

PHILIPS

CertaFlux

LED system

LED Strip 2ft 1550lm HV2



Datasheet

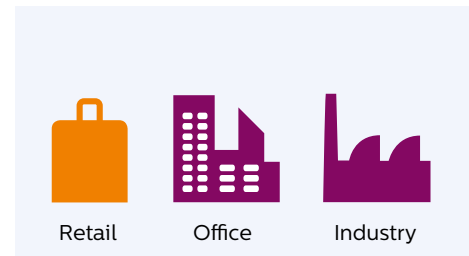
CertaFlux LED Strip

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 1550lm 830 HV2	8718696 479599 00	9290 009 71706
CertaFlux LED Strip 2ft 1550lm 840 HV2	8718696 479612 00	9290 009 71806
CertaFlux LED Strip 2ft 1550lm 865 HV2	8718696 479636 00	9290 009 71906

Drive currents and case temperatures

Parameter	Nominal*	Life**	Max***	Unit
I (current through the LED module)	330	400	480	mA
Tc (case temperature at Tc point)	50	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 1550 lm 830 HV2

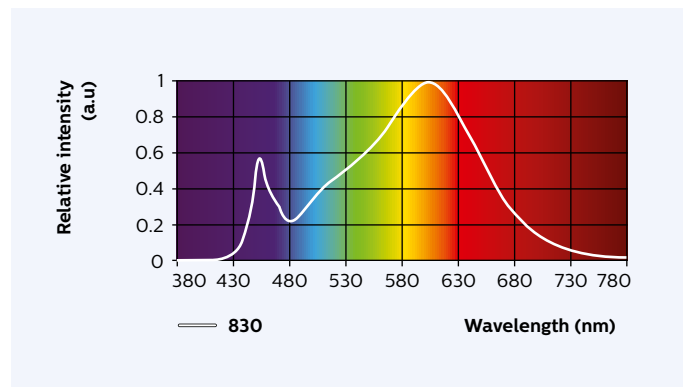
Parameter	Min	Typ	Max	Unit
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)*		(0.4338, 0.4030)		-
CRI	80			-
Radiation angle		120		deg

Color consistency of 4 SDCM, averaged over the module.

Operation point	830	lm	lm/W
80% I-nom 264 mA	Tc 25 °C	1270	129
	Tc-nom 50 °C	1208	125
	Tc-life 75 °C	1142	119
I-nom 330 mA	Tc 25 °C	1530	121
	Tc-nom 50 °C	1454	117
	Tc-life 75 °C	1374	112
I-life 400 mA	Tc 25 °C	1788	114
	Tc-nom 50 °C	1698	109
	Tc-life 75 °C	1603	105

Tolerance for flux data is ±7.5%.

Tolerance for efficacy data is ±10%.



CertaFlux LED Strip 2 ft 1550 lm 840 HV2

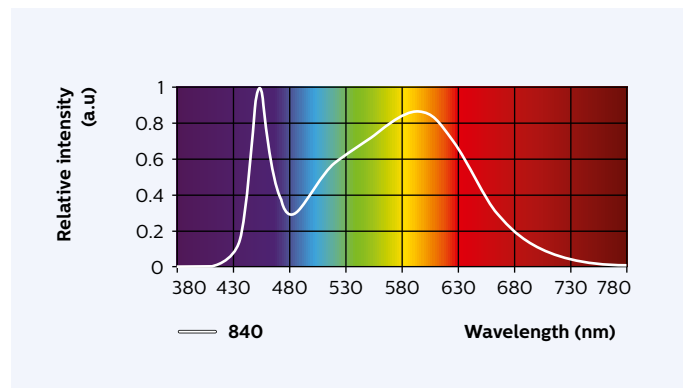
Parameter	Min	Typ	Max	Unit
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)*		(0.3818, 0.3797)		-
CRI	80			-
Radiation angle		120		deg

Color consistency of 4 SDCM, averaged over the module.

Operation point	840	lm	lm/W
80% I-nom 264 mA	Tc 25 °C	1354	136
	Tc-nom 50 °C	1287	131
	Tc-life 75 °C	1217	125
I-nom 330 mA	Tc 25 °C	1631	127
	Tc-nom 50 °C	1550	123
	Tc-life 75 °C	1464	117
I-life 400 mA	Tc 25 °C	1905	119
	Tc-nom 50 °C	1810	115
	Tc-life 75 °C	1708	110

Tolerance for flux data is ±7.5%.

Tolerance for efficacy data is ±10%.



CertaFlux LED Strip 2 ft 1550 lm 865 HV2

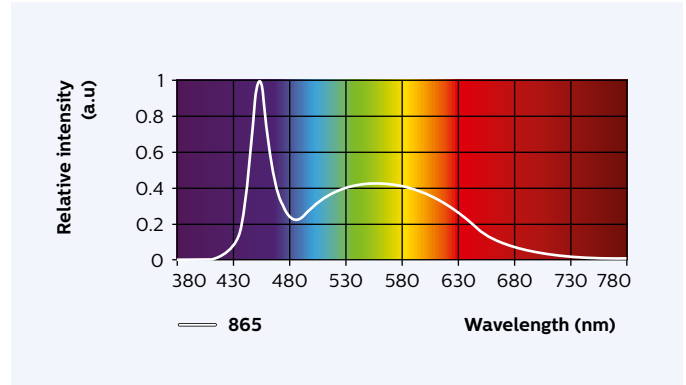
Parameter	Min	Typ	Max	Unit
Correlated color temperature (CCT)		6500		K
Color coordinates (CIEx, CIEy)*		(0.3123, 0.3282)		-
CRI	80			-
Radiation angle		120		deg

Color consistency of 4 SDCM, averaged over the module.

Operation point	865	lm	lm/W
80% I-nom 264 mA	Tc 25 °C	1354	136
	Tc-nom 50 °C	1287	131
	Tc-life 75 °C	1217	125
I-nom 330 mA	Tc 25 °C	1631	127
	Tc-nom 50 °C	1550	123
	Tc-life 75 °C	1464	117
I-life 400 mA	Tc 25 °C	1905	119
	Tc-nom 50 °C	1810	115
	Tc-life 75 °C	1708	110

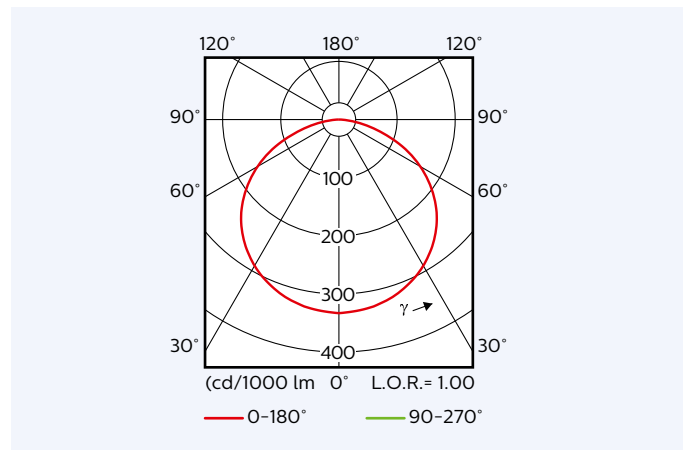
Tolerance for flux data is $\pm 7.5\%$.
Tolerance for efficacy data is $\pm 10\%$.

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		330		mA
Forward voltage	33.6	37.8	38.4	V
Power consumption	11.1	12.5	12.7	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 264 mA	Tc 25 °C	>50	>50	>50	46	43	42	22	20	20
	Tc-nom 50 °C	>50	>50	>50	34	33	32	16	15	15
	Tc-life 75 °C	43	40	39	27	25	25	13	12	12
I-nom 330 mA	Tc 25 °C	>50	>50	>50	44	41	40	21	20	19
	Tc-nom 50 °C	>50	50	49	33	31	30	16	15	14
	Tc-life 75 °C	41	39	37	26	24	23	12	11	11
I-life 400 mA	Tc 25 °C	>50	49	47	32	30	29	15	14	14
	Tc-nom 50 °C	39	37	36	24	23	22	11	11	10
	Tc-life 75 °C	30	28	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			19	W
ESD (direct contact)			8	kV
ESD (air)			15	kV
Working voltage (between input to metal mounting plate)			40	Vdc
Voltage strength (Input to metal mounting plate)			1080	Vac
Ambient temperature	-40			°C

Wiring

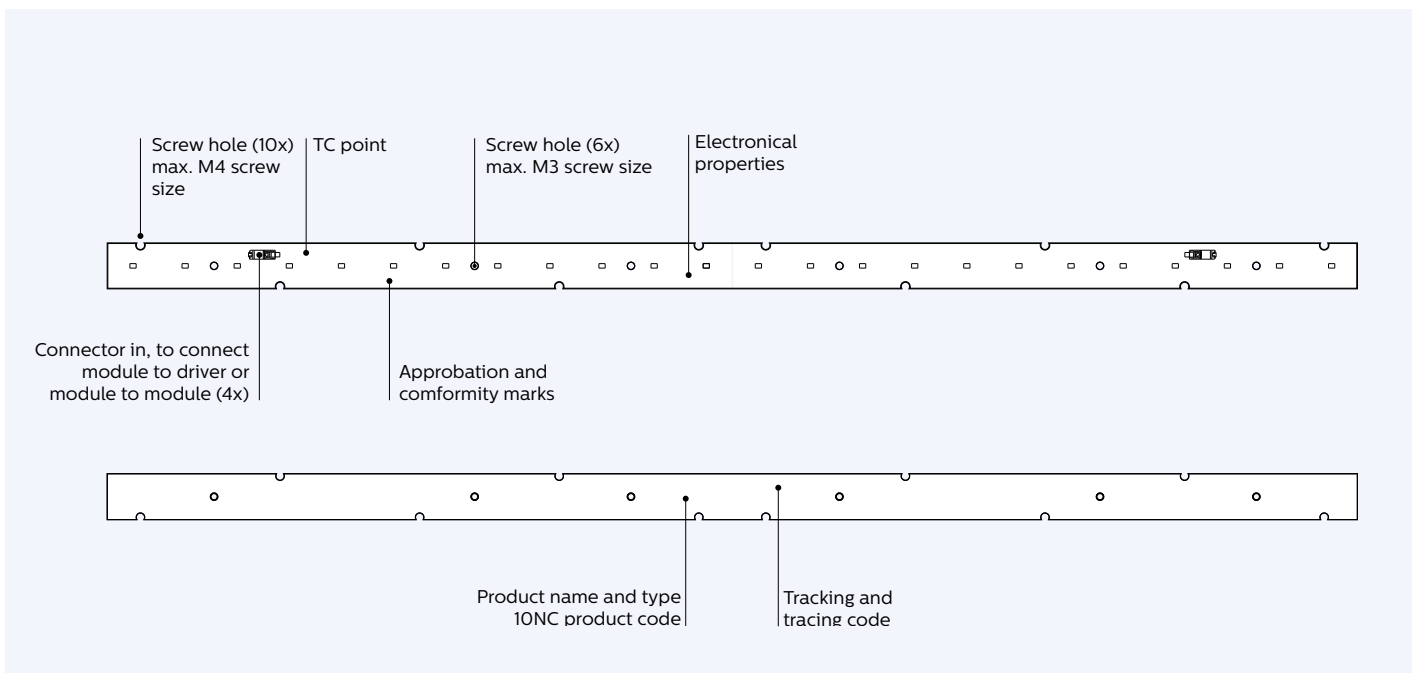
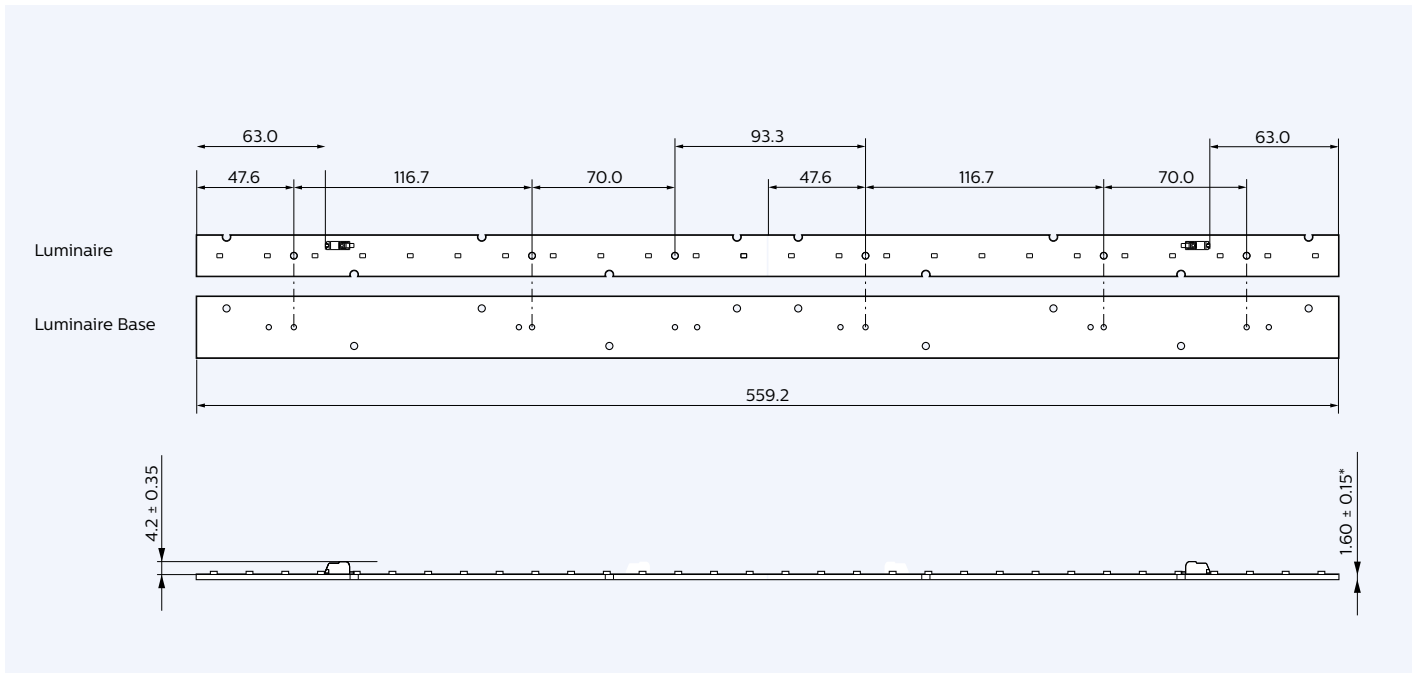
Specification item	Value	Unit	Condition
Input wire cross-section	0.2...0.75	mm ²	Solid
	18...24	AWG	
	0.3...0.5	mm ²	Stranded
	20...22	AWG	
Input wire strip length	7.5..8.5	mm	
Tested cable length	4000	mm	Total length of wiring including LED modules, one way

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

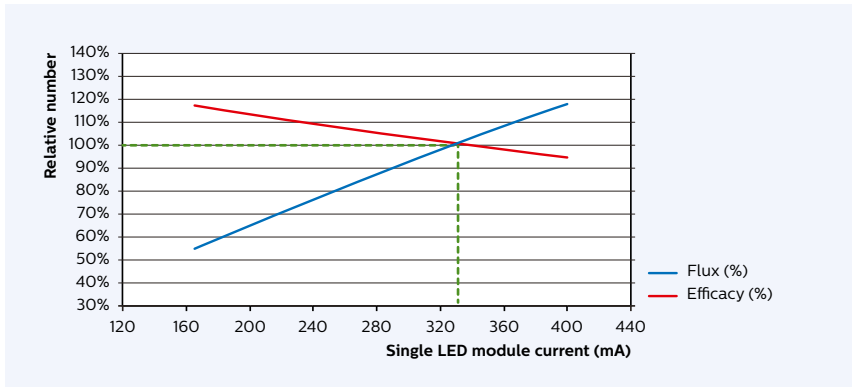
Zhaga - compliant

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

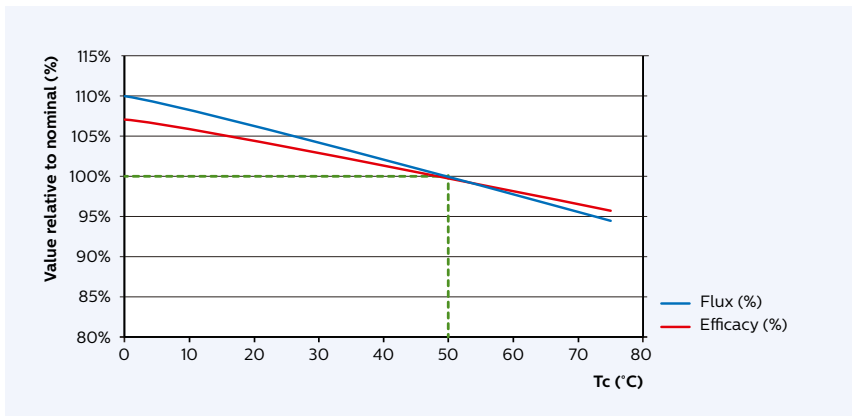
Case temperature Tc [°C]	Amount of cycles
25	14,600
30	
35	14,600
40	
45	
50	14,600
55	
60	
65	14,600
70	14,000
75	12,500

Tuning information



Flux and efficacy versus current

	I [mA]	Flux [%]	Efficacy [%]
(I-life)	400	118%	94%
	377	112%	96%
	353	106%	98%
(I-nom)	330	100%	100%
	314	96%	101%
	297	91%	103%
	281	87%	105%
	264	83%	106%
	248	78%	108%
	231	73%	110%
	215	69%	111%
	198	64%	113%
	182	59%	115%
(I-nom x 50%)	165	54%	117%

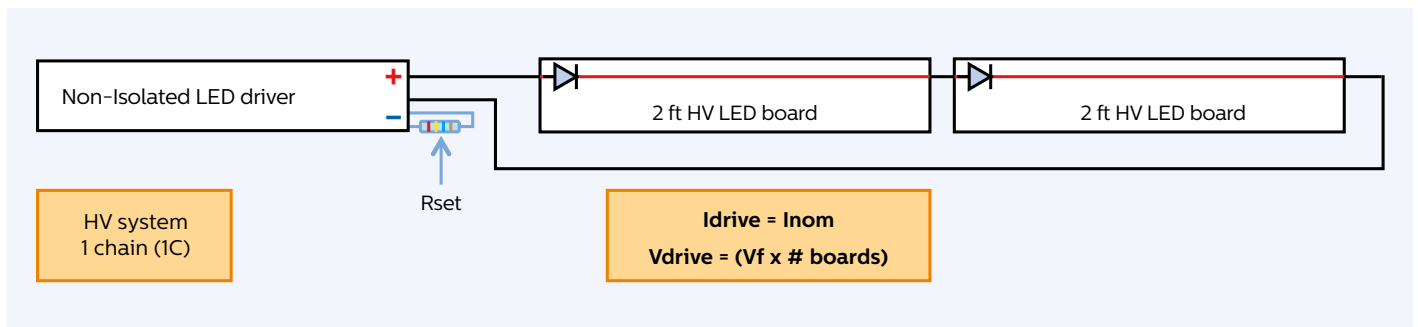


Flux and efficacy versus temperature at Tc

	Tc [°C]	Flux [%]	Efficacy [%]
(Tc-life)	75	95%	96%
	70	96%	97%
	65	97%	98%
	60	98%	98%
	55	99%	99%
(Tc-nom)	50	100%	100%
	45	101%	101%
	40	102%	102%
	35	103%	102%
	30	104%	103%
	25	105%	104%
	20	106%	104%
	15	107%	105%
	10	108%	106%
	5	109%	107%
(0 degC)	0	110%	107%

Wiring schematic

Examples





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04/2015
Data subject to change