

# Technical Specification LCD Pure LCD Pure-X



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LCD Pure Specification Version 2.0

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# Contents

1	LCD Pure	2
	1.1 Small	2
	1.2 Medium	16
	1.3 Large	32
2	LCD Pure-X	57
	2.1 DPP-XHC50	57
	2.2 DPP-XHC70	60
	2.3 DPP-XHC101	63
	2.4 DPP-XHC121	66
	2.5 LVDS Port	70
3	Custom Coverglass	71

Welcome to the LCD Pure specification. Here you will find information regarding our LCD Pure series. These are customizable, high quality displays in a great variety of sizes.

The series is subdivided into two categories:

- LCD Pure: Displays with custom coverglass (MOC: 500 pc.), no circuit board, just the LCD.
- LCD Pure-X: Displays with an interface board, which greatly simplifies communication with the controller.

Please visit our documentation page for more information regarding our software infrastructure.

Should any questions remain unanswered please don't hesitate to contact us via support@demmel.com or via +43-1-689470-0

# Part 1

# **LCD** Pure

The displays described here are part of the LCD Pure series by demmel products. Our goal is to provide our customers with high-end displays at competitive prices with quick delivery. All models can be purchased with or without touch screens. Both optically bonded capacitive (CTP) and resistive (RTP) variants are available. LCD Pure is the result of a strategic partnership with our trusted and reliable supplier Maxen Displays, which provides many of the TFTs used in our iLCD series.

Together we promise to provide long-term deliverability, custom solutions and rigid quality standards at an affordable price. This document provides the most essential specifications of each display and will be expanded as we add new models to the series. Please feel free to contact us via sales@demmel.com at any time if you have further inquiries.

# 1.1 Small

#### 1.1.1 DCD-MX2.4-N06

ltem	DCD-MX2.4-N06
Screen Size	2.4 inch
Resolution	240 × 320 dots
Brightness typ.	250 cd/m2
Pins	40 pin
TFT Interface	16BIT MCU
Viewing Direction	TN
Operating Temperature	-20~70 °C
LED Lifetime	50K Hrs.
Outline	42.72×60.26×2.46 mm
Active Area	36.72×48.96 mm
Backlight	1 LEDs x4
Touch Screen	Multiple Touch Options



DCD-MX2.4-N06 dimensions in mm

# 1.1.2 DCD-MX35x

#### **LCD Specification**

ltem	DCD-MX35	DCD-MX35T	DCD-MX35C
Screen Size		3.5 inch	
Display Resolution		320 × RGB × 240 dots	
Active Area		70.08 (H) x 52.56 (V) mm	
Display Mode		Normally black / Transmissive	
Pixel Arrangement		RGB-Strip	
TFT Interface		RGB+SPI	
Display Color		16.7 M (Display) / 64k (Controller)	
Backlight 1)		White LED	
Brightness typ.		660 cd/m2	
Contrast ratio typ.		800	
Viewing Direction		ALL O'clock / IPS-Display	
Operating Tempera- ture		-20°C~70°C	
Touch Screen	No	4-wire resistive	PCAP (OCA) 5 Fingers 2)

Note:

1) Brightness decreased to 50% of the initial value. Life time; mean time before failure at normal temperature (25°C) and normal humidity (60%) 20.000 hours

2) Optically bonded PCAP



DCD-MX35x dimensions in mm

# 1.1.3 DCD-MX40-N06

ltem	DCD-MX40-N06
Screen Size	4 inch
Resolution	480 × 800 dots
Brightness typ.	500 cd/m2
Pins	40 pin
TFT Interface	MIPI
Viewing Direction	IPS
Operating Temperature	-20~70 °C
LED Lifetime	50K Hrs.
Outline	55.54×96.2×2.13 mm
Active Area	51.84×86.40 mm
Backlight	12.8V/40mA
Touch Screen	Multiple Touch Options



DCD-MX40-N06 dimensions in mm

# 1.1.4 DCD-MX43-N44

ltem	DCD-MX43-N44
Screen Size	4.3 inch inch
Resolution	800×480 dots
Brightness typ.	500 nits cd/m2
Pins	40 pin pin
TFT Interface	RGB
Viewing Direction	IPS
Operating Temperature	-30~85 °C
LED Lifetime	nan
Outline	105.5×67.2×3.0 mm
Active Area	95.04×53.858 mm
Backlight	5 LEDs ×2
Touch Screen	Multiple Touch Options



DCD-MX43-N44 dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

### 1.1.5 DCD-MX43x

#### **LCD Specification**

Item	DCD-MX43	DCD-MX43T	DCD-MX43C
Screen Size		4.3 inch	
Display Resolution		800 x RGB x 480 dots	
Active Area		95.04 (H) × 53.858 (V) mm	
Display Mode		Normally black / Transmissive	
Pixel Arrangement		RGB-Strip	
TFT Interface		RGB	
Display Color		16.7 M (Display) / 64k (Controller)	
Backlight 1)		White LED	
Brightness typ.		1000 cd/m2	
Contrast ratio typ.		1200	
Viewing Direction		ALL O'clock / IPS-Display	
Operating Tempera-		-20°C~70°C	
ture			
Touch Screen	No	4-wire resistive	PCAP (OCA) 5 Fingers 2)

Note:

1) Brightness decreased to 50% of the initial value. Life time; mean time before failure at normal temperature (25°C) and normal humidity (60%) 20.000 hours

2) Optically bonded PCAP



DCD-MX43x dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

#### 1.1.6 DCD-MX50-N01

ltem	DCD-MX50-N01
Screen Size	5.0 inch inch
Resolution	1024*600 dots
Brightness typ.	1000 nits cd/m2
Pins	40 pin
TFT Interface	RGB
Viewing Direction	IPS
Operating Temperature	-20~70 °C
LED Lifetime	30K Hrs.
Outline	120.70×75.90×2.9 mm
Active Area	108.03×64.8 mm
Backlight	6 LEDs x 4
Touch Screen	Multiple Touch Options



DCD-MX50-N01 dimensions in mm

#### 1.1.7 DCD-MX50-N46

#### **LCD Specifications**

ltem	DCD-MX50-N46
Screen Size	5.0 inch inch
Resolution	1024*600 dots
Brightness typ.	500 nits cd/m2
Pins	40 pin pin
TFT Interface	LVDS
Viewing Direction	IPS
Operating Temperature	-30~80 °C
LED Lifetime	30K Hrs.
Outline	120.7×75.8×2.9 mm
Active Area	108.03×64.8 mm
Backlight	6 LEDs x3
Touch Screen	Multiple Touch Options

#### **Mechanical Specification**



#### DCD-MX50-N46 dimensions in mm

# 1.1.8 DCD-MX50x

#### **LCD Specification**

ltem	DCD-MX50	DCD-MX50T	DCD-MX50C
Screen Size		5.0 inch	
Display Resolution		$800 \times RGB \times 480 \text{ dots}$	
Active Area		108.00 (H) x 64.80 (V) mm	
Display Mode		Normally black / Transmissive	
Pixel Arrangement		RGB-Strip	
TFT Interface		RGB	
Display Color		16.7 M (Display) / 64k (Controller)	
Backlight 1)		White LED	
Brightness typ.		1000 cd/m2	
Contrast ratio typ.		800	
Viewing Direction		ALL O'clock	
Operating Tempera- ture		-20°C~70°C	
Touch Screen	No	4-wire resistive	PCAP (OCA) 5 Fingers 2)

Note:

1) Brightness decreased to 50% of the initial value. Life time; mean time before failure at normal temperature (25°C) and normal humidity (60%): 20.000 hours

2) Optically bonded PCAP



DCD-MX50x dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

# 1.2 Medium

#### 1.2.1 DCD-MX57-IT04

Item	DCD-MX57-IT04
Screen Size	5.7 inch
Resolution	640X480 dots
Brightness typ.	700 cd/m2
Pins	40 pin
TFT Interface	RGB
Viewing Direction	IPS
Operating Temperature	-30~80 °C
LED Lifetime	50K Hrs.
Outline	127.00×98.43×8.2 mm
Active Area	115.20×86.40 mm
Backlight	3 LEDs x7
Touch Screen	Multiple Touch Options



DCD-MX57-IT04 dimensions in mm

#### 1.2.2 DCD-MX70-IS471K

#### **LCD Specifications**

ltem	DCD-MX70-IS471K
Screen Size	7 inch
Resolution	1024×600 dots
Brightness typ.	1000 cd/m2
Pins	50 pin
TFT Interface	RGB
Viewing Direction	IPS
Operating Temperature	-20~70 °C
LED Lifetime	-
Outline	165.00×100.00×5.70 mm
Active Area	154.21×85.92 mm
Backlight	3 LEDs x9
Touch Screen	Multiple Touch Options

#### **Mechanical Specification**



#### DCD-MX70-IS471K dimensions in mm

# 1.2.3 DCD-MX70-N72

ltem	DCD-MX70-N72
Screen Size	7.0 inch inch
Resolution	1280x768 dots
Brightness typ.	1000 nits cd/m2
Pins	40 pin pin
TFT Interface	LVDS
Viewing Direction	IPS
Operating Temperature	-30~85 °C
LED Lifetime	50K Hrs.
Outline	165X104.54X5.25 mm
Active Area	152.45X91.45 mm
Backlight	3 LEDs ×10
Touch Screen	Multiple Touch Options



DCD-MX70-N72 dimensions in mm

# 1.2.4 DCD-MX70-N73

ltem	DCD-MX70-N73
Screen Size	7.0 inch inch
Resolution	1024×600 dots
Brightness typ.	1000 nits cd/m2
Pins	50 pin pin
TFT Interface	RGB
Viewing Direction	IPS
Operating Temperature	-30~85 °C
LED Lifetime	30K Hrs.
Outline	164.9×100×5.3 mm
Active Area	154.21×85.92 mm
Backlight	3 LEDs ×10
Touch Screen	Multiple Touch Options



DCD-MX70-N73 dimensions in mm

# 1.2.5 DCD-MX70x

#### **LCD Specification**

ltem	DCD-MX70	DCD-MX70T	DCD-MX70C
Screen Size		7.0 inch	
Display Resolution		$1024 \times RGB \times 600 \text{ dots}$	
Active Area		154.2144 (H) x 85.92 (V) mm	
Display Mode		Normally black / Transmissive	
Pixel Arrangement		RGB-Strip	
TFT Interface		LVDS (40 pin)	
Display Color		16.7 M (Display) / 64k (Controller)	
Backlight 1)		27 white LEDs	
Brightness typ.		1000 cd/m2	
Contrast ratio typ.		800	
Viewing Direction		ALL O'clock	
Operating Tempera- ture		-20°C~70°C	
Touch Screen	No	4-wire resistive	PCAP (OCA) 5 Fingers 2)

Note:

1) Brightness decreased to 50% of the initial value. Life time; mean time before failure at normal temperature (25°C) and normal humidity (60%) 50.000 hours

2) Optically bonded PCAP





DCD-MX70x dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

#### 1.2.6 DCD-MX80-N14

Item	DCD-MX80-N14
Screen Size	8 inch
Resolution	1280×720 dots
Brightness typ.	500 nits cd/m2
Pins	40 pin pin
TFT Interface	LVDS
Viewing Direction	IPS
Operating Temperature	-30-75 °C
LED Lifetime	-
Outline	192.8×116.9×6.4 mm
Active Area	177.024×99.576 mm
Backlight	3 LEDs x12
Touch Screen	Multiple Touch Options



DCD-MX80-N14 dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

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# 1.2.7 DCD-MX80x

#### **LCD Specification**

ltem	DCD-MX80	DCD-MX80T	DCD-MX80C
Screen Size		8.0 inch	
Display Resolution		1024 × RGB × 768 dots	
Active Area		162.05 (H) × 121.54 (V) mm	
Display Mode		Normally black / Transmissive	
Pixel Arrangement		RGB-Strip	
TFT Interface		LVDS (40 pin)	
Display Color		16.7 M (Display) / 64k (Controller)	
Backlight 1)		36 white LEDs	
Brightness typ.		1000 cd/m2	
Contrast ratio typ.		800	
Viewing Direction		ALL O'clock	
Operating Tempera- ture		-20°C~70°C	
Touch Screen	No	4-wire resistive	PCAP (OCA) 5 Fingers 2)

Note:

1) Brightness decreased to 50% of the initial value. Life time; mean time before failure at normal temperature (25°C) and normal humidity (60%) 50.000 hours

2) Optically bonded PCAP



DCD-MX80x LCD dimensions in mm



#### DCD-MX80C PCAP dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

#### 1.2.8 DCD-MX90-N12

#### **LCD Specifications**

Item	DCD-MX90-N12
Screen Size	9 inch
Resolution	1024*600 dots
Brightness typ.	450 nits cd/m2
Pins	50 pin pin
TFT Interface	RGB
Viewing Direction	IPS
Operating Temperature	-20~70 °C
LED Lifetime	30K Hrs.
Outline	210.7×126.4×5.0 mm
Active Area	196.61×114.15 mm
Backlight	6 LEDs ×6
Touch Screen	Multiple Touch Options

#### Mechanical Specification



DCD-MX90-N12 dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

# 1.3 Large

# 1.3.1 DCD-MX101-IL401K

Item	DCD-MX101-IL401K
Screen Size	10.1 inch
Resolution	1200×1920 dots
Brightness typ.	800nits cd/m2
Pins	40 pin
TFT Interface	mipi
Viewing Direction	IPS
Operating Temperature	-10~50 °C
LED Lifetime	20K Hrs.
Outline	143x228.6x2.5 mm
Active Area	135.36×216.58 mm
Backlight	8 LEDs ×4
Touch Screen	Multiple Touch Options



#### DCD-MX101-IL401K dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

## 1.3.2 DCD-MX101-IM22

ltem	DCD-MX101-IM22
Screen Size	10.1 inch
Resolution	1920×1200 dots
Brightness typ.	300 cd/m2
Pins	45 pin
TFT Interface	LVDS
Viewing Direction	IPS
Operating Temperature	-20~70 °C
LED Lifetime	-
Outline	228.16×148.91×2.55 mm
Active Area	216.81×135.50 mm
Backlight	6 LEDs x6
Touch Screen	Multiple Touch Options


Backlight 36LED Circuit

1

#### DCD-MX101-IM22 dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

# 1.3.3 DCD-MX101-IS411KDB

#### **LCD Specifications**

ltem	DCD-MX101-IS411KDB
Screen Size	10.1 inch
Resolution	1024X600 dots
Brightness typ.	1000 cd/m2
Pins	50 pin pin
TFT Interface	RGB
Viewing Direction	IPS
Operating Temperature	-20~70 °C
LED Lifetime	-
Outline	235.00×143.00×5.20 mm
Active Area	222.72x125.28 mm
Backlight	6 LEDs x7
Touch Screen	Multiple Touch Options



DCD-MX101-IS411KDB dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

# 1.3.4 DCD-MX101-N63

#### **LCD Specifications**

ltem	DCD-MX101-N63
Screen Size	10.1 inch
Resolution	800x1280 dots
Brightness typ.	300 cd/m2
Pins	40 pin pin
TFT Interface	mipi
Viewing Direction	IPS
Operating Temperature	-10~50 °C
LED Lifetime	-
Outline	143x228.6x2.5 mm
Active Area	135.36×216.58 mm
Backlight	3 LEDs ×9
Touch Screen	Multiple Touch Options





DCD-MX101-N63 dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

# 1.3.5 DCD-MX101x

#### **LCD Specification**

ltem	DCD-MX101	DCD-MX101T	DCD-MX101C
Screen Size		10.1 inch	
Display Resolution		1280 × RGB × 800 dots	
Active Area		216.96 (H) × 135.6 (V) mm	
Display Mode		Normally black	
Pixel Arrangement		RGB-Strip	
TFT Interface		LVDS (40 pin)	
Display Color		16.7 M (Display) / 64k (Con- troller)	
Backlight 1)		36 white LEDs	
Brightness typ.		1000 cd/m2	
Contrast ratio typ.		1000	
Viewing Direction		ALL O'clock	
Operating Tempera- ture		-20°C~70°C	
Touch Screen	No	4-wire resistive	PCAP (OCA) 5 Fingers 2)

Note:

1) Brightness decreased to 50% of the initial value. Life time; mean time before failure at normal temperature (25°C) and normal humidity (60%) 50.000 hours

2) Optically bonded PCAP



DCD-MX101x dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

# 1.3.6 DCD-MX104-ID071K

#### **LCD Specifications**

ltem	DCD-MX104-ID071K
Screen Size	10.4 inch
Resolution	1024×768 dots
Brightness typ.	1000 cd/m2
Pins	30 pin
TFT Interface	LVDS
Viewing Direction	IPS
Operating Temperature	-30~80 °C
LED Lifetime	-
Outline	238.60×175.8×6.50 mm
Active Area	210.43x157.82 mm
Backlight	10 LEDs x4
Touch Screen	Multiple Touch Options



#### DCD-MX104-ID071K dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

# 1.3.7 DCD-MX121x

#### LCD

ltem	DCD-MX121C
Screen Size	12.1 inch
Display Resolution	1280 × RGB × 800 dots
Active Area	261.12 (H) × 163.20 (V) mm
Display Mode	Normally black / Transmissive
Pixel Arrangement	1P2D
Display Color	16.7 M (Display) / 64k (Controller)
Backlight 1)	white LEDs, typical lifetime 50.000 hours
Brightness typ.	1000 cd/m2
Contrast ratio typ.	1200
Viewing Direction	ALL O'clock
Touch Screen	PCAP 5 Fingers 2)

1) Brightness decreased to be 50% of the initial value. Life time; mean time before failure at normal temperature (25°C) and normal humidity (60%) 2) Optically bonded PCAP





DCD-MX121x dimensions in mm

# 1.3.8 DCD-MX156-N11

## **LCD Specifications**

ltem	DCD-MX156-N11
Screen Size	15.6 inch
Resolution	1920×1080 dots
Brightness typ.	1000 cd/m2
Pins	30 pin
TFT Interface	LVDS
Viewing Direction	IPS
Operating Temperature	-30~85°C
LED Lifetime	50K Hrs.
Outline	363.8X215.9X11.9 mm
Active Area	344.16X193.59 mm
Backlight	/
Touch Screen	Multiple Touch Options



#### DCD-MX156-N11 dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

260.42±1(LVDS CNT)

114.97±1(LED Power CNT)

# 1.3.9 DCD-MX170-N01

## **LCD Specifications**

ltem	DCD-MX170-N01
Screen Size	17 inch
Resolution	1280×1024 dots
Brightness typ.	250 cd/m2
Pins	30 pin
TFT Interface	LVDS
Viewing Direction	IPS
Operating Temperature	0~50°C
LED Lifetime	20K Hrs.
Outline	358.5×296.5×10.3 mm
Active Area	337.92×270.34 mm
Backlight	9 LEDs ×4
Touch Screen	Multiple Touch Options



DCD-MX170-N01 dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

# 1.3.10 DCD-MX215-N09

#### **LCD Specifications**

ltem	DCD-MX215-N09
Screen Size	21.5 inch
Resolution	1920×1080 dots
Brightness typ.	250 nits cd/m2
Pins	30 pin pin
TFT Interface	LVDS
Viewing Direction	IPS
Operating Temperature	0~50°C
LED Lifetime	30K Hrs.
Outline	487.44×278.182×9.5 mm
Active Area	478.64x268.11 mm
Backlight	nan
Touch Screen	Multiple Touch Options



#### DCD-MX215-N09 dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

## 1.3.11 DCD-MX320x

#### **LCD Specification**

ltem	DCD-MX320	DCD-MX320T	DCD-MX320C
Screen Size		32.0 inch	
Display Resolution		1920 × RGB × 1080 dots	
Active Area		698.4 (H) × 392.85 (V) mm	
Display Mode		Normally black / Transmissive	
Pixel Arrangement		RGB-Strip	
TFT Interface		dual LVDS	
Display Color		16.7 M (Display) / 64k (Con- troller)	
Brightness typ.		1500 cd/m2	
Contrast ratio typ.		1200	
Viewing Direction		ALL O'clock	
Operating Tempera-		-20°C~70°C	
ture			
Touch Screen	No	4-wire resistive	PCAP (OCA) 5 Fingers 2)

#### Note:

1) Brightness decreased to 50% of the initial value. Life time; mean time before failure at normal temperature (25°C) and normal humidity (60%) 50.000 hours

2) Optically bonded PCAP



DCD-MX320x LCD dimensions in mm (Front View)



DCD-MX32C LCD dimensions in mm (Back View)



DCD-MX320x LCD dimensions in mm (Side View)



#### DCD-MX32C PCAP dimensions in mm

**Note:** Technical drawings, 3D models, and mechanical specifications are provided with a tolerance of 0.3 mm. We therefore strongly recommend using actual measurements for prototype development.

# Part 2

# LCD Pure-X

With demmel products' LCD Pure X series, you will no longer have to worry about development effort to set up your display connection. Our expansion boards offer an easy way to integrate our high-end displays into any LVDS capable platform. They were designed to seemlessly communicate with our iLCD Linux Mainboard, but can be used in wide variety of systems. The PCB of our LCD Pure X series comes with all the necessary components for the display control. The connection to your control board is made with a single, specially designed 40-pin flex pcb cable that covers the communcation with the display and the touchpanel and even the power supply.

Further, we offer *customized solutions* (page 71) starting from 500pcs. only. The modifications range from adaptions to the coverglass to adding adhesive solutions or include color or logo prints for more brand recognition value.

# 2.1 DPP-XHC50



# 2.1.1 LCD

ltem	DPP-XHC50
Screen Size	5.0 inch
Display Resolution	800 × RGB × 480 dots
Active Area	108.00 (H) × 64.80 (V) mm
Display Mode	Normally black / Transmissive
Pixel Arrangement	RGB-Strip
TFT Interface	RGB
Display Color	16.7 M (Display) / 64k (Controller)
Backlight 1)	White LED, typical lifetime 20.000 hours
Brightness typ.	1000 cd/m2
Contrast ratio typ.	800
Viewing Direction	ALL O'clock
Operating Temperature	-20°C~70°C
Touch Screen	PCAP (OCA) 5 Fingers 2)

Notes:

1) Brightness decreased to be 50% of the initial value. Life time; mean time before failure at normal temperature ( $25^{\circ}$ C) and normal humidity (60%) 2) Optically bonded PCAP

# 2.1.2 Electrical Characteristics

ltem	Symbol	Тур.	Max.	Unit
Current consumption backlight off @ VCC $= 5V$	ICC	70	75	mA
Current consumption with full backlight @ VCC $= 5V$	ICC	280	300	mΑ
Current consumption backlight off @ VCC = $7V$	ICC	50	60	mΑ
Current consumption with full backlight @ VCC = $7V$	ICC	170	175	mΑ
Current consumption backlight off @ VCC $= 30V$	ICC	10	15	mΑ
Current consumption with full backlight @ VCC = $30V$	ICC	40	50	mA



DPP-XHx50 Dimensions in mm

# 2.2 DPP-XHC70



# 2.2.1 LCD

Item	DPP-XHC70
Screen Size	7.0 inch
Display Resolution	1024 x RGB x 600 dots
Active Area	154.21 (H) × 85.92 (V) mm
Display Mode	Normally black / Transmissive
Pixel Arrangement	RGB-Strip
Display Color	16.7 M (Display) / 64k (Controller)
Backlight 1)	27 white LEDs, typical lifetime 50.000 hours
Brightness typ.	1000 cd/m2
Contrast ratio typ.	800
Viewing Direction	ALL O'clock
Touch Screen	PCAP 5 Fingers 2)

Notes:

1) Brightness decreased to be 50% of the initial value. Life time; mean time before failure at normal temperature (25°C) and normal humidity (60%) 2) Optically bonded PCAP

# 2.2.2 Electrical Characteristics

ltem	Symbol	Тур.	Max.	Unit
Current consumption backlight off @ VCC $= 5V$	ICC	150	170	mA
Current consumption with full backlight @ VCC $= 5V$	ICC	820	850	mΑ
Current consumption backlight off @ VCC = $7V$	ICC	30	50	mΑ
Current consumption with full backlight @ VCC = $7V$	ICC	620	620	mΑ
Current consumption backlight off @ VCC $= 30V$	ICC	20	25	mΑ
Current consumption with full backlight @ VCC = $30V$	ICC	130	140	mΑ



DPP-XHx70 Connectors, see LVDS Port (page 70) for more information



#### DPP-XHx70 Dimensions in mm

# 2.3 DPP-XHC101



## 2.3.1 LCD

ltem	DPP-XHC101
Screen Size	10.1 inch
Display Resolution	$1280 \times RGB \times 800 \text{ dots}$
Active Area	216.96 (H) × 135.60 (V) mm
Display Mode	Normally black / Transmissive
Pixel Arrangement	RGB-Strip
Display Color	16.7 M (Display) / 64k (Controller)
Backlight 1)	42 white LEDs, typical lifetime 50.000 hours
Brightness typ.	1000 cd/m2
Contrast ratio typ.	1000
Viewing Direction	ALL O'clock
Touch Screen	PCAP 5 Fingers 2)

1) Brightness decreased to be 50% of the initial value. Life time; mean time before failure at normal temperature (25°C) and normal humidity (60%) 2) Optically bonded PCAP

# 2.3.2 Electrical Characteristics

ltem	Symbol	Тур.	Max.	Unit
Current consumption backlight off @ VCC $= 5V$	ICC	150	170	mA
Current consumption with full backlight @ VCC = $5V$	ICC	2000	2100	mA
Current consumption backlight off @ VCC = $7V$	ICC	30	50	mΑ
Current consumption with full backlight @ VCC = $7V$	ICC	1470	1500	mΑ
Current consumption backlight off @ VCC $= 30V$	ICC	20	25	mA
Current consumption with full backlight @ VCC = $30V$	ICC	330	340	mΑ

# 2.3.3 Mechanical Specification



# DPP-XHx101 Connectors, see LVDS Port (page 70) for more information







# 2.4 DPP-XHC121



# 2.4.1 LCD

ltem	DPP-XHC121
Screen Size	12.1 inch
Display Resolution	1280 × RGB × 800 dots
Active Area	261.12 (H) × 163.20 (V) mm
Display Mode	Normally black / Transmissive
Pixel Arrangement	1P2D
Display Color	16.7 M (Display) / 64k (Controller)
Backlight 1)	white LEDs, typical lifetime 50.000 hours
Brightness typ.	1000 cd/m2
Contrast ratio typ.	1200
Viewing Direction	ALL O'clock
Touch Screen	PCAP 5 Fingers 2)

1) Brightness decreased to be 50% of the initial value. Life time; mean time before failure at normal temperature (25°C) and normal humidity (60%) 2) Optically bonded PCAP

# 2.4.2 Electrical Characteristics

**Danger:** The DPP-LHx121-8P and larger models do not work under 10V. This due to the current requirements of the backlight.

Item	Symbol	Typ.	Max.	Unit
Current consumption backlight off $0 VCC = 5V$		-	_	mA
Current consumption with full backlight $@$ VCC = 5V	ICC	-	-	mA
Current consumption backlight off $@VCC = 10V$	ICC	50	70	mA
Current consumption with full backlight @ VCC $= 10V$	ICC	1300	1400	mA
Current consumption backlight off @ VCC $= 30V$	ICC	20	50	mA
Current consumption with full backlight @ VCC = $30V$	ICC	450	480	mA

## 2.4.3 Mechanical Specification



DPP-XHx121 Connectors, see LVDS Port (page 70) for more information




## DPP-XHx121 Dimensions in mm

## 2.5 LVDS Port

This is the pinning of the LVDS port on the rear of the panel, which on the silkscreen is labeled as "To DPP-LMB -> LVDS" and as "LVDS IN" in our documentation.

LVDS uses differential signaling, which allows it to run on low voltages. Connection to the LVDS in port is made via a 40-pin FFC/FPC cable with 0.5 mm pitch. The FFC/FPC connector on the board is a top-contact model.

Pin#	PinName	Primary Function Description
1	LVDS SPARE	Spare line currently not connected
2-4	VCC	3.3V power supply
5	LVDS DISP Reset	Display reset 1)
6	LVDS DISP Disable	Display disable 2)
7	GND	
8	LVDS D0 N	Differential pair 0 for data transmission to the display
9	LVDS D0 P	Differential pair 0 for data transmission to the display
10	GND	
11	LVDS D1 N	Differential pair 1 for data transmission to the display
12	LVDS D1 P	Differential pair 1 for data transmission to the display
13	GND	
14	LVDS D2 N	Differential pair 2 for data transmission to the display
15	LVDS D2 P	Differential pair 2 for data transmission to the display
16	GND	
17	LVDS CLK N	Differential Pair for clock line transmission to the display
18	LVDS CLK P	Differential Pair for clock line transmission to the display
19	GND	
20	LVDS D3 N	Differential pair 3 for data transmission to the display
21	LVDS D3 P	Differential pair 3 for data transmission to the display
22	GND	
23	LCDS PCAP SCL	I <sup>2</sup> C interface for PCAP – clock
24	LCDS PCAP SDA	I <sup>2</sup> C interface for PCAP – data
25	GND	
26	LCDS PCAP INT	I <sup>2</sup> C interface for PCAP – interrupt
27	LCDS PCAP RES	I <sup>2</sup> C Interface for PCAP – reset 3)
28	GND	
29	SYS SCL	Backup I <sup>2</sup> C interface – clock 4)
30	SYS SDA	Backup I²C interface – data 4)
31-33	LVDS BL GND	GND pin for 5V supply of backlight, connected to GND.
34-36	LVDS BL HV VCC	High voltage power supply for backlight 5)
37	LVDS BL PWM	PWM line for setting the brightness of the display backlight. 6)
38-40	LVDS BL VCC	5V power supply for backlight 5)

1) Pull to GND to reset the display. Must be applied on or after power up of VCC for > 50ms, but is not connected/used on all models. Can be left open during normal operation or tied to 3.3V. 2) Pull to GND to enable the display. When left open or tied to 3.3V the display is disabled. 3) Pull to GND to reset the PCAP. Must be applied on or after power up of VCC for > 50ms. Can be left open during normal operation or tied to 3.3V. 4) This I<sup>2</sup>C bus has no dedicated purpose and may be used for additional devices such as sensors. 5) Depending on the size of the display, it uses either the 5V pin or the high voltage pin for voltages between 7V and 30V in order to minimize current. 6) When left open or tied to GND, backlight is disabled. Can be tied to 3V3 for maximum brightness.

## Part **3**

## **Custom Coverglass**

Our LCD Pure (page 2) and LCD Pure X (page 57) series do not only impress because of their high-end quality but also allow customers to stand out because of our wide range of customization options. Save time, costs and effort by choosing us instead of relying on a variety of suppliers to purchase and bond your LCD, touchpanel and cover glass. We offer a one-stop solution for your specific needs. Our specialized supplier network, allows us to offer a variety of modifications to the LCD, starting from a MOQ of 500pcs. only. The options include changes to the cover glass for better protection and usability, adding adhesive solutions for easier integration and different color or logo print options to increase your brand recognition value.





Of course, all these options are also available for our intelligent LCDs - iLCD JPro & iLCD Linux - if the MOQ is met.

Pricing and delivery times are highly competitive with average times from order to arrival ranging between 8 weeks for samples and 10 to 12 weeks for mass production.

Let these options inspire you to even bolder and more attractive designs for a more high-end appearance of your device. The following graphic illustrates the many possibilities.