kant. brutna			
(40)-1600	40,6	Är. botten			

Basic dimensions Ax5 w. flag shutter  
 f=7,5 mm to f=100 mm

<b>FLIR</b>	Blad/Sheet	3(7)
	Scale/Scale	1:1
	ArtNo.	
	Rev	
	Ritm nr/Drawing No	T129297
		-002

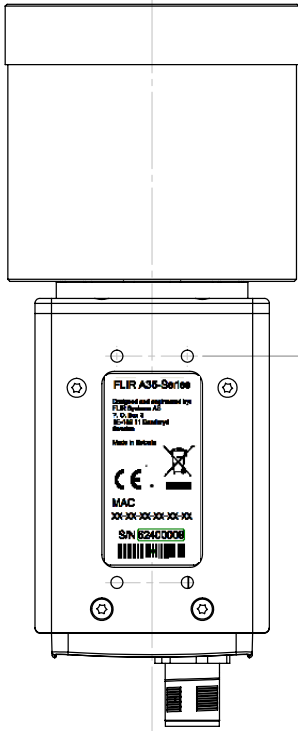
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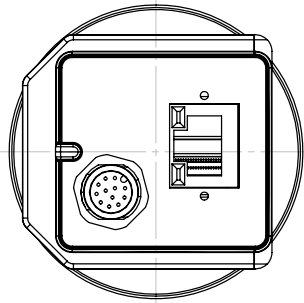




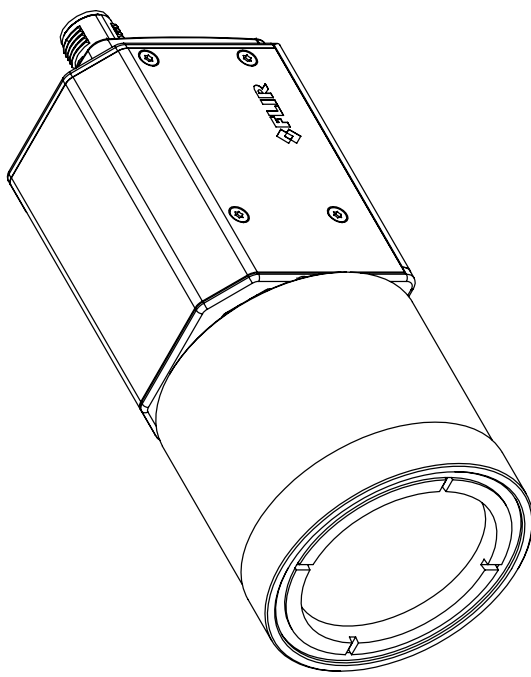
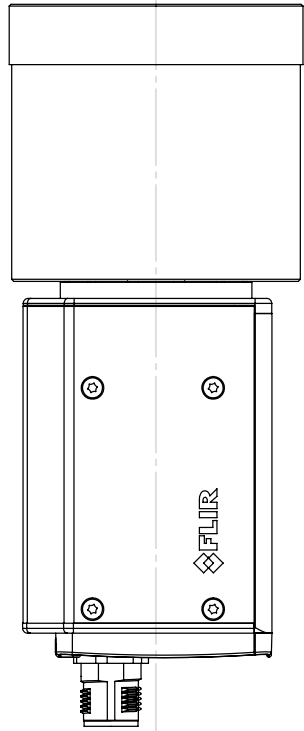
Basic dimensions:  
 Camera with focal length  
 f=50 mm IR lens.  
 Only dimensions valid for  
 this IR lens.  
 For all other dimensions see pages  
 1 and 2.



$[ \begin{matrix} +0,04 \\ 2,74 & 0,00 \\ & +1 \end{matrix} ]$   
 69,6 0



$[ \begin{matrix} +0,04 \\ 2,3 & 0,00 \\ & +1 \end{matrix} ]$   
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Konstr/Drawing	P. MARCUS	Datum/Date	2015-12-14	Kontroll/Check	-	Material	-
Ändrad av/Modified by	P. MARCUS	Ändrad/Modified	2016-10-18	Ytjämnhet/Roughness	Ra	Ytbehandling/Surface treatment	
Dir. ej annat angavs/Unless otherwise stated		Benämning/Denomination					
Gen. tol. ISO 2768-mK							
UTRAGE ut/Except from ISO 2768-m							
0,50	40,1	Hålåbning					
(30)-120	40,3	Fläkt					
(20)-400	40,3	Kontur brutna					
(40)-1600	40,3	Edgar brutna					



Basic dimensions Ax5 w. flag shutter  
 f=7,5 mm to f=100 mm

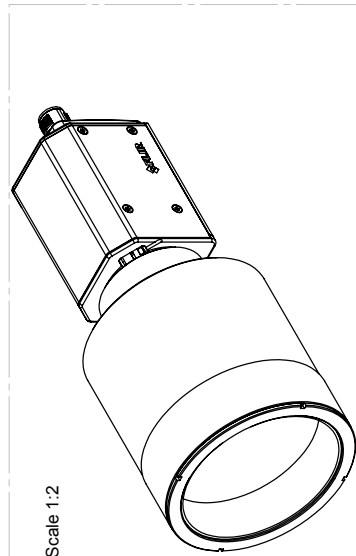
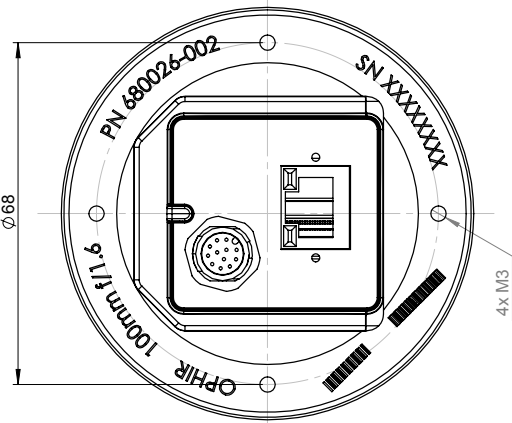
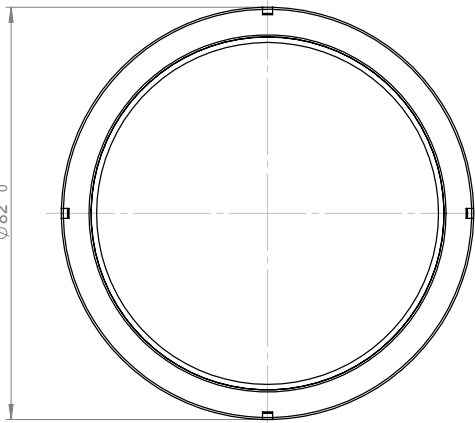
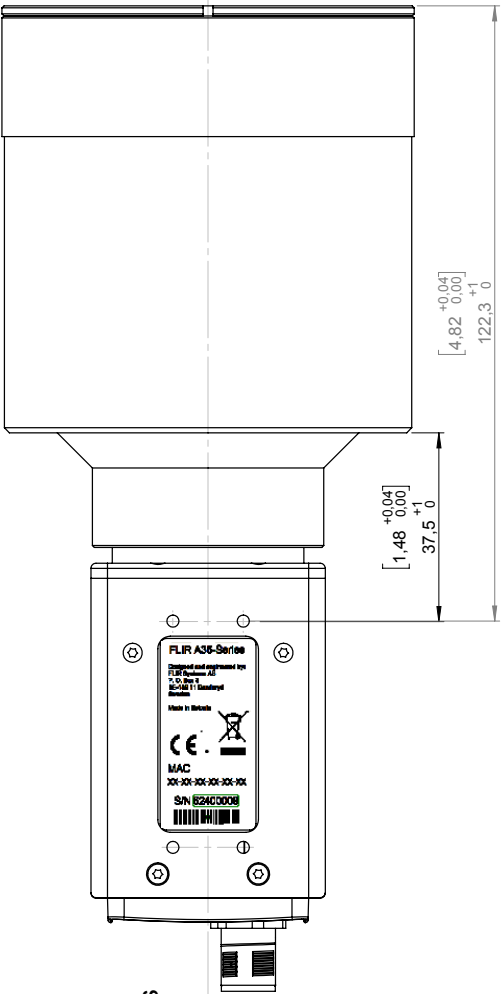
Scale/Scale 1:1  
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 Rtn m/Drawing No T129297  
 Rev -002

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Basic dimensions:  
 Camera with focal length  
 f=100 mm IR lens.  
 Only dimensions valid for  
 this IR lens.  
 For all other dimensions see pages  
 1 and 2.



Konstr/Drawing	P. MARCUS	Datum/Date	2015-12-14	Kontroll/Check	-	Material	-
Ändrad av/Modified by	P. MARCUS	Ändrad/Modified	2016-10-18	Ytjämnhet/Roughness	Ra	Ytbehandling/Surface treatment	-
Dir. ej annat angavs/Unless otherwise stated	Utryck ur/Except from ISO 2768-mK	Benämning/Denomination					
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(40)-400	40.5						
(40)-1600	40.6						
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