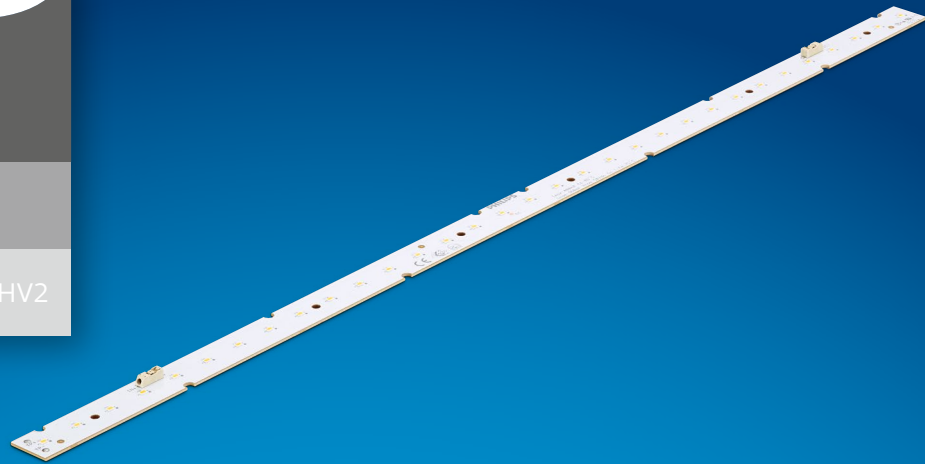


PHILIPS

CertaFlux

LED system

LED Strip 2ft 2200lm HV2



Datasheet

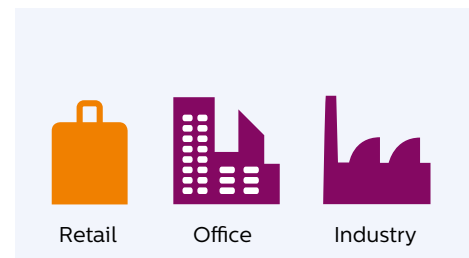
CertaFlux LED Strip

CertaFlux LED Strip systems are designed to enable linear LED luminaires for high volume markets. CertaFlux LED Strip offers good product performance and functionality, with good quality of light, meeting market needs for basic lighting.

Key features and benefits

- LED module efficiency up to 127 lm/W
- Long life-time: >50,000 hours
- High color rendering (CRI >80)
- Color consistency of 4 SDCM
- Choice of color temperatures (3000 K, 4000 K and 6500 K)
- Wide temperature (Tc) range from -40 °C to +85 °C
- Push-in connectors enabling automated wiring
- Three year system warranty

Suitable for:



April 2015



Ordering data

Commercial product name	EOC	12NC
CertaFlux LED Strip 2ft 2200lm 830 HV2	8718696 479650 00	9290 009 72006
CertaFlux LED Strip 2ft 2200lm 840 HV2	8718696 479674 00	9290 009 72106
CertaFlux LED Strip 2ft 2200lm 865 HV2	8718696 479698 00	9290 009 72206

Drive currents and case temperatures

Parameter	Nominal*	Life**	Max***	Unit
I (current through the LED module)	360	400	480	mA
Tc (case temperature at Tc point)	60	75	85	°C

* Nominal value at which typical performance is specified.

** Value at which lifetime L70B50 ≥ 30,000 hour is specified.

*** Maximum value for safe operation; do not operate above this value.

Optical characteristics - table per color (CCT)

CertaFlux LED Strip 2 ft 2200 lm 830 HV2

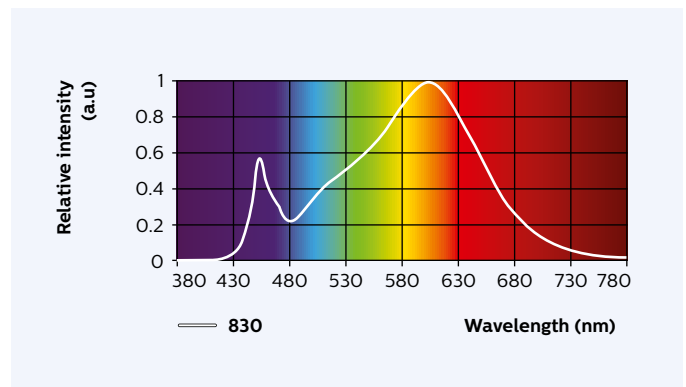
Parameter	Min	Typ	Max	Unit
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)*		(0.4338, 0.4030)		-
CRI	80			-
Radiation angle		120		deg

Color consistency of 4 SDCM, averaged over the module.

Operation point	830	lm	lm/W
80% I-nom 288 mA	Tc 25 °C	1822	126
	Tc-nom 60 °C	1696	120
	Tc-life 75 °C	1638	117
I-nom 360 mA	Tc 25 °C	2190	118
	Tc-nom 60 °C	2036	112
	Tc-life 75 °C	1965	109
I-life 400 mA	Tc 25 °C	2384	114
	Tc-nom 60 °C	2214	108
	Tc-life 75 °C	2137	105

Tolerance for flux data is ±7.5%.

Tolerance for efficacy data is ±10%.



CertaFlux LED Strip 2 ft 2200 lm 840 HV2

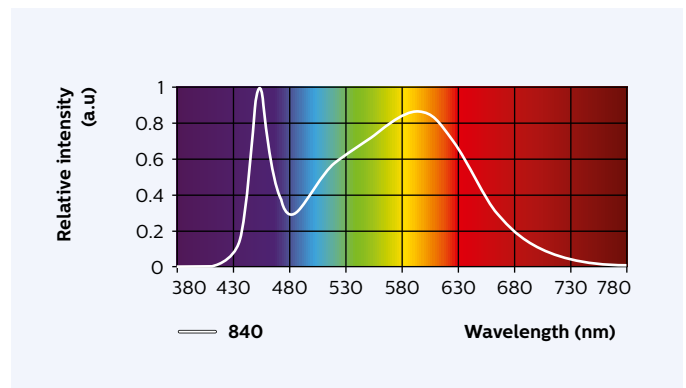
Parameter	Min	Typ	Max	Unit
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)*		(0.3818, 0.3797)		-
CRI	80			-
Radiation angle		120		deg

Color consistency of 4 SDCM, averaged over the module.

Operation point	840	lm	lm/W
80% I-nom 288 mA	Tc 25 °C	1970	136
	Tc-nom 60 °C	1832	129
	Tc-life 75 °C	1770	125
I-nom 360 mA	Tc 25 °C	2367	127
	Tc-nom 60 °C	2200	120
	Tc-life 75 °C	2124	117
I-life 400 mA	Tc 25 °C	2576	122
	Tc-nom 60 °C	2393	116
	Tc-life 75 °C	2309	113

Tolerance for flux data is ±7.5%.

Tolerance for efficacy data is ±10%.



CertaFlux LED Strip 2 ft 2200 lm 865 HV2

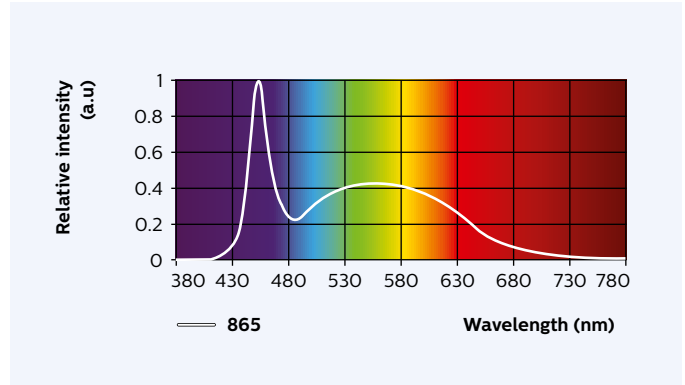
Parameter	Min	Typ	Max	Unit
Correlated color temperature (CCT)		6500		K
Color coordinates (CIEx, CIEy)*		(0.3123, 0.3282)		-
CRI	80			-
Radiation angle		120		deg

Color consistency of 4 SDCM, averaged over the module.

Operation point	865	lm	lm/W
80% I-nom 288 mA	Tc 25 °C	1970	136
	Tc-nom 60 °C	1832	129
	Tc-life 75 °C	1770	125
I-nom 360 mA	Tc 25 °C	2367	127
	Tc-nom 60 °C	2200	120
	Tc-life 75 °C	2124	117
I-life 400 mA	Tc 25 °C	2576	122
	Tc-nom 60 °C	2393	116
	Tc-life 75 °C	2309	113

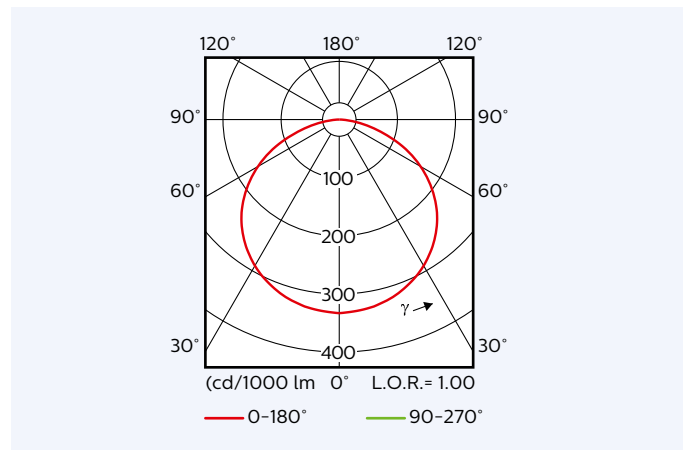
Tolerance for flux data is $\pm 7.5\%$.
Tolerance for efficacy data is $\pm 10\%$.

Measurement tolerance is $\pm 2.5\%$ for the flux data and 5% for the efficacy data.
* Measurement tolerance is ± 0.007



Beam shape

The Philips LED module generates a Lambertian beam shape, which is a pragmatic starting point for OEMs wishing to design secondary optics.



Electrical characteristics

Parameter	Min	Typ	Max	Unit
Nominal current		360		mA
Forward voltage	44.8	51	51.2	V
Power consumption	16.1	18.4	18.4	W
Energy efficiency label		A+		
Minimum dimming for performance	10			%
Number of modules per chain			N/A	
Bins		N/A		

Specifications stated at Tc-nom and I-nom.

Performance over life

Lumen maintenance

Operation point	Time x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I-nom 288 mA	Tc 25 °C	>50	>50	>50	>50	48	47	24	23	22
	Tc-nom 60 °C	>50	>50	>50	34	33	32	16	15	15
	Tc-life 75 °C	47	45	44	29	28	27	14	13	13
I-nom 360 mA	Tc 25 °C	>50	>50	>50	48	46	45	23	22	21
	Tc-nom 60 °C	>50	50	49	33	31	30	15	15	14
	Tc-life 75 °C	45	43	42	28	27	26	13	13	12
I-life 400 mA	Tc 25 °C	>50	49	48	32	30	30	15	14	14
	Tc-nom 60 °C	35	33	32	22	21	20	10	10	9
	Tc-life 75 °C	30	29	28	19	18	17	9	8	8

Values in the table are based on available LM80 LED data (9000h). Lumen maintenance will be updated once additional measurement data becomes available.

Parameter	Min	Typ	Max	Unit
$\Delta u'v'$ at 6000 hours			0.007	-

Specifications stated while Tc < Tc-life and I < I-life.

Absolute maximum ratings

Parameter	Min	Typ	Max	Unit
Current through the LED module (I-max)			480	mA
Case temperature (Tc-max)			85	°C
Power rated at U-max and I-max			25.2	W
ESD (direct contact)			8	kV
ESD (air)			15	kV
Working voltage (between input to metal mounting plate)			51	Vdc
Voltage strength (Input to metal mounting plate)			1102	Vac
Ambient temperature	-40			°C

Wiring

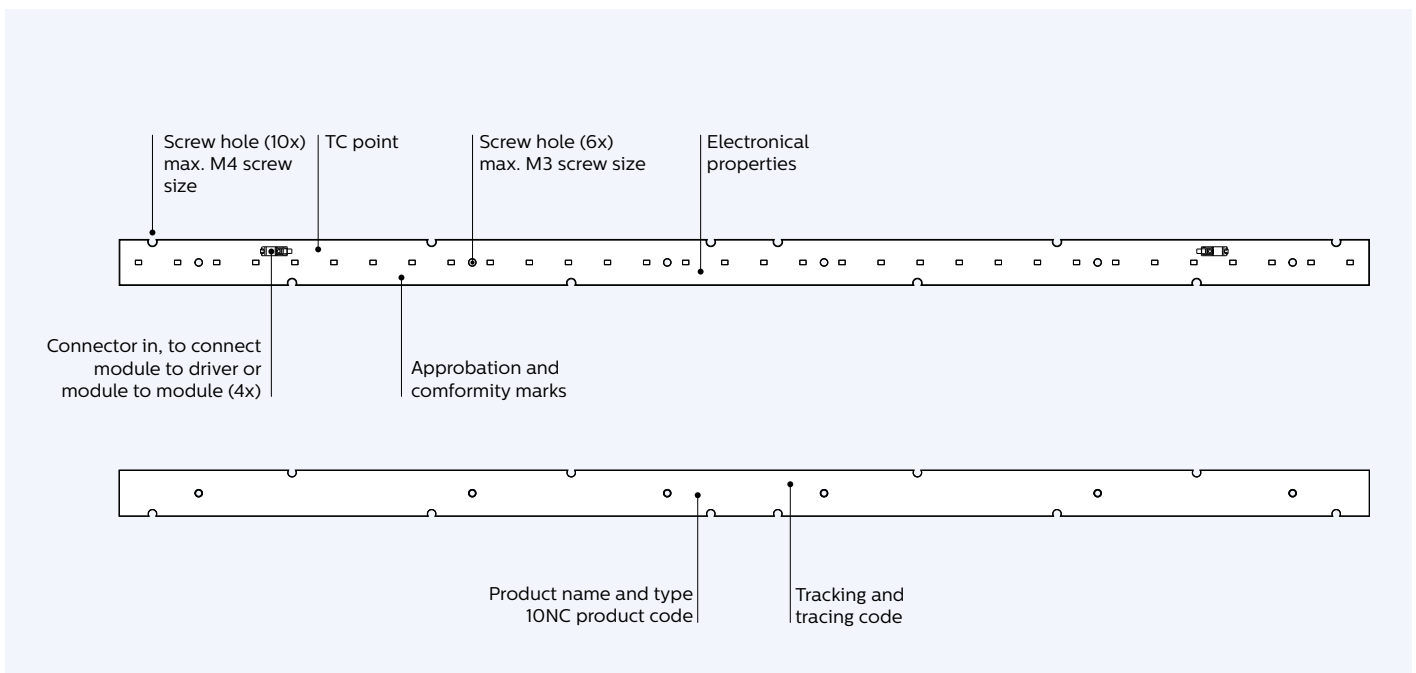
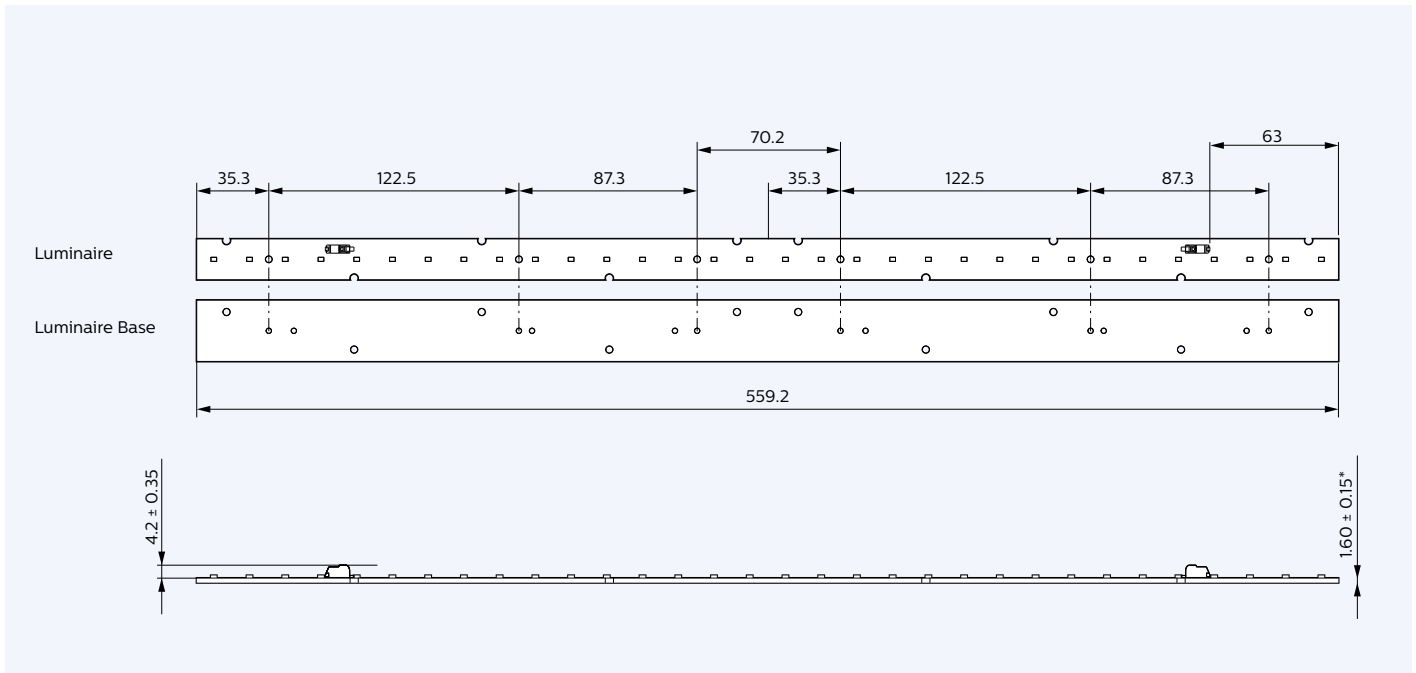
Specification item	Value	Unit	Condition
Input wire cross-section	0.2...0.75	mm ²	Solid
	18...24	AWG	
	0.3...0.5	mm ²	Stranded
	20...22	AWG	
Input wire strip length	7.5..8.5	mm	
Tested cable length	4000	mm	Total length of wiring including LED modules, one way

Connector suited for robot wiring.

Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	558.9	559.2	559.5	mm
Width	19.8	20	20.6	mm
Height excl. connector	1.45	1.6	1.75	mm
Height incl. connector	3.85	4.2	4.55	mm
Warpage (IPC-TM-650)			2.1	mm

Bow & Twist of the PCB after production tested and released according IPC-TM-650 2.4.22.



Application information

Compliance and approval

IEC / EN 62031, IEC / EN 62471

Photobiological safety

Risk group: RG0 for 830 and 840

Risk group: RG2 for 865*

* The LED module should be positioned so that prolonged staring into the LED module at a distance closer than 0,23m is not expected.

Environmental

RoHS

Application information

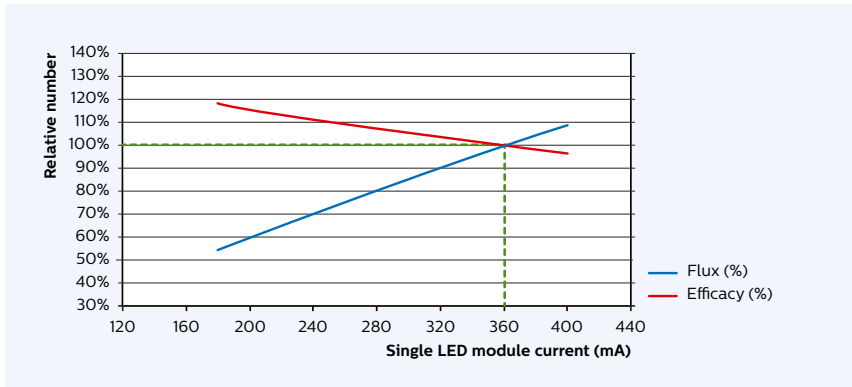
Zhaga - compliant

IP rating	No IP rating
Overheating protection	No protection
Luminaire class	IEC Class I or Class II

Warranted number of full thermal product cycles at which the survival rate of the population $\geq 90\%$, at 25 °C ambient temperature

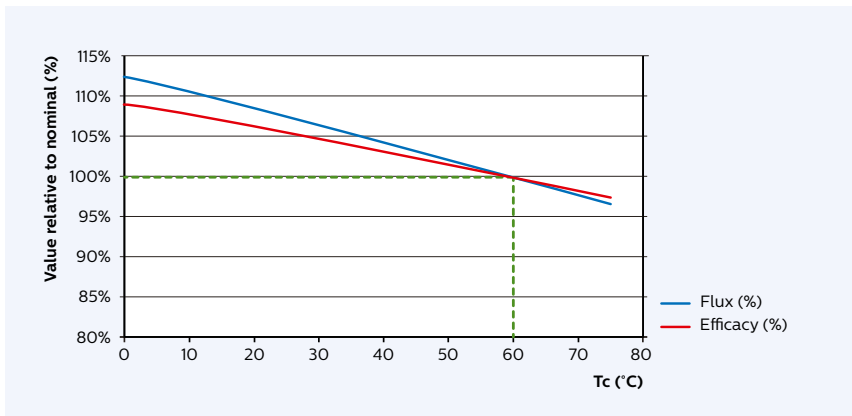
Case temperature Tc [°C]	Amount of cycles
25	14,600
30	
35	14,600
40	
45	
50	14,600
55	
60	
65	14,600
70	14,000
75	12,500

Tuning information



Flux and efficacy versus current

	I [mA]	Flux [%]	Efficacy [%]
(I-life)	400	109%	97%
	387	106%	98%
	373	103%	99%
(I-nom)	360	100%	100%
	342	96%	102%
	324	91%	103%
	306	87%	105%
	288	83%	107%
	270	78%	108%
	252	74%	110%
	234	69%	112%
	216	64%	114%
	198	59%	116%
(I-nom x 50%)	180	55%	118%

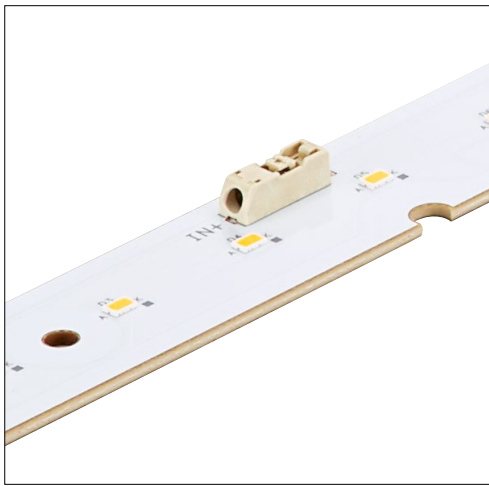
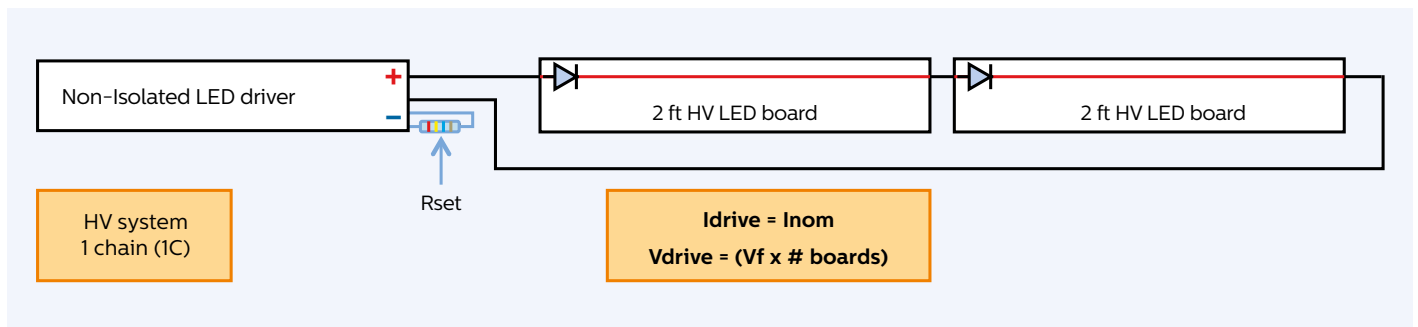


Flux and efficacy versus temperature at Tc

	Tc [°C]	Flux [%]	Efficacy [%]
(Tc-life)	75	97%	97%
	70	98%	98%
	65	99%	99%
(Tc-nom)	60	100%	100%
	55	101%	101%
	50	102%	102%
	45	103%	102%
	40	104%	103%
	35	105%	104%
	30	106%	105%
	25	107%	106%
	20	108%	106%
	15	109%	107%
10	110%	108%	
5	111%	108%	
(0 degC)	0	112%	109%

Wiring schematic

Examples





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04/2015
Data subject to change