

Features

- High efficiency up to 94%
- Adjustable output current via a potentiometer
- THD <15%
- 3 versions: 3-in-1 dimming, non-dimmable and 3-in-1 dimming + 12V AUX power supply
- Can be dimmed to off
- Flicker free
- All-round protections: over voltage protection and short circuit protection
- Surge protections: L-N: 6kV & L/N-GND: 6kV
- IP54



Applications

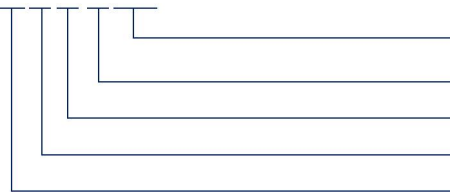
· Shoebox light · high bay light · flood light · wall light

Descriptions

LF-FAx100 is a constant current LED driver. It has high efficiency, high PF and low THD. There is a potentiometer at the top of LED driver that is used to adjust the output current (power). Besides, it conforms to the latest European ErP standard and North America DLC standard.

Product Model

LF - FA A / B / C 100



- 100: rated output power: 100W
- C: 3-in-1 dimming (light sensor optional)
- B: non-dimmable
- A: 3-in-1 dimming + 12V (light sensor optional)
- F: non-isolated design; A: serial number

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■ Electrical Characteristics

| Model | | LF-FAA100 | LF-FAB100 | LF-FAC100 |
|--|---|--|-----------|-----------|
| Output | Adjustable Output Current (via a potentiometer) | 250-500mA | | |
| | Adjustable Output Current (via a DIP switch) (optional) | 70%-100% @maximum output current (set by user and for FAA/FAC series only) | | |
| | Output Voltage | 180-260Vdc (LED) | | |
| | Output Power | 100W max. | | |
| | Current Tolerance | ±8% | | |
| | Startup Time | 120Vac <1S @full load; 230Vac <0.5S @full load | | |
| | Temperature Drift | ±3% @Tc 25-75°C | | |
| Input | Input Voltage | 100-277Vac (voltage limit: 90-305Vac) | | |
| | DC Input Voltage | 141-276Vdc | | |
| | Input Current | 1.3A max. | | |
| | PF | ≥0.98/120Vac @full load; ≥0.95/230Vac @full load | | |
| | THD | ≤15% @full load | | |
| | Efficiency | ≥91%/120Vac @260Vdc/0.38A; ≥93%/230Vac @260Vdc/0.38A | | |
| | Inrush Current | <80A/350uS @230Vac | | |
| | Standby Power Consumption | ≤0.5W @220Vac | | |
| 12V AUX Power Supply (For FAA Series) | Output Voltage | +12Vdc (11-14V) | | |
| | Output Current | 200mA max. | | |
| | Dynamic Load | Please make sure that the dynamic load matches for the LED driver. | | |
| | Ripple Voltage | ≤1V | | |
| Protections | Surge | L-N: 6kV (2Ω), L/N-PE: 6kV (12Ω) | | |
| | Open Circuit | Open circuit voltage ≤310Vdc | | |
| | Short Circuit | ≤15W (The LED driver will recover by itself and will not be damaged even in the state of short circuit for a long time.) | | |
| | Grounding Resistance | ≤0.1Ω @25A/60S | | |
| | Insulation Resistance | ≥10MΩ @I/P-PE O/P-PE: 500Vdc/60S/25°C/70%RH | | |
| Environment Descriptions | Casing Temperature | -40°C - +90°C @120-277Vac | | |
| | Operating Humidity | 0-95%RH (without condensation) | | |
| | Storage Temperature/ Humidity | -40°C~+80°C (6 months in Class I environment); 0-95%RH (without condensation) | | |
| | Atmospheric Pressure | 86-106kPa | | |

■ Electrical Characteristics

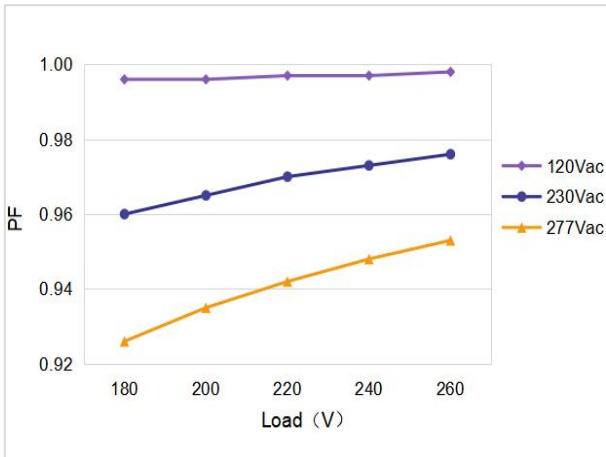
| | | |
|--------------------------|---|---|
| Safety and EMC | Certifications | TUV-ENEC, CE, CB, RCM, SAA, FCC, UL |
| | Withstanding Voltage | L-N/PG: 1.5kVac, <5mA, 60S |
| | Safety Standards | ENEC: EN61347-1:2015, EN61347-2-13: 2014/A1: 2017, EN62384 2016/A1: 2009 CE-LVD: EN61347-2-13: 2014/A1: 2017, EN61347-1: 2015, EN62493: 2015 CB: IEC61347-1: 2015, IEC61347-2-3: 2014, IEC61347-2-13: 2014/AMD1: 2016 SAA: AS 61347.2-13: 2018 RCM: AS 61347.2-13: 2018 UL: UL8750, CSA 250.13 |
| | EMI | CE-EMC/RCM: EN55015, EN61000-3-2, EN61000-3-3 FCC: PART 15B |
| | EMS | CE-EMC/RCM: EN61000-4-2, 3, 4, 5, 6, 11 Conforms to IEC61000-4-2, 3, 4, 5, 6, 8, 11, 12; IEC61547 |
| | Ringing Wave | 4kV |
| | ESD | Air 8kV, touch 4kV (Class B) |
| | Other Parameters | IP Rating |
| RoHS | | RoHS 2.0 (EU) 2015/863 |
| Warranty | | 5 yrs (Tc≤75°C) |
| MTBF | | > 1000Khours@Telcordia SR-332 Issue4 |
| Testing Equipment | Digital power meter: CHROMA66202, oscilloscope: Tektronix DPO3014, DC electronic load: M9712B, LED board, constant temperature and humidity chamber; Everfine EMS61000-5B: Everfine EMS61000-4A, spectroanalyzer: KH3935, withstanding voltage tester: TH9201B, flicker tester (flicker-free coefficient test) 60N-01, etc. | |
| Testing Remarks | The above parameters are tested at the ambient temperature of 25°C, humidity of 50%, full load and input voltage of 230Vac without any special remarks. | |

■ **Electrical Characteristics**

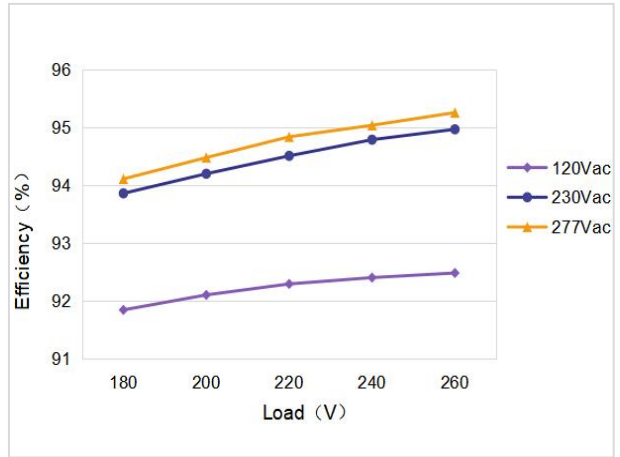
| | |
|---------------------------|--|
| Additional Remarks | <ol style="list-style-type: none"> 1. It is recommended that user install over voltage protection, under voltage protection and surge protection devices in the power supply circuits of light fixtures to ensure electricity safety. 2. The PC shade, casing and plug for assembling the LED driver in the light fixture must meet the fire rating of UL94-V0 or above. 3. The LED driver used in combination with the end device is one of the accessories in the whole light fixture, and its EMC is not only susceptible to the driver itself, but to the LED light fixture and the whole light fixture's wiring. Thus, the manufacturer of LED light fixture should re-confirm the EMC performance of LED driver before the whole light fixture is finished. 4. It is suggested that user use a slotted screwdriver or a Philips to adjust the output current of LED driver, otherwise the potentiometer may be damaged. (The screwdriver should have good insulation at the head, body and handle, and the screwdriver with a 2mm head is recommended as well. What's more, please pay attention that the intensity of torque not exceed 0.5KN.m) 5. When using the LED driver, please pay attention that the total output power not exceed the maximum rated output power, otherwise the warranty service of LED driver would be failed. 6. The withstanding voltage of LED beads and aluminum substrates must > 2.5kVac. 7. Lifud reserves the right to interpret any of the above parameters. |
|---------------------------|--|

■ **Product Characteristic Curves**

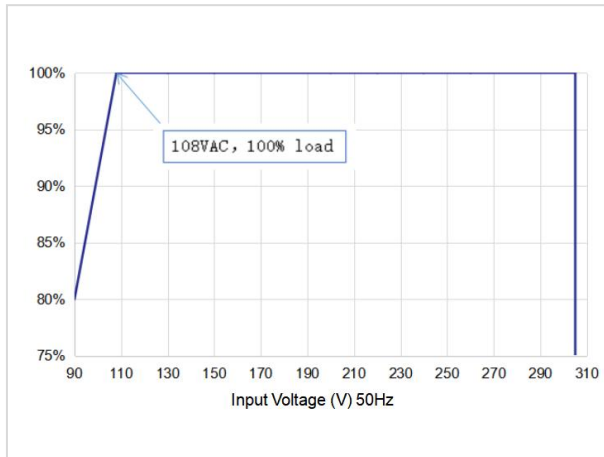
PF Curve



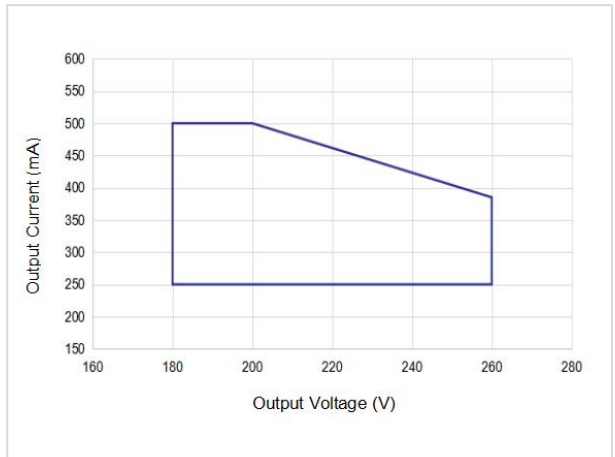
Efficiency Curve



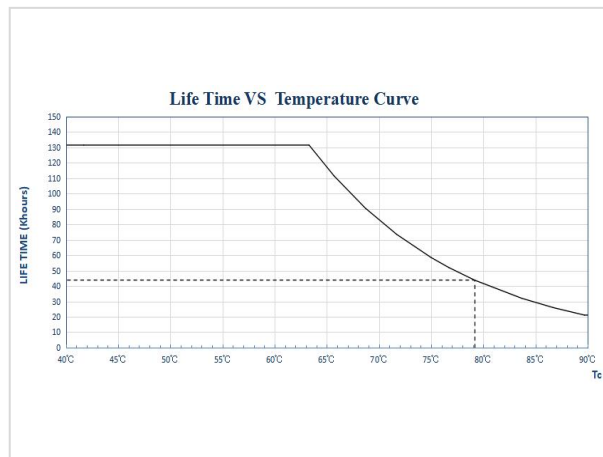
Load Derating Curve



Power Curve



Lifetime Curve



■ Dimming Operation Instructions

Adjustable output current via a built-in potentiometer (FAA/AB/AC series)

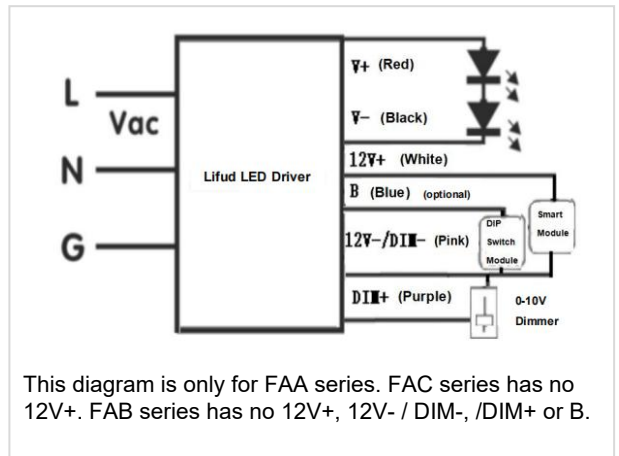
| Parameter | Minimum Value | Typical Value | Maximum Value | Note |
|----------------|---------------|---------------|---------------|--|
| Output Current | 250mA | - | 500mA | The total output power should NOT exceed 100W |

The initial current of FAA or FAC series (DIP switch version) is adjustable via the potentiometer; the blue wire is connected to DIP switch module (the adjustment of current via the DIP switch is susceptible to the one via the potentiometer). Besides, the adjustment of resistor ranges from 110Ω to 100KΩ, thus when user set the output current of LED driver, its adjustment is supposed to range from 70% to 100% of the maximum one so that the output current can meet certifications' standards.

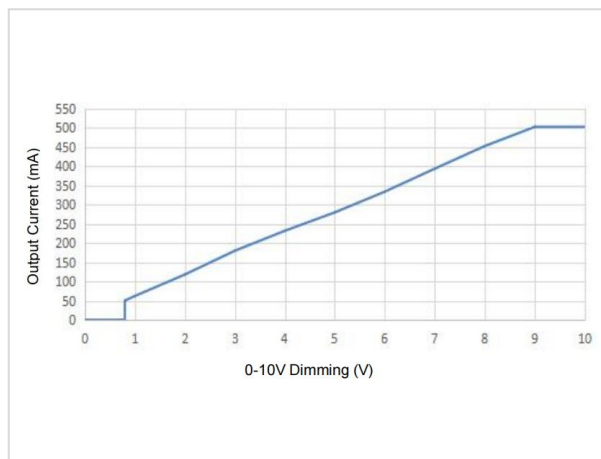
0-10V Dimming Operation

- Connect 0-10V signal to DIM terminal.
- In 0-10V dimming mode, when the input voltage is $0.8V \pm 0.15$, the light turns off. When it's $1V \pm 0.15$, the light turns on.
- Dimming depth: 10%
- DIM+/- (without signal connected): 100% rated current output

Wiring Diagram of 0-10V Dimming



Dimming Curve of FAA and FAC Series

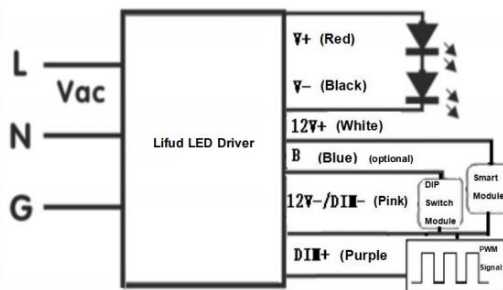


Input: 230Vac, output: 200Vdc/500mA (The data is measured by Lifud 0-10V dimmer and the chart is for reference only)

PWM Dimming Operation

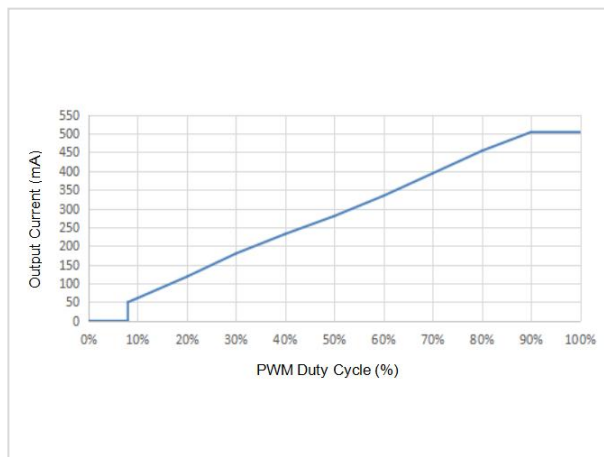
- Connect PWM signal to DIM terminal.
- Dimming depth: 10%
- Compatible signal: 1000-3000(Hz), amplitude: 9-10(V)
- DIM+/- (without signal connected): 100% rated current output

Wiring Diagram of PWM Dimming



This diagram is only for FAA series. FAC series has no 12V+. FAB series has no 12V+, 12V- / DIM-, /DIM+ or B.

Dimming Curve of FAA and FAC Series

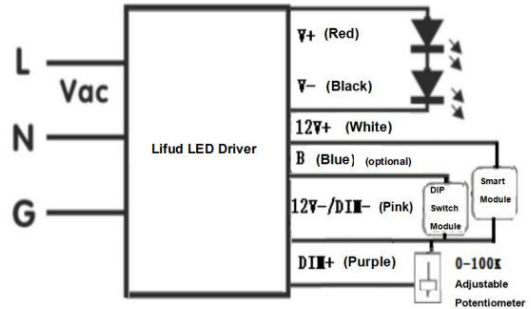


Input: 230Vac, output: 200Vdc/500mA (The data is measured by Lifud PWM signal generator and the chart is for reference only)

Rx Dimming Operation

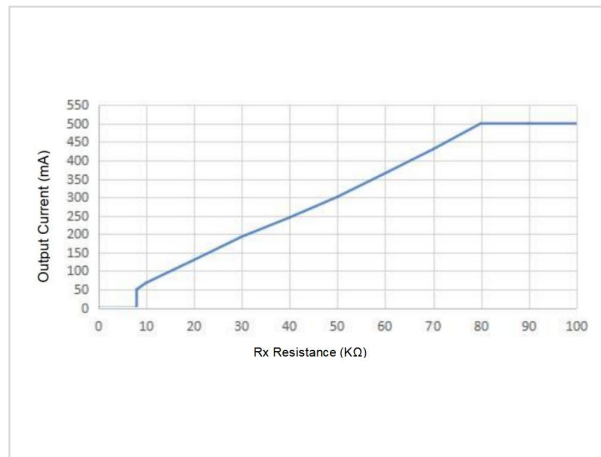
- Connect Rx signal to DIM terminal.
- Range: 0-100KΩ
- DIM+/- (without signal connected): 100% rated current output

Wiring Diagram of Rx Dimming



This diagram is only for FAA series. FAC series has no 12V+. FAB series has no 12V+, 12V- / DIM-, /DIM+ or B.

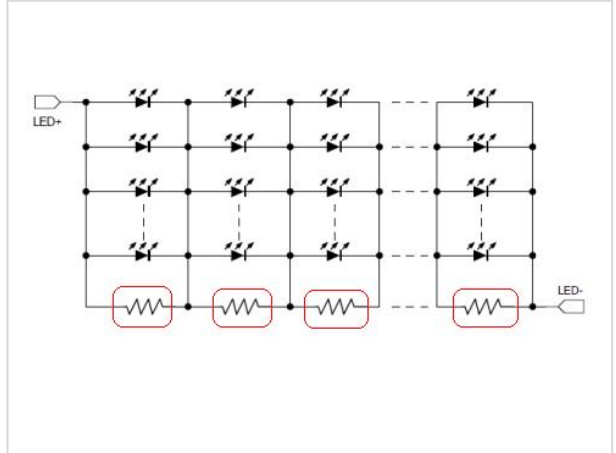
Dimming Curve of FAA and FAC Series



Input: 230Vac, output: 200Vdc/500mA (The data is measured by resistance dimmer and the chart is for reference only)

Dim-to-Off Operation

When the dimming signal is 0V, the LED driver has no output, but there exists junction capacitance between the aluminum substrate's copper foil and the grounding wire, which will make the LED bead glow slightly. Thus, it is necessary to attach a 3-5KΩ resistor (resistor size: 1206) to LED beads in series connection, and the connection method is as shown in the right figure.



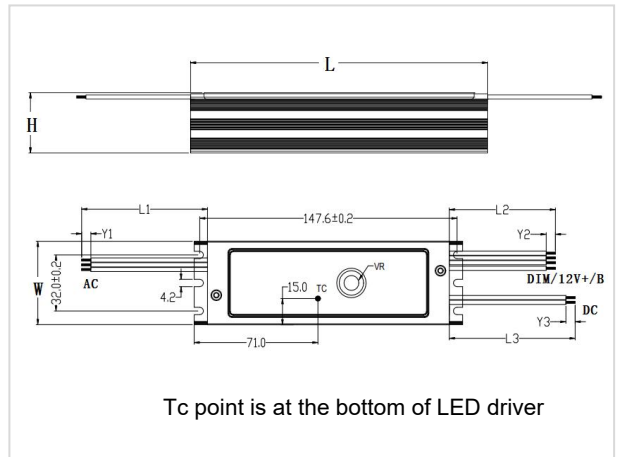
■ Structure & Dimensions (unit: mm; tolerance: ±2mm)

Wire Specifications

| Type | Input Wire | Output Wire | Dimming Wire & AUX Power Supply Wire |
|--------|---|---|---|
| FAA | PVC Electronic Wire UL1015 18AWG $\Phi 2.8 \pm 0.5$ | PVC Electronic Wire UL1015 18AWG $\Phi 2.8 \pm 0.5$ | PVC Electronic Wire UL1015 22AWG $\Phi 2.3 \pm 0.5$ |
| FAB | PVC Electronic Wire UL1015 18AWG $\Phi 2.8 \pm 0.5$ | PVC Electronic Wire UL1015 18AWG $\Phi 2.8 \pm 0.5$ | / |
| FAC | PVC Electronic Wire UL1015 18AWG $\Phi 2.8 \pm 0.5$ | PVC Electronic Wire UL1015 18AWG $\Phi 2.8 \pm 0.5$ | PVC Electronic Wire UL1015 22AWG $\Phi 2.3 \pm 0.5$ |
| Color | AC-L Black; AC-N White; PG Green | LED+ Red; LED- Black | DIM+ Purple; DIM- Pink; 12V+ White; B Blue (optional) |
| Length | 250 ± 20mm (L1) | 300 ± 20mm (L3) | 220 ± 20mm (L2) |
| Tinned | 10 ± 1.5mm (Y1) | 10 ± 1.5mm (Y3) | 10 ± 1.5mm (Y2) |

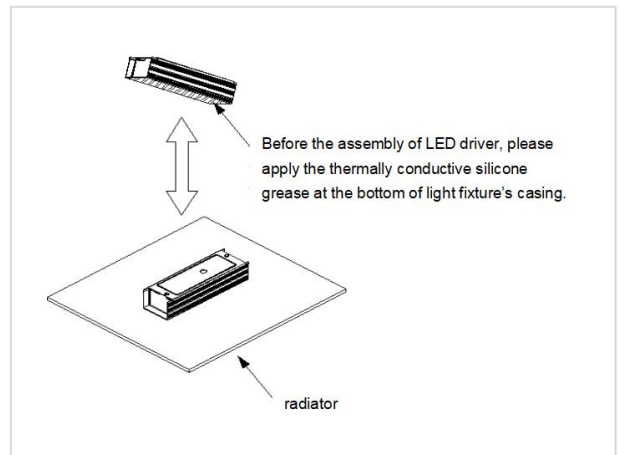
Casing Dimensions

| Description | Symbol | Unit (mm) |
|-------------|--------|-----------|
| Length | L | 154 |
| Width | W | 48 |
| Height | H | 34 |



■ Heat Dissipation Instruction

It is recommended that the thermally conductive silicone grease be applied among the light fixture's casing, radiator and LED driver. Moreover, the TC temperature shall not exceed +90°C.



■ Packaging Specifications

| Model | LF-FAA/FAB/FAC100 |
|-------------|---------------------------------------|
| Carton Size | 420×305×225mm (L×W×H) |
| Quantity | 9 pcs/layer; 3 layers/ctn; 27 pcs/ctn |
| Weight | 0.350±0.1 kg/pc; 10.5±1.2 kg/ctn |

■ Transportation and Storage

1. Transportation

- Suitable transportation means: vehicles, boats and aeroplanes.
- In transit, it is necessary to prepare awnings for rain or sun protection. Moreover, please keep civilized loading and unloading to prevent the vibration or impact of LED driver as much as possible.

2. Storage

- The storage of LED driver shall conform to the standard of Class I environment. When using LED drivers which have been stored for more than 6 months, please re-test them firstly. Do not use them unless they are tested to be qualified.

Cautions

- Please use Lifud LED driver according to its parameters in the specification, otherwise the LED driver may malfunction.
- Using any incompatible light fixtures or those that have not been certified may cause fire, explosion or other risks.
- Man-made damage is beyond the scope of Lifud warranty service.

Remark: Lifud Technology Co., Ltd. reserves the right to interpret any contents of this specification.