LITEON®
OPTOELECTRONICS

LED Display

Product Data Sheet

LTL-7100M-HB

Spec No.: DS30-2012-0068

Effective Date: 09/22/2012

Revision: A

LITE-ON DCC

RELEASE

BNS-OD-FC001/A4

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LED DISPLAY

LTL-7100M-HB
DATA SHEET

Item	Description	By	DATE
-	New Spec	Reo Lin	2012/01/06
1	1.1 Add Bin Tables in Page 7 and 10 1.2 Modify Packing Dimensions	Reo Lin	2012/02/08
2	Modify Packing Dimensions for request	Reo Lin	2012/02/09
3	Modify Iv Range	Reo Lin	2012/02/10
4	4.1 Add Wave Soldering Instruction in Page 6 4.2 Modify Iv Range in Page 7	Reo Lin	2012/06/07
5	5.1 Add Hue Table in Page 8 and 11 5.2 Add Symbol Picture in Page 4	Reo Lin	2012/09/13

FEATURES

∗RECTANGULAR LIGHT BAR.
∗LARGE, BRIGHT, UNIFORM LIGHT EMITTING AREAS.
∗LOW POWER REQUIREMENT.
∗HIGH BRIGHTNESS & HIGH CONTRAST.
∗SOLID STATE RELIABILITY.
∗CATEGORIZED FOR LUMINOUS INTENSITY.
∗LEAD-FREE PACKAGE(ACCORDING TO ROHS)

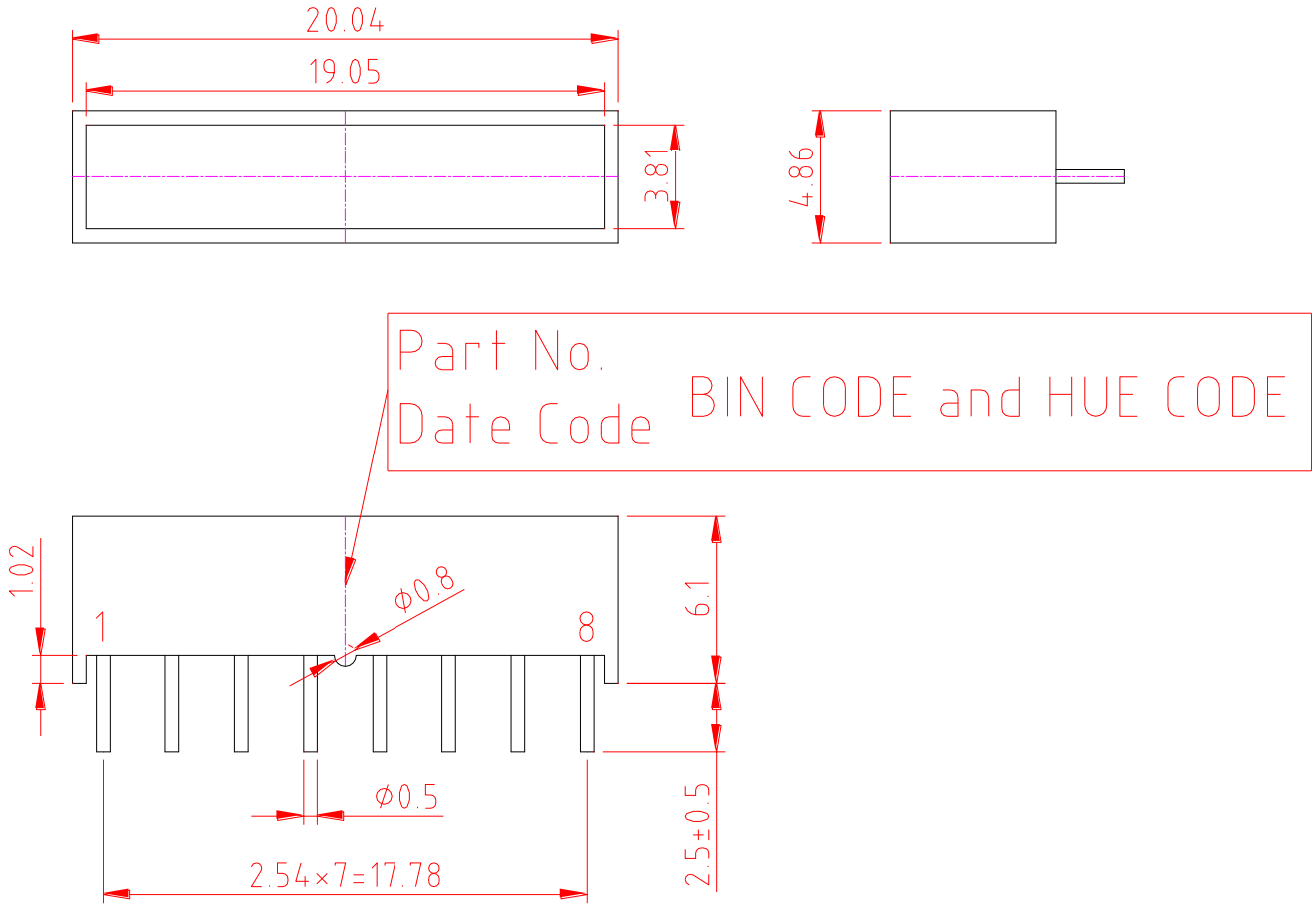
DESCRIPTION

The LTL-7100M-HB is a light bar rectangular light sources designed for a variety of applications where a large bright source of light is required. The device utilize AS-AlInGaP GREEN LED chips (AlInGaP epi on GaAs substrate) & AS-AlInGaP Yellow Orange LED chips (AlInGaP epi on GaAs substrate), and has white bar.This display is built by special reflector material that can pass high-temperature soldering condition.(reference wave soldering instruction in Page 6)

DEVICE

PART NO.	DESCRIPTION
Multiplex color	Universal
LTL-7100M-HB	Rectangular Bar

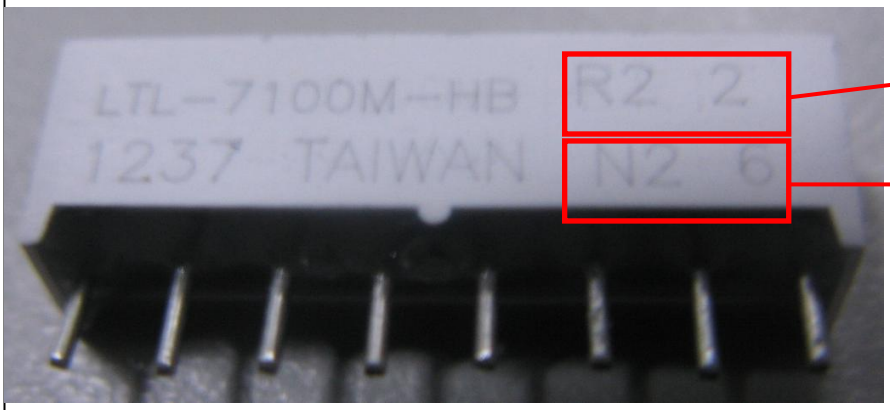
PACKAGE DIMENSIONS



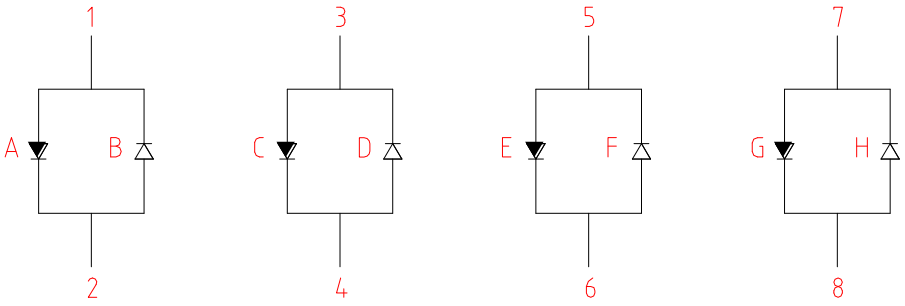
NOTES: 1. All dimensions are in millimeters. Tolerances are ± 0.25 mm (0.01“) unless otherwise noted.

2. Pin tip’s shift tolerance is ± 0.4 mm.
3. Foreign material on segment ≦10mils
4. Ink contamination (surface) ≦20mils
5. Bending≦1% of reflector length
6. Bubble in segment ≦10mils
7. Recommend the best pcb hole : diameter 1.0mm
8. BIN CODE shows AlInGaP Yellow Orange BIN CODE and HUE CODE, then shows AlInGaP Green BIN CODE and HUE CODE

SYMBOL PICTURE



INTERNAL CIRCUIT DIAGRAM



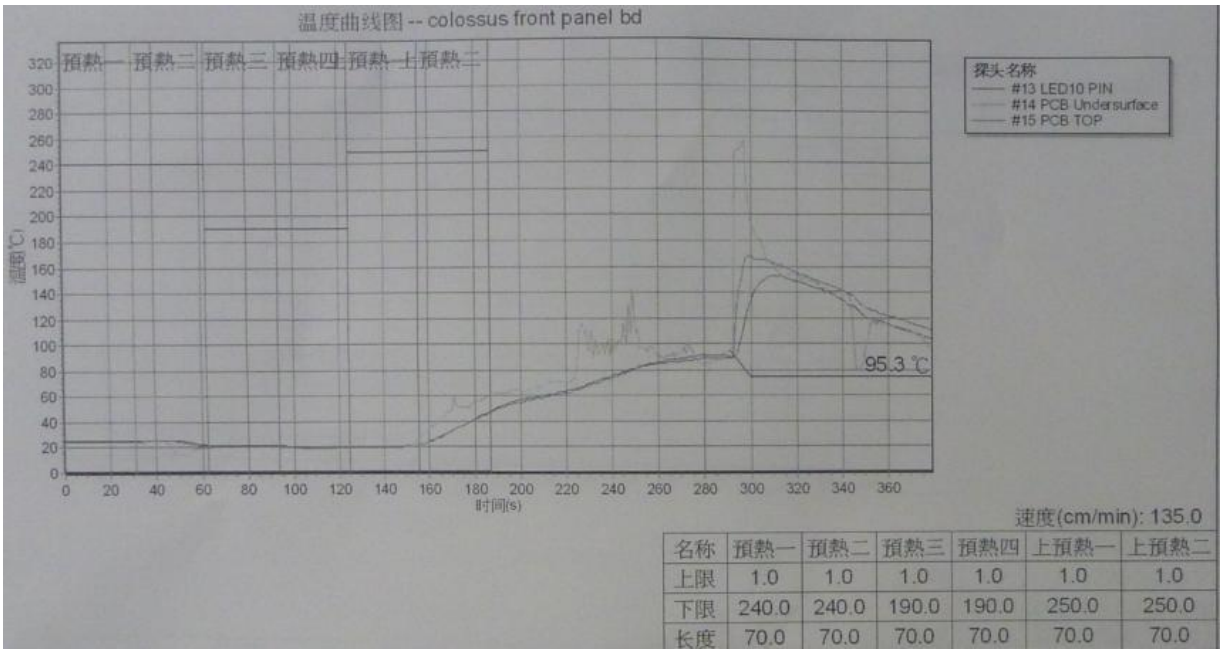
is AlInGap Yellow Orange,Dominant Wavelength is 605 nm

is AlInGap Green,Dominant Wavelength is 572 nm

PIN CONNECTION

No	CONNECTION
1	ANODE A ,CATHODE B
2	CATHODE A , ANODE B
3	ANODE C ,CATHODE D
4	CATHODE C , ANODE D
5	ANODE E ,CATHODE F
6	CATHODE E , ANODE F
7	ANODE G ,CATHODE H
8	CATHODE G , ANODE H

WAVE SOLDERING INSTRUCTION



名称	預熱一	預熱二	預熱三	預熱四	上預熱一	上預熱二
上限	1.0	1.0	1.0	1.0	1.0	1.0
下限	240.0	240.0	190.0	190.0	250.0	250.0
长度	70.0	70.0	70.0	70.0	70.0	70.0

AlInGaP GREEN

ABSOLUTE MAXIMUM RATING AT Ta=25°C

PARAMETER	MAXIMUM RATING	UNIT
Power Dissipation Per Segment	70	mW
Peak Forward Current Per Segment (Frequency 1Khz, 10% duty cycle)	60	mA
Continuous Forward Current Per Segment Forward Current Derating from 25℃	25 0.28	mA mA/℃
Operating Temperature Range	-35℃ to +105℃	
Storage Temperature Range	-35℃ to +105℃	
Soldering Conditions : 1/16 inch below seating plane for 5 seconds at 265℃± 5℃		

ELECTRICAL / OPTICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity Per Segment	I_V	8.601	31		mcd	I_F=10mA
Peak Emission Wavelength	λp		571		nm	I_F=20mA
Spectral Line Half-Width	Δλ		15		nm	I_F=20mA
Dominant Wavelength	λd		572		nm	I_F=20mA
Forward Voltage Per Segment	V_F		2.05	2.6	V	I_F=20mA
Reverse Current Per Segment(2)	I_R			100	μA	V_R=5V
Luminous Intensity Matching Ratio (Similar Light Area)	I_V-m			2:1		I_F=10mA

BIN CODE(unit: μcd)

BIN Grade	N1	N2	P1	P2	Q1	Q2	R1	R2	S1	S2
Range	8601 ~ 10900	10901 ~ 13700	13701 ~ 17300	17301 ~ 21820	21821 ~ 27520	27521 ~ 34700	34701 ~ 43750	43751 ~ 55170	55171 ~ 69560	69561 ~ 87710

HUE TABLE (unit:nm)

Hue grade	4	5	6	7	8
Range(nm)	566.1	568.1	570.1	572.1	574.1
If=20mA	568	570	572	574.0	576.0

Tolerance for each Dominate Wavelength is +/- 1 nm

Note:1.Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commision Internationale De L'Eclairage) eye-response curve.

2. Reverse voltage is only for IR test. It can not continue to operate at this situation.

3. Must choose same BIN or close two BIN devices while you assemble 2 or above 2 pcs ND devices for one set application.

TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

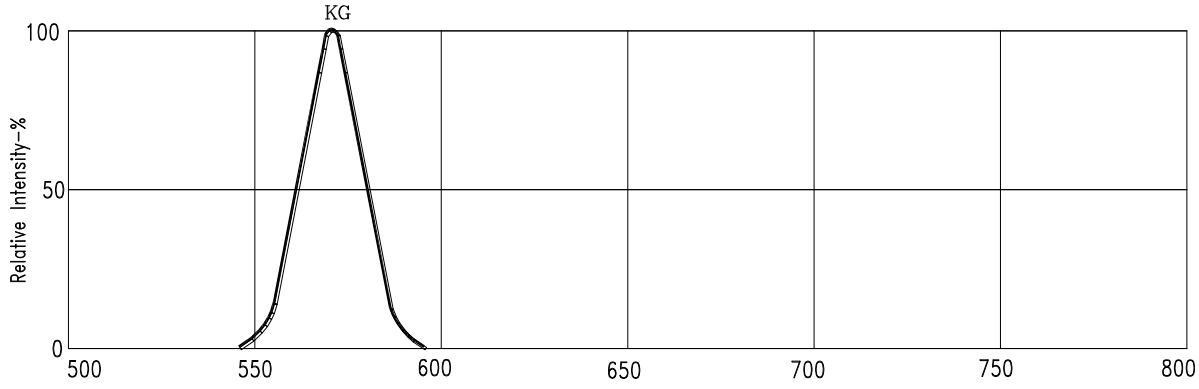


Fig1.Spectral Emission

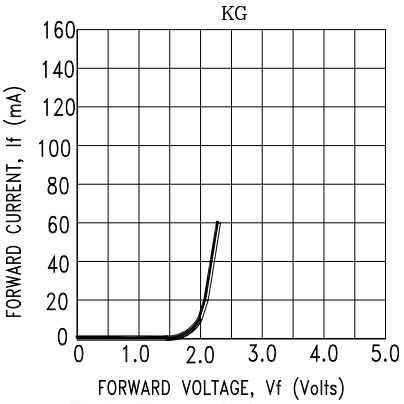


Fig2. Forward Current vs. Forward Voltage

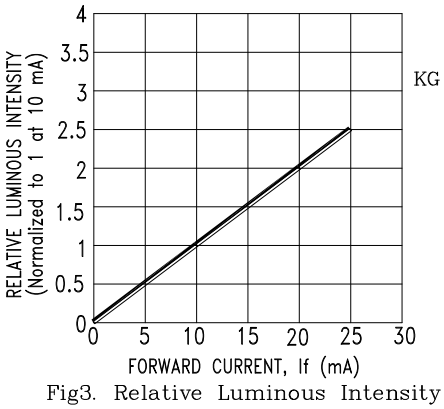


Fig3. Relative Luminous Intensity vs. DC Forward Current

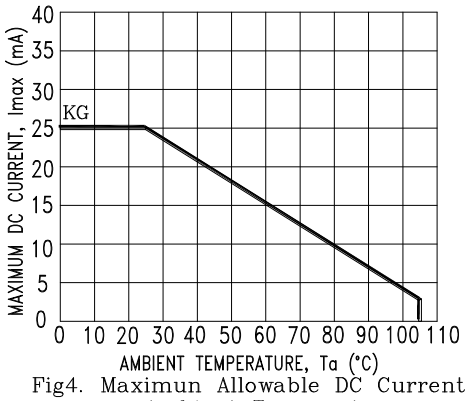


Fig4. Maximun Allowable DC Current vs. Ambient Temperature

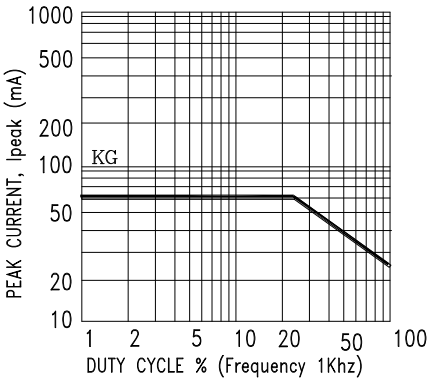


Fig5. Maximum Peak Current vs. Duty Cycle %

NOTE : KG=AlInGaP Green

AlInGaP Yellow Orange

ABSOLUTE MAXIMUM RATING

PARAMETER	MAXIMUM RATING	UNIT
Power Dissipation Per Segment	70	mW
Peak Forward Current Per Segment (Frequency 1Khz, 10% duty cycle)	60	mA
Continuous Forward Current Per Segment Derating Linear From 25℃ Per Segment	25 0.28	mA mA/℃
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ELECTRICAL / OPTICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity Per Segment	I_V	40.9	85		mcd	I_F=10mA
Peak Emission Wavelength	λp		611		nm	I_F=20mA
Spectral Line Half-Width	Δλ		15		nm	I_F=20mA
Dominant Wavelength	λd		605		nm	I_F=20mA
Forward Voltage Per Segment	V_F		2.1	2.6	V	I_F=20mA
Reverse Current Per Segment(2)	I_R			100	μA	V_R=5V
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BIN CODE (unit: μcd)

BIN Grade	R1	R2	S1	S2	T1	T2	U1	U2	V1	V2
Range	34701 ~ 43750	43751 ~ 55170	55171 ~ 69560	69561 ~ 87710	87711 ~ 110700	110701 ~ 139700	139701 ~ 176700	176701 ~ 223500	223501 ~ 282700	282701 ~ 357600

HUE TABLE (unit:nm)

Hue grade	1	2	3	4	5
Range(nm)	602.1	604.1	606.1	608.6	611.1
If=20mA	604.0	606.0	608.5	611.0	613.5

Tolerance for each Dominate Wavelength is +/- 1 nm

Note:1.Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commision Internationale De L'Eclairage) eye-response curve.

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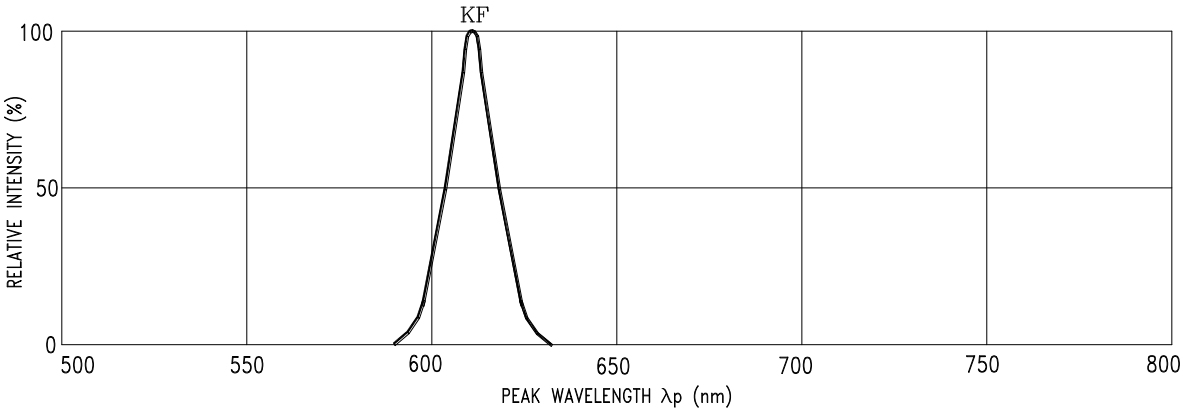
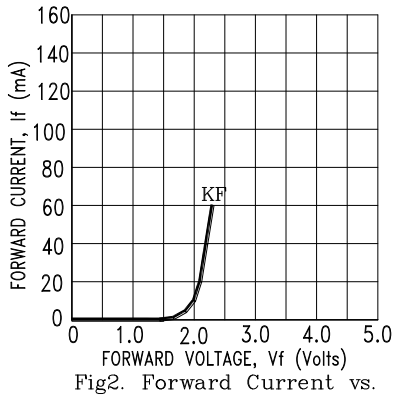


Fig1.Spectral Emission



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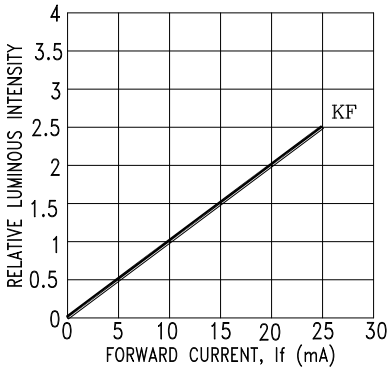

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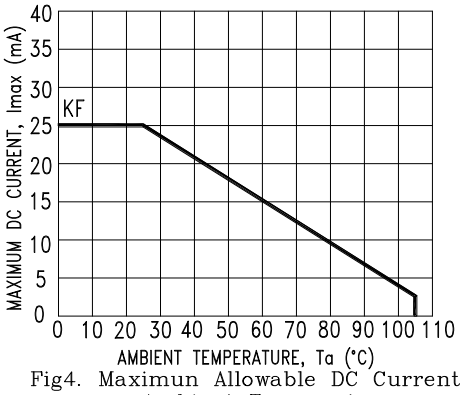

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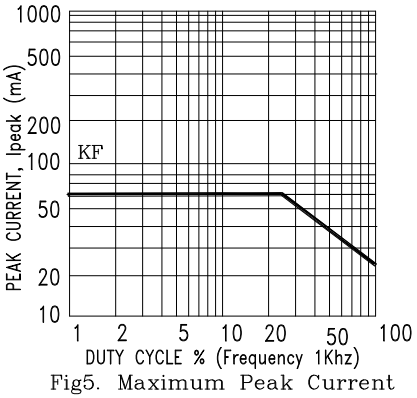

Fig5. Maximum Peak Current vs. Duty Cycle %

NOTE : KF=AlInGaP YELLOW ORANGE