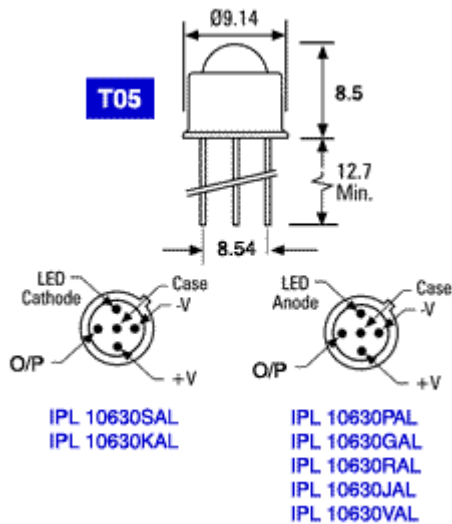




IPL 10630 Series Self Monitoring Emitters

This range of devices is of use where a visible light or IR source is required to be maintained at a level with greater short and long term stability than may be obtained from simple LEDs. A photoamplifier is incorporated within the package so that a voltage signal proportional to the brightness is available. This signal may be used in a simple closed loop to maintain a high degree of stability in the emitted light. Alternative configurations allow the brightness to be adjusted under the precise control of a linear signal. These devices lend themselves to a host of applications including turbidity monitoring and pollution control both in the liquid and gaseous phases.




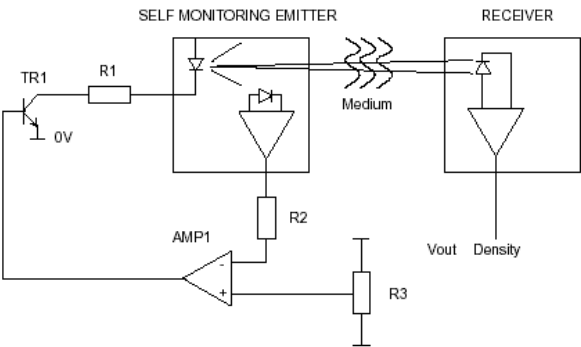
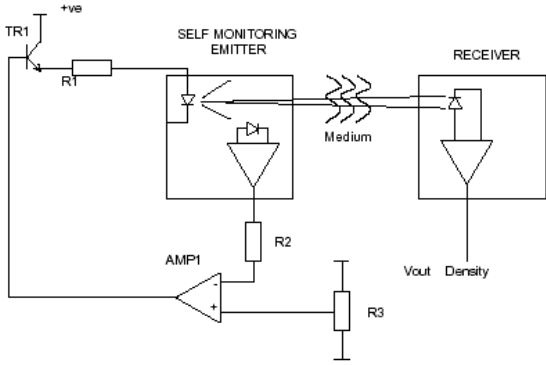

Product Data

IPL 10630 Series -- Hybrid Emitters

(Single or Dual rail $\pm 2\text{v}$ to $\pm 18\text{v}$)

DEVICE	Colour	Wavelength	FWHM	LED Current mA		Luminous cd	Irradiance@20mA
				Cont	PEAK		
IPL10630PAL	BLUE	425	75	20	70	0.033	$0.7\mu\text{Wmm}^{-2}$
IPL10630PGAL	GREEN	565	25	40	100	1.66	$0.25\mu\text{Wmm}^{-2}$
IPL10630RAL	YELLOW	585	36	40	100	0.44	$0.08\mu\text{Wmm}^{-2}$
IPL10630SAL	ORANGE	615	25	40	100	7.3	$2.5\mu\text{Wmm}^{-2}$
IPL10630JAL	RED	635	45	40	100	0.6	$0.4\mu\text{Wmm}^{-2}$
IPL10630KAL	IR	880	100	40	100	N/A	$3.0\mu\text{Wmm}^{-2}$
IPL10630VAL	IR	950	70	40	100	N/A	$3.0\mu\text{Wmm}^{-2}$

Application Notes:

 <p>Application Note No. 1</p>	<h3>Closed Loop Control</h3>
<p>10630 Self Monitoring Emitters</p> <p>Typical component types / values for both circuit options.</p> <p>R1 = 100R R2 = 100K R3 = 100K Potentiometer TR1 = medium power NPN transistor or N channel FET (eg BC107) AMP1 = Op-amp (eg CA3140, TLC2082)</p>	<p>The output from the monitoring photodiode may be used to control the current flowing to the LED, in order to maintain a constant light level, irrespective of external ageing or temperature effects. The receiving detector may be used to give an absolute indication of transmissivity through the medium, since light level is held constant.</p> <p>For use with 10630PAL, 10630GAL, 10630RAL, 10630JAL, 10630VAL</p>  <p>For use with 10630SAL, 10630KAL</p>  <p><small>All characteristics are typical values at 25°C. IPL reserves the right to change the product shown on this leaflet in the interests of improved specification. No responsibility is assumed for the use of information contained herein, nor for any infringement of patent or rights of others which may result from such use. No licence is granted by implication or otherwise under any patent or patent right of Integrated Photomatrix Limited or others.</small></p>
	<p>Integrated Photomatrix Limited Paceycombe Way, Poundbury, Dorchester, Dorset, DT1 3SY, England. Telephone : +44 (0)1305 263673 Fax : +44 (0)1305 263670</p>



Application Note No. 2

Pulsed LED Operation

10630 Self Monitoring Emitters

Typical component
types / values for both
circuit options.

R1 = Resistor to set
maximum LED forward
current

TR1 = medium power
NPN / PNP transistor or an
FET

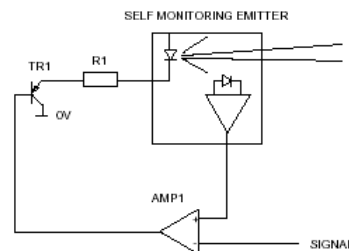
AMP1 = Op-amp
(eg CA3140, TLC2082)

Self Monitoring emitters may be used in a "servo loop" to achieve an led output power which closely follows the input signal.

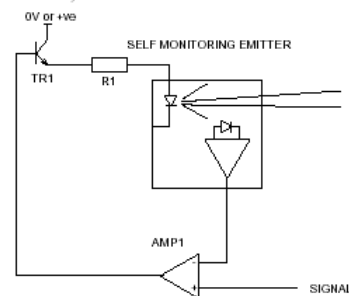
In general the high frequency components of the input signal should not exceed the capability of the monitoring amplifier incorporated within the IPL10630. The frequency response specification of the monitoring circuit within the IPL10630 is different for the LED wavelength in question.
NB. Frequency responses of the IR versions are faster than Red and blue etc.

If the risetime of the input pulse is very small then overshoot of the output light pulse will occur. If necessary the input signal should be filtered (or slugged). Naturally if an amplifier is selected for AMP1 which has a very low slew rate then additional slugging may not be necessary.

For use with 10630PAL, 10630GAL, 10630RAL, 10630JAL,
10630VAL



For use with 10630SAL, 10630KAL



All characteristics are typical values at 22°C. IPL reserves the right to change the product shown on this leaflet in the interests of improved specification. No responsibility is assumed for the use of information contained herein, nor for any infringement of patent or rights of others which may result from such use. No licence is granted by implication or otherwise under any patent or patent right of Integrated Photomatrix Limited or others.



Integrated Photomatrix Limited

Paceycombe Way, Poundbury, Dorchester, Dorset, DT1 3SY, England.

Telephone : +44 (0)1305 263673

Fax : +44 (0)1305 263679

e-mail: sales@ipl-uk.com

Web Site: <http://www.ipl-uk.com>