

# Reference Manual



## F22/F23/F87 LCI



## Technical Training

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**Technical training.**  
**Product information.**

**F22/F23/F87 LCI**



**BMW Service**

Edited for the U.S. market by:  
**BMW Group University**  
**Technical Training**

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6/1/2017

# General information

## Symbols used

The following symbol is used in this document to facilitate better comprehension or to draw attention to very important information:



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Contains important safety information and information that needs to be observed strictly in order to guarantee the smooth operation of the system.

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## Information status and national-market versions

BMW Group vehicles meet the requirements of the highest safety and quality standards. Changes in requirements for environmental protection, customer benefits and design render necessary continuous development of systems and components. Consequently, there may be discrepancies between the contents of this document and the vehicles available in the training course.

This document basically relates to the European version of left hand drive vehicles. Some operating elements or components are arranged differently in right-hand drive vehicles than shown in the graphics in this document. Further differences may arise as the result of the equipment specification in specific markets or countries.

## Additional sources of information

Further information on the individual topics can be found in the following:

- Owner's Handbook
- Integrated Service Technical Application.

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The information contained in this document forms an integral part of the BMW Group Technical Qualification and is intended for the trainer and participants in the seminar. Refer to the latest relevant information systems of the BMW Group for any changes/additions to the technical data.

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Technical training.

# F22/F23/F87 LCI

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# F22/F23/F87 LCI

## 1. Introduction

The F22, the F23 and the F87 M2 will undergo a life cycle impulse in the summer of 2017.

In addition to modifications to the exterior trim, particular attention will be paid to the new interior equipment with a new instrument panel.

The headlights and the rear lights with LED technology are standard and also enhance the appearance of the vehicle.

The BMW M2 F87 will also receive the life cycle impulse. The F87 LCI includes many new features and modifications. These will be explained in a separate chapter of this product information.



Complete vehicle F22/F23/F87 LCI  
The wheels shown on the F22 and F23 are not available in the US

### 1.1. Models

The following table provides an overview of the F22 and F23:

<b>Model</b>	<b>F22</b>	<b>F23</b>
230i	X	X
230i xDrive	X	X
M240i	X	X
M240i xDrive	X	X

# F22/F23/F87 LCI

## 2. Body

### 2.1. Exterior equipment

#### 2.1.1. Front

The following modifications may be identified from the front of the vehicle:

- Modified bumper design
- LED headlights
- LED fog light
- Modified radiator grill design



Comparison of front view before and after LCI

Index	Explanation
1	F22
2	F22 LCI

#### 2.1.2. Rear

The following modifications may be identified from the rear of the vehicle:

- Modified bumper design
- LED rear lights

# F22/F23/F87 LCI

## 2. Body



TG17-0100

Rear view of the F22 compared with the F22 LCI

Index	Explanation
1	F22
2	F22 LCI

### 2.1.3. F23 LCI convertible top

The convertible top of the F23 LCI has not changed and is identical to the convertible top of the F23.



TG17-0097

F23 LCI convertible top  
The wheels shown on the F23 are not available in the US



# F22/F23/F87 LCI

## 2. Body

### 2.2. Interior equipment

The F22/F23/F87 LCI has been given a newly designed instrument panel that offers higher quality than the previous 2 series vehicles. Furthermore, the use of chrome elements yields to the upgrade of the vehicle interior.



F22/F23 LCI interior equipment

Index	Explanation
1	Instrument cluster
2	Central Information Display
3	Radio operating unit
4	Air conditioning control panel
5	Gear selector
6	Controller
7	Center console control panel
8	Multifunction steering wheel
9	Assistance systems operating unit

# F22/F23/F87 LCI

## 3. Drivetrain

### 3.1. Engines

All the engines used will already be familiar as they are used in other vehicles.

#### 3.1.1. Engines

The following table features an overview of the engines used:

Model	Engine	Power [kW] (hp)	Torque [Nm] (lb-ft)
230i	B46B20O0	185 (248)	350 (258)
230i xDrive	B46B20O0	185 (248)	350 (258)
M240i	B58B30M0	250 (335)	500 (369)
M240i xDrive	B58B30M0	250 (335)	500 (369)

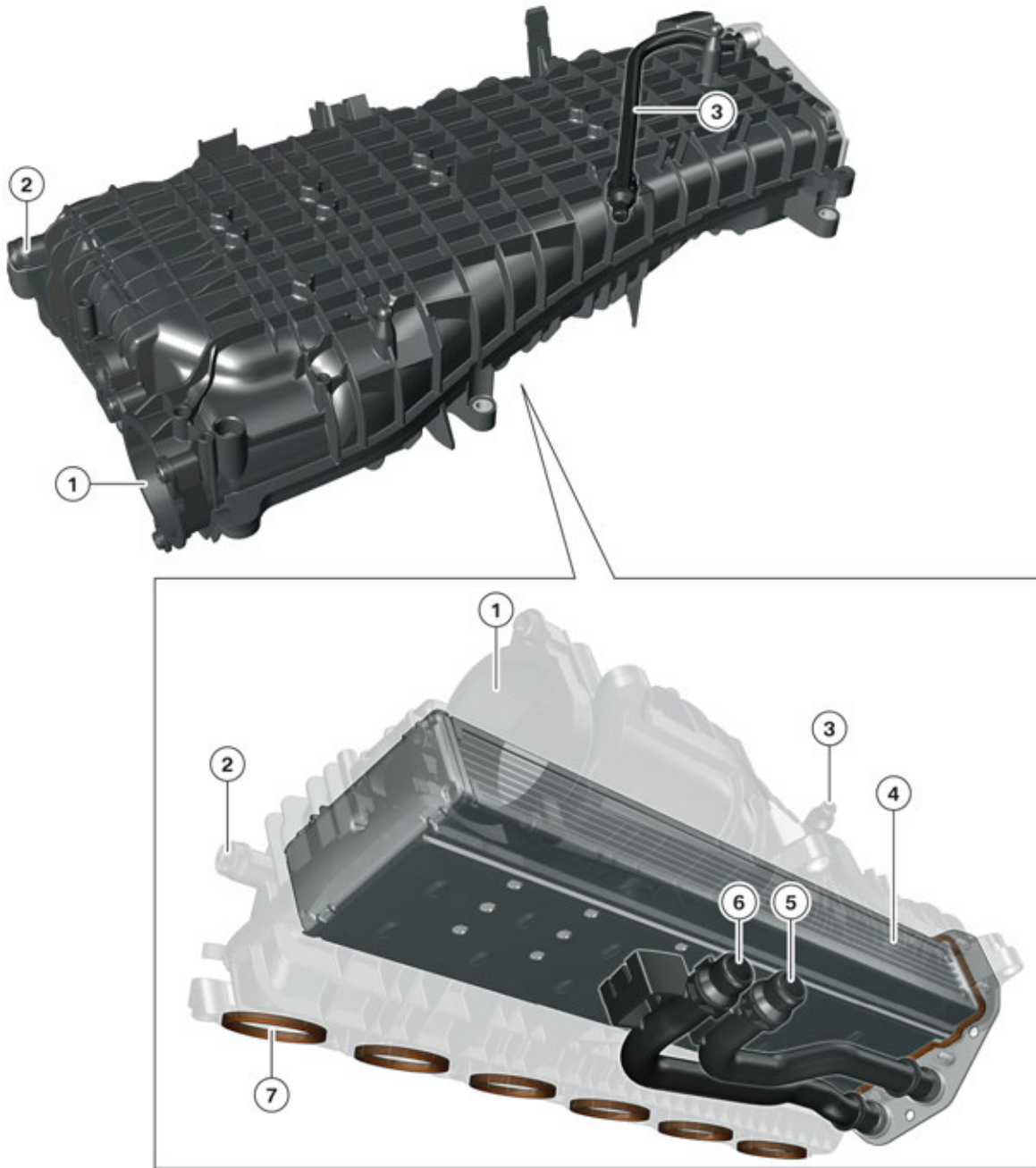
#### Charge air cooling

The B46/B58 engines feature an integrated, indirect charge air cooling. The benefits of integrated indirect charge air cooling are:

- Lower charge air volume between compressor and intake valve.
- More homogeneous temperature distribution within the intake ports.
- Increase in performance by higher intake pressure.
- Improvement of the response characteristics.
- Reduction in consumption.

# F22/F23/F87 LCI

## 3. Drivetrain



TO15-0012

B58 engine intake air system with integral indirect charge air cooler

# F22/F23/F87 LCI

## 3. Drivetrain

Index	Explanation
1	Throttle valve mounting
2	Tank ventilation
3	Ventilation line to the expansion tank
4	Charge air cooler
5	Coolant return
6	Coolant supply
7	Cylinder head connection

### 3.2. Transmission

The 6-speed manual transmission and the 8-speed automatic transmission already familiar from other vehicles are used.

The table below shows which transmissions are fitted as standard in the various models:

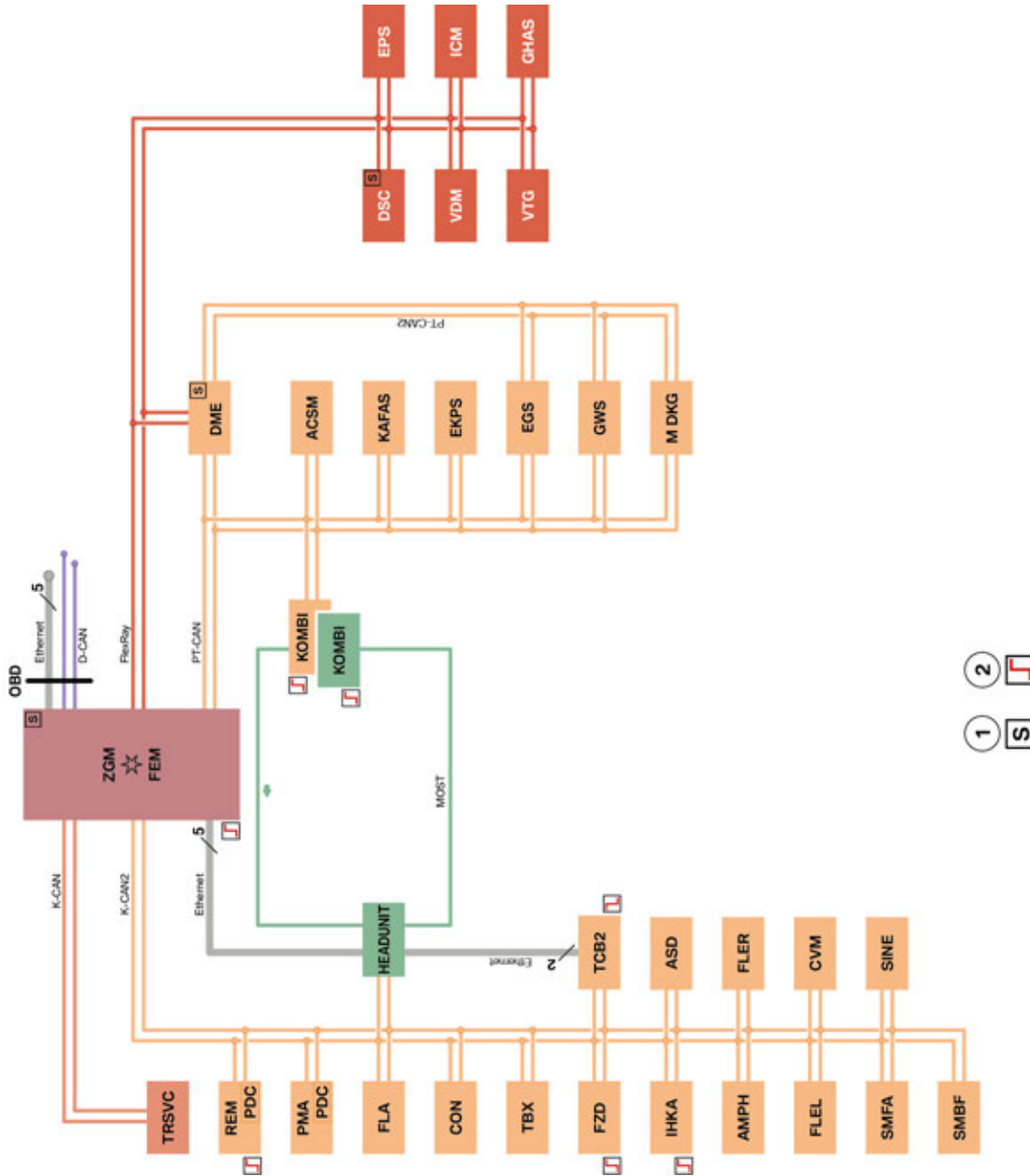
Model	F22 LCI	F23 LCI
BMW 230i	Automatic transmission *Manual transmission	Automatic transmission
BMW 230i xDrive	Automatic transmission	Automatic transmission
BMW M240i	Automatic transmission *Manual transmission	Automatic transmission *Manual transmission
BMW M240i xDrive	Automatic transmission	Automatic transmission

\*An manual transmission is available for the F22 230i and M240i coupe and the F23 M240i coupe.

# F22/F23/F87 LCI

## 4. General Vehicle Electronics

### 4.1. Bus overview



TE17-0107\_2

F22/F23/F87 LCI bus overview

Index	Explanation
ACSM	Advanced Crash Safety Module
ASD	Active Sound Design
CON	Controller
CVM	Convertible top module (only F23 LCI)

# F22/F23/F87 LCI

## 4. General Vehicle Electronics

<b>Index</b>	<b>Explanation</b>
DKG	Twin-clutch gearbox (only F87 LCI)
DME	Digital Motor Electronics
DSC	Dynamic Stability Control
EGS	Electronic transmission control
EKPS	Electronic fuel pump control
EPS	Electronic Power Steering
FEM	Front Electronic Module
FLA	High-beam assistant
FLEL	Frontal Light Electronics Left
FLER	Frontal Light Electronics Right
FZD	Roof function center
GHAS	Regulated rear axle differential lock (only F87 LCI)
GWS	Gear selector
HEADUNIT	Head unit
AMPH	HiFi amplifier
ICM	Integrated Chassis Management
IHKA	Integrated automatic heating / air conditioning
KAFAS	Camera-based driver support systems
KOMBI	Instrument cluster
REM	Rear Electronic Module
SINE	Siren with tilt alarm sensor
SMBF	Seat module, passenger
SMFA	Seat module, driver
TBX	Touchbox
TCB2	Telematic Communication Box 2
TRSVC	Top Rear Side View Camera (only rear view camera)
VDM	Vertical Dynamics Management
VTG	Transfer box
ZGM	Central Gateway Module

# F22/F23/F87 LCI

## 4. General Vehicle Electronics

### 4.2. Lighting

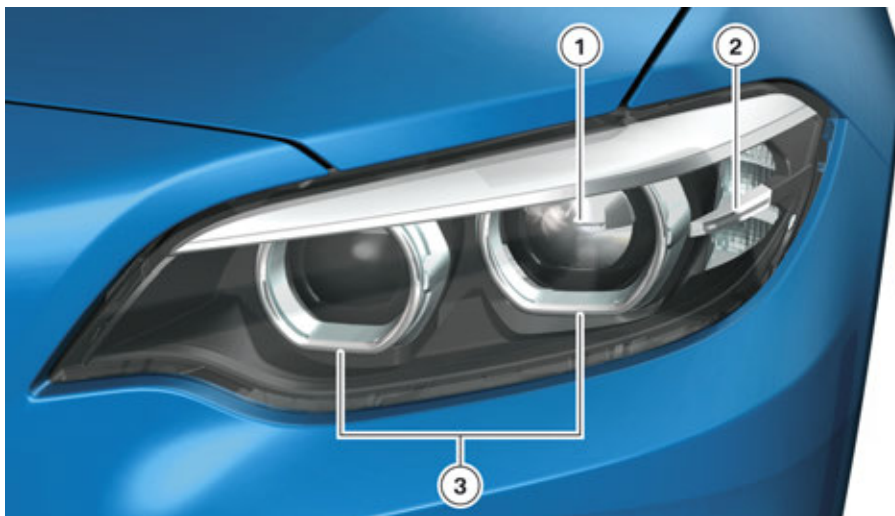
The F22/F23/F87 LCI comes with LED headlights as standard equipment. Halogen and xenon headlights are no longer available. The following lighting equipment is available:

- LED headlights (5A2 standard equipment on all F2x/F87)
- Adaptive LED headlight (option 552)
- High-beam assistant (option 5AC)
- LED fog lights (standard equipment on 230i models only) fog lights are not available on any other models.

#### 4.2.1. LED headlights

LED headlights are included as standard equipment. The low-beam and high-beam headlights are located in a single reflector (bi-LED).

LED fog lights (option 5A1) are standard equipment.



F22/F23/F87 LCI LED headlights

TE17-0110

Index	Explanation
1	Low beam/high beam headlight
2	Turn indicator
3	Side light/daytime driving light

#### 4.2.2. Adaptive LED Headlights

Adaptive LED headlights (option 552) may be ordered as optional equipment.

# F22/F23/F87 LCI

## 4. General Vehicle Electronics

The low-beam and high-beam headlights are located in a single reflector (bi-LED).



F22/F23/F87 LCI adaptive LED headlights

Index	Explanation
1	Low beam/high beam headlight
2	Turn indicator
3	Side light/daytime driving light

### 4.2.3. LED fog lights 230i/230i xDrive only

LED fog lights are standard equipment for the F22 and F23 230i and 230ixDrive only. The exception here is the F87 and M240i, which, like vehicles with an M sport package (option 337), does not have LED fog lights because of the bumper design.



F22/F23/F87 LCI LED fog lights



# F22/F23/F87 LCI

## 4. General Vehicle Electronics

### 4.2.4. Rear lights

In addition to a redesign, the lights use LEDs as the light source. The reversing light continues to use a standard bulb.



TE17-0111\_2

F22/F23/F87 LCI rear light

Index	Explanation
1	Turn indicator
2	Brake light
3	Tail light
4	Reversing light ( bulb)

### 4.3. Assistance systems

All assistance systems in the F22/F23 LCI are already familiar from other vehicles.

The following assistance systems are available:

- Active Driving Assistant (option 5AS)
- High-beam assistant (option 5AC is included with option 552)
- Dynamic cruise control (standard)
- Speed limit info (option 8TH)
- Parking Manoeuvring Assistant (option 5DP)
- Park Distance Control (front and rear option 508) also adds Parking Manoeuvring Assistant (option 5DP)
- Rear view camera (standard).

# F22/F23/F87 LCI

## 4. General Vehicle Electronics

### 4.3.1. Active Driving Assistant

The Active Driving Assistant (option 5AS) contains the following assistance systems:

- Lane departure warning.
- Collision warning with city brake function.
- Pedestrian warning with city brake function.

### 4.3.2. Active cruise control with Stop&Go function

The option is only for the 230i models, only with an automatic transmission and without the ZMP option. The active cruise control with Stop&Go function (option 5DF). A radar sensor is built into the front bumper in order to detect vehicles ahead of the car. The KAFAS camera **is not** responsible for the active cruise control with Stop&Go function here. This means that existing stationary objects are not detected under some conditions. Active cruise control with Stop&Go function operates in a speed range from 0 to 130 mph.



F22/F23 LCI ACC sensor

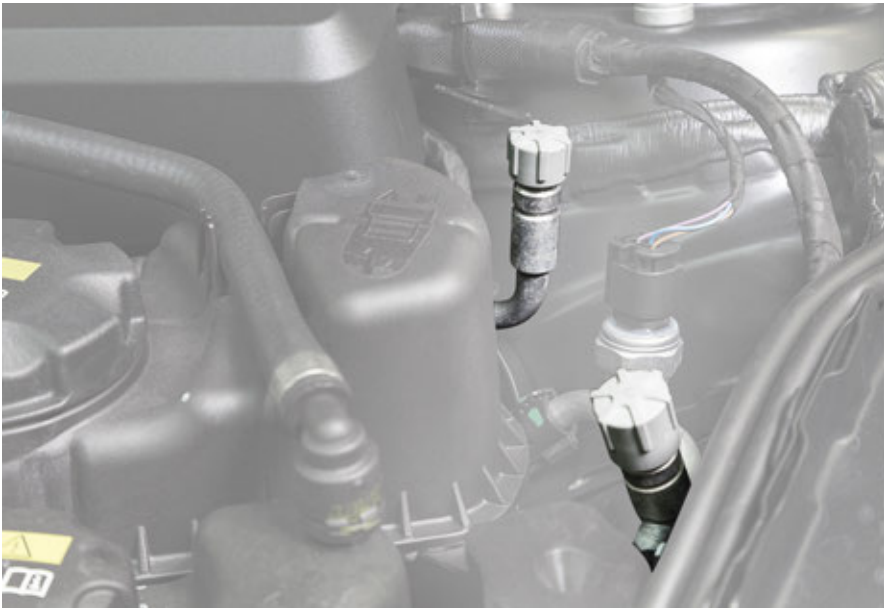
# F22/F23/F87 LCI

## 4. General Vehicle Electronics

### 4.4. Heating and air conditioning system

#### 4.4.1. Refrigerant

The **R1234yf** refrigerant will be used and is identified with grey service caps.



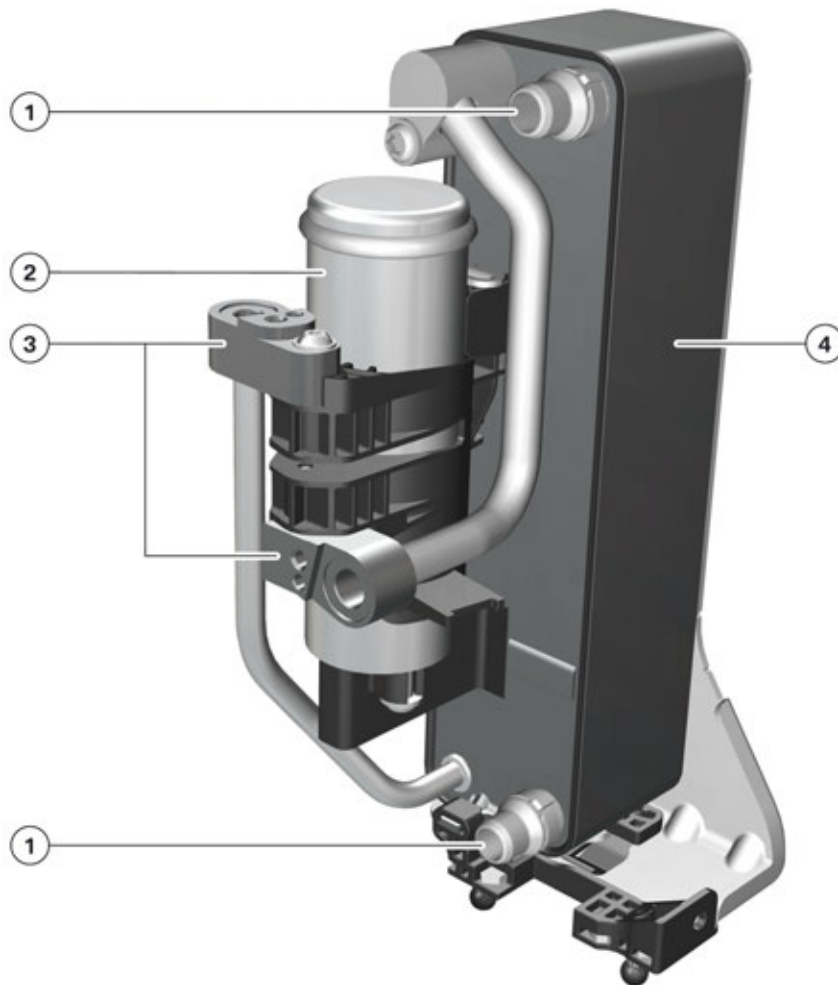
Filling valves R1234yf

#### 4.4.2. Coolant-cooled air conditioning condenser

Vehicles with the B48 and B58 engine have a coolant-cooled air conditioning condenser (refrigerant-coolant heat exchanger). The former air conditioning condenser (refrigerant-air heat exchanger) is no longer used in these vehicles. The low temperature circuit cools the compressed charge air (air-coolant heat exchanger) and the refrigerant.

# F22/F23/F87 LCI

## 4. General Vehicle Electronics



Coolant-cooled air conditioning condenser

Index	Explanation
1	Connections, coolant
2	Receiver dryer
3	Refrigerant connections
4	Coolant-cooled air conditioning condenser

# F22/F23/F87 LCI



## 5. Displays and Controls

### 5.1. Instrument cluster

Two different instrument clusters are available depending on the equipment:

- Basic instrument cluster (standard equipment)
- Instrument cluster with extended scopes (option 6WA)

Both instrument clusters have two round instruments with Black Panel technology. An oil temperature gauge is incorporated in the on-board computer.

Instrument panel	Explanation
 The image shows the basic instrument cluster. It features two round instruments: a speedometer on the left and a tachometer on the right. Below the instruments is a 2.7-inch TFT display showing various vehicle metrics such as time (23:20), gear (D), speed (559 km/h), and temperature (+26.5°C). The cluster is labeled with the part number TE17-0115.	<b>Basic instrument cluster</b> <ul style="list-style-type: none"><li>• 2 round instruments</li><li>• 2.7" TFT display</li><li>• Standard equipment</li></ul>
 The image shows the extended and enhanced instrument cluster. It features two round instruments: a speedometer on the left and a tachometer on the right. Below the instruments is a 5.7-inch TFT display showing various vehicle metrics such as temperature (+6.5°C), speed (62.8 km/h), and odometer (27218). The cluster is labeled with the part number TE17-0116.	<b>Extended and enhanced instrument cluster</b> <ul style="list-style-type: none"><li>• 2 round instruments</li><li>• 5.7" TFT display</li><li>• Already included in conjunction with a Navigation System Professional (option 609)</li><li>• Already included in conjunction with active cruise control (option 5DF)</li><li>• Standard with the F87 M2 coupe</li></ul>

#### 5.1.1. Speed limit info

Speed limit info in the instrument cluster can be switched on and off via the controller. Speed limit info will no longer be displayed directly in the on-board computer if the display is active. The Speed limit info display is shown to the side, next to the on-board computer. This means that Speed limit info is always visible regardless of the choice of on-board computer display.



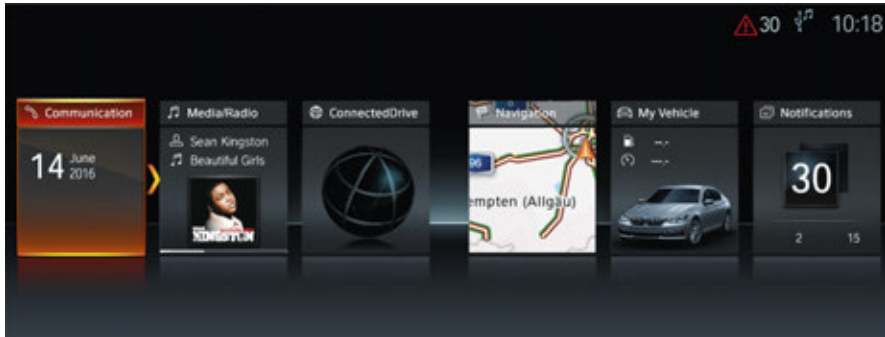
Display of speed limit info in the extended and enhanced instrument cluster

# F22/F23/F87 LCI

## 5. Displays and Controls

### 5.2. User interface

The F22/F23/F87 LCI has been given a newly designed user interface. This is known as ID6 (6th generation BMW iDrive). Marketing refers to the user interface as the New Interface Design.



F22/F23/F87 LCI CID main menu

#### 5.2.1. Innovations

##### Content of the tiles

The contents of the following tiles can be customized:

Menu	Tile setting
Navigation	<ul style="list-style-type: none"><li>• Map</li><li>• Arrow view</li></ul>
On-board computer	<ul style="list-style-type: none"><li>• Reduced on-board computer</li><li>• On-board computer</li><li>• Driving style analysis</li></ul>
ConnectedDrive	Market specific. A number of examples are listed: <ul style="list-style-type: none"><li>• Weather</li><li>• News</li><li>• Wiki local</li><li>• Yelp etc.</li></ul>

The setting is made in the "My vehicle" menu or in the main menu by pressing the OPTION button on the controller.

##### Live tiles

The content illustrated on the tiles is shown in real time. Thus, for example, an active navigation can continue to be used in the main menu.

# F22/F23/F87 LCI

## 5. Displays and Controls

### Detailed view

Double-clicking on the MENU button on the controller changes the display on the main menu to three larger tiles.



Detailed view of the tiles

Index	Explanation
1	View of all 6 tiles
2	Detailed view of the 3 left-hand tiles
3	Detailed view of the 3 right-hand tiles

### Individual arrangement

The tile arrangement is not fixed. The order of the tiles can be adjusted to individual requirements.

If a Head Unit High 2 (HU-H2) is being used, the tiles can be moved using the touch function similar to the method used on a smartphone.

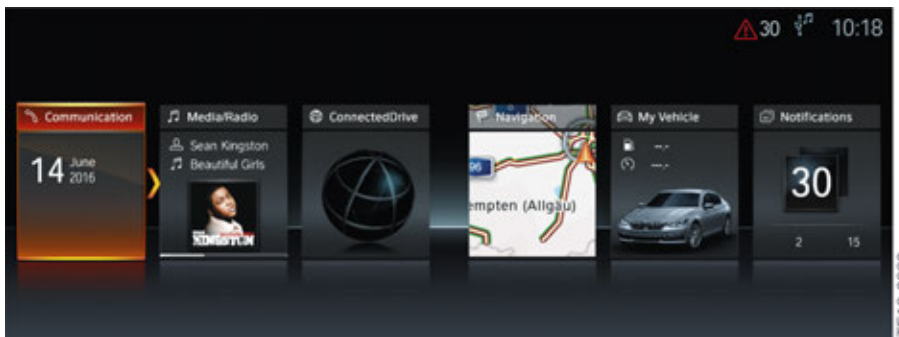
# F22/F23/F87 LCI

## 5. Displays and Controls



Individual arrangement of the tiles

Touch operation is **not** possible if a Head Unit Basic 2 (HU-B2) is being used. The tiles are moved by tilting the controller (left/right). The tiles can also be moved via the controller if a HU-H2 is being used.



Arrangement of the tiles via the controller

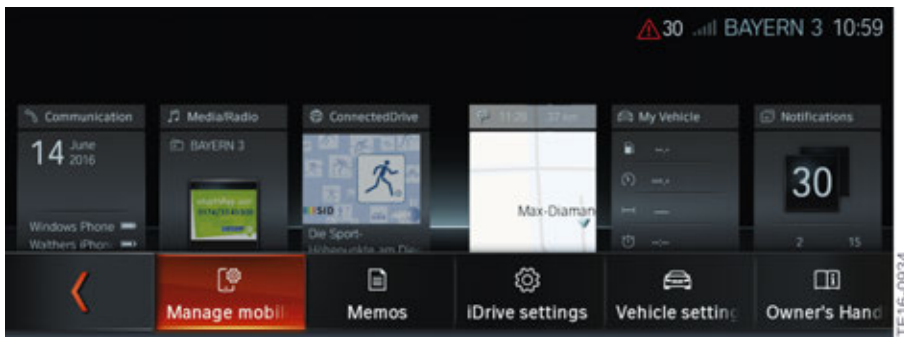
### Favorites

Favorites (the last 20 menus selected) can be called up by pressing and holding the BACK button.



# F22/F23/F87 LCI

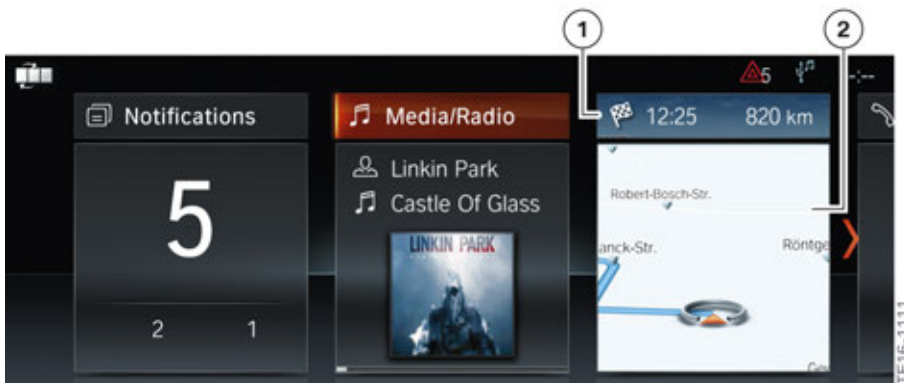
## 5. Displays and Controls



CID favorites view

### Direct opening

The menu displayed can be directly accessed via the Touch CID.



Direct menu opening

Index	Explanation
1	Selecting the menu item opens the respective main menu
2	Selecting the graphic opens the displayed menu

### Menu adjustment

The large number of new functions and applications can be used to configure a part of the menu. In the "Adjust menu" submenu, the lists can be individualized to obtain a better overview. Thus the AM stations can be removed from the radio list, for example.

The following menus can be adapted:

- Radio/Media
- Communication
- ConnectedDrive

# F22/F23/F87 LCI

## 5. Displays and Controls

### Radio/Media

- Stored stations
- SXM Satellite Radio
- FM
- AM
- Online Entertainment
- Music collection
- Bluetooth audio
- CD/DVD
- USB
- Snap-in

### Communication

- Contacts
- Recent Calls
- Dial Number
- Manage Mobile Devices
- BMW Assistant
- BMW messages
- Memos
- Personalize Menu
- News
- E-mail
- Calendar
- Tasks
- Notes

### ConnectedDrive

The contents of the ConnectedDrive menu are country-specific.

- ConnectedDrive Store
- BMW Assistant
- Concierge Service
- BMW messages
- Weather
- News

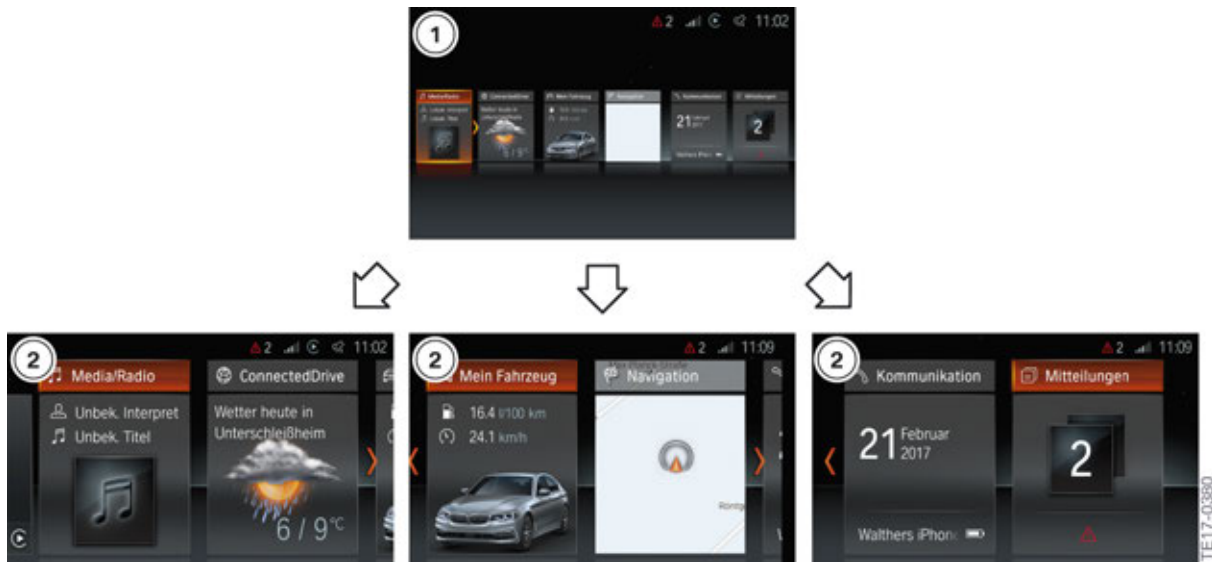
# F22/F23/F87 LCI

## 5. Displays and Controls

- Online search
- Wiki Local
- Yelp
- My News
- Flickr

### 5.2.2. 6.5" Central Information Display

Only two tiles are shown in the detailed view on the Central Information Display (CID) with a screen diagonal of 6.5". The tiles can also be arranged to suit individual requirements. However, this can only be done using the controller, as touch operation is not possible on the 6.5" CID.



F22/F23/F87 LCI 6.5" CID main menu

Index	Explanation
1	View of all tiles
2	Detailed view of the tiles

### 5.3. Central Information Display

Two different Central Information Displays (CID's) are installed, depending on the equipment. Vehicles with a Radio Professional (standard equipment) will have a CID with a 6.5" diagonal screen.

Vehicles with a Professional navigation system (option 609) are fitted with an 8.8" diagonal screen CID with touch operation.

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## 5. Displays and Controls

### 5.3.1. Touch operation

A CID with an 8.8" diagonal screen is installed in conjunction with the Professional navigation system (option 609).

To allow easier operation of the touch control function, the graphic symbols in the main menu are highlighted when a hand approaches. To make the screen easier to use, it switches to a keyboard, for instance, when a hand approaches, as necessary.

Infrared proximity sensors are installed on the left and right of the CID housing for detecting an approaching hand.





F22/F23/F87 LCI infrared sensors for the central information display (CID)

# F22/F23/F87 LCI

## 5. Displays and Controls

### 5.4. Controller

Two different controllers are installed, depending on the equipment level. The following graphic shows an overview of the controller equipment:

	<b>Professional radio (standard equipment)</b>	<b>Professional navigation system (option 609)</b>
<b>Head unit</b>	Head Unit Basic 2 HU-B2	Head Unit High 2 HU-H2
<b>Controller</b>	 <p>Controller with 5 direct access keys</p>	 <p>Controller with 7 direct access keys and touch operation</p>

### 5.5. Steering column switches

The turn signal/high beam switch and the wash/wipe switch immediately engage when operated. The one-touch signalling and headlight flasher continue to function as before without engaging. Flick wiping, too, functions without engagement of the wash/wipe switch.

# F22/F23/F87 LCI

## 5. Displays and Controls

### 5.5.1. Wash/wipe switch

The rain sensor mode is activated via the first detent position of the wash/wipe switch. An LED on the wash/wipe switch indicates that the rain sensor mode is active.



F22/F23/F87 LCI wash/wipe switch

Index	Explanation
1	Wash/wipe system setting
2	Knurled wheel (sets the sensitivity of the rain sensor mode)
3	Rain sensor mode LED

Following a terminal change, the rain sensor mode is automatically activated as soon as the vehicle travels over 3 mph. The LED on the wash/wipe switch indicates that the rain sensor mode has been reactivated. The rain sensor is already included in the standard equipment.

To avoid damage to the wiper blades when the windscreen is iced over, the rain sensor mode is not activated at temperatures of 23° F or lower until the vehicle is traveling at a speed of more than 4 mph.

# F22/F23/F87 LCI

## 6. Infotainment

### 6.1. Head unit

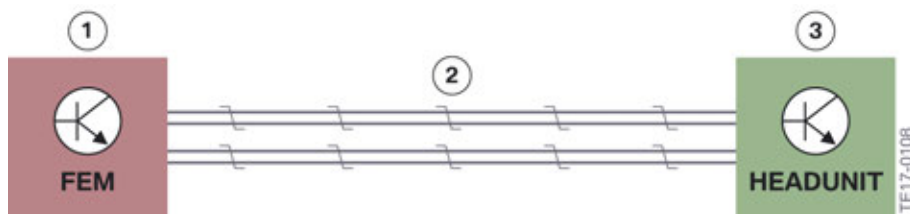
Two head units are available for the various equipment specifications:

- Head Unit Basic 2
- Head Unit High 2

The two head units are already familiar from other vehicles.

#### 6.1.1. Ethernet

The activating line for the Ethernet connection between the head unit and the Front Electronic Module (FEM) is no longer needed. Activation is determined by a bus signal.



Omission of Ethernet activating line

Index	Explanation
1	Front Electronic Module (FEM)
2	Ethernet data lines
3	Head unit

### 6.2. Antennas

The installation locations of the various antennas have not changed. Further information on antennas can be found in the F23 complete vehicle product information.

#### 6.2.1. SXM Satellite Radio SDARS

The F23 LCI still uses the antenna on the luggage compartment lid for the SDARS.

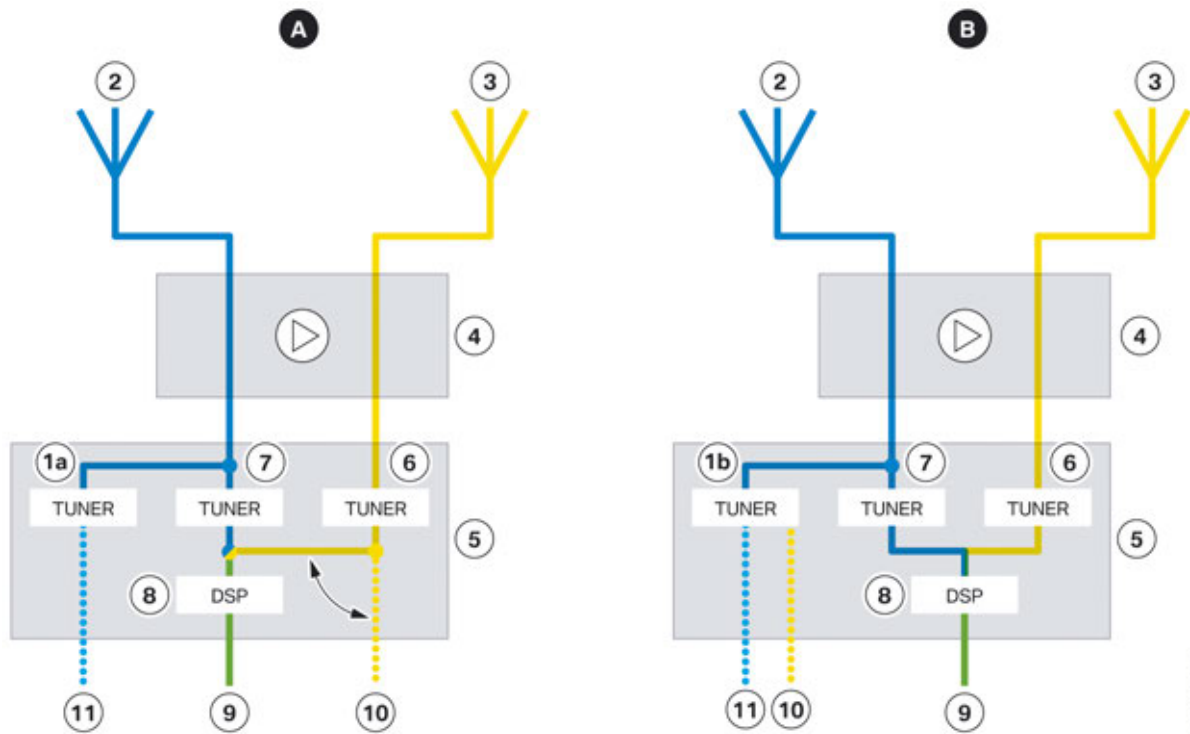
#### 6.2.2. Phase diversity

The phase antenna diversity of a Head Unit Basic used one of the two tuners to update the list of stations. For this short period in which the station list was being updated, only one tuner was available for reception of the current station. The phase antenna diversity in the Headunit Basis 2 features a revised tuner.

The revised tuner is responsible for the station list and for TMC messages, depending on the equipment. Thus, 2 tuners can now be used permanently for the audio playback.

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## 6. Infotainment



F22/F23/F87 LCI phase antenna diversity comparison

TE16-1902

Index	Explanation
A	Head Unit Basic
B	Head Unit Basic 2
1a	TMC tuner (only in vehicles with navigation system) (Not for US)
1b	Additional tuner for station list update (additionally responsible for TMC messages in vehicles with a navigation system)
2	FM antenna 1
3	FM antenna 2
4	Antenna amplifier
5	Head unit
6	Connection, FM tuner 1
7	Connection, FM tuner 2
8	Digital Signal Processor (DSP)
9	Audio signal, radio
10	Signal, station list update
11	Signal, TMC messages update (only in vehicles with a navigation system)



# F22/F23/F87 LCI

## 6. Infotainment

### 6.2.3. USB hub

Two USB ports are installed in conjunction with the telephone with Hands-free Bluetooth and USB audio connection (option 6NH) or Telephone with wireless charging (option 6NW). A USB hub connects the two USB ports with the head unit.



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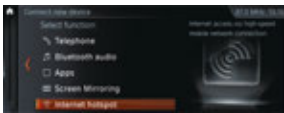
The USB connection between the head unit and the USB hub may only be unplugged when unpowered. Otherwise, the USB hub may be damaged.

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### 6.3. Functions

The following list shows the equipment available in the Infotainment area:

- **WLAN hotspot (option 6WD is included when ordering option 6WN Wireless charging):** The hotspot enables the connection of mobile terminals to the Internet via the SIM card integrated in the vehicle in the Telematic Communication Box 2 (TCB2).



- **Apple® CarPlay preparation (option 6CP):** Apple® CarPlay enables the wireless and comfortable use of iPhones® in the vehicle. iPhone® contents such as music, news, navigation or selected apps can be displayed and operated via the user interface of the vehicle.



- **Voice processing system:** In conjunction with the "ConnectedDrive Services", voice commands can be formulated in natural language.



- **Parking Info:** In the Navigation menu, displays parking availability in the surrounding area and the designated navigation destination. Displays information about parking lot/garage locations including price, number of spaces, availability, operating hours, phone number and address. You can also e-mail the address to your smartphone or device directly from your vehicle.
- **Advanced Real-Time Traffic Information (option 6AM):** Colored highlighting of the roads in the navigation map illustrates the probability of traffic patterns in your location. Traffic information is only available in conjunction with a Navigation System Professional (option 609).

# F22/F23/F87 LCI

## 7. F87 LCI

### 7.1. Overview

The F87 will undergo a life cycle impulse in summer 2017 in parallel with the F22/F23 LCI.

#### 7.1.1. Exterior equipment

The F87 LCI comes with LED headlights as standard equipment. The LED headlights are identical to the LED headlights in the F22/F23 LCI.

No fog lights are installed in the F87 LCI because of the cooling requirements and bumper design.

The following image shows a front view and a rear view of the F87 LCI. The front and rear bumpers have been taken from the F87 before the life cycle impulse.



F87 LCI complete vehicle

# F22/F23/F87 LCI

## 7. F87 LCI

### 7.1.2. Interior equipment

The F87 LCI has been given a newly designed instrument panel for a higher quality experience. The new instrument cluster is identical with that of the F22/F23 LCI. The F87 LCI uses components and applications typical for the M styling, such as an M gear selector or BMW M door sill cover strips.



F87 LCI interior equipment

### 7.2. Drive

The table below provides information about the drive components:

Engine	Power [kW] (hp)	Torque [Nm] (lb-ft)	Transmission
N55B30T0	272 (365)	465 + 35 overboost (343 + 26 overboost)	Manual transmission *M Double-clutch transmission (option 2MK)

# F22/F23/F87 LCI

## 7. F87 LCI

### 7.3. Transmission

The F87 LCI comes standard with a manual transmission, the optional \*M Double-clutch transmission (option 2MK) with Drivelogic is also available.

### 7.4. Instrument cluster

One instrument cluster is available for the F87 LCI:

- Instrument cluster with extended scopes with 5.7" TFT display.



F87 LCI instrument cluster

### 7.5. Equipment

All the special equipment features and innovations in the F22/F23 LCI are also available in the F87 LCI, with the following exceptions:

- LED fog light
- Active cruise control with Stop&Go function
- Front Park Distance Control PDC (option 508)
- Parking Manoeuvring Assistant PMA (option 5DP)

**LED fog light:** No fog lights are fitted because of the enhanced cooling requirement.

**Active Cruise Control With Stop&Go Function:** No radar sensor is fitted because of the bumper geometry and the enhanced cooling requirement.

**Front Park Distance Control:** No ultrasonic sensors are fitted because of the bumper geometry.

**Parking Manoeuvring Assistant:** Because no front ultrasonic sensors are fitted, the Parking Manoeuvring Assistant is not able to execute automatic parking.



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