Background estimates without dedicated measurements

1 IRAS-IRSKY

http://www.ipac.caltech.edu/ipac/services/ibis/irsky.html

Capabilities of the tool:

- Images from the all-sky IRAS Survey Atlas, with a resolution of 4' in each of the IRAS wavelength bands at 12, 25, 60, and 100 μm, with a model of the zodiacal emission subtracted (the interface allows user control of image display parameters)
- Markers overlaid on the images showing the location of entries in the IRAS Point Source and Faint Source Catalogs, as well as the Hubble Space Telescope Guide Star Catalog, and the ISO Observations
- Estimates of the total sky brightness at any wavelength between 5 and 200 um, and estimates of confusion noise due to source crowding and emission structure

Purpose: 'First-look' tool for shape and level of IR background

2 IRAS-HIRES

http://www.ipac.caltech.edu/ipac/iras/iras_data_requests.html

How to submit a data request and retrieve the data:

- get data request form from:
  hires-req@ipac.caltech.edu
  where dataproduct = addscan, fresco or hires
- send filled in form to:
  hires@ipac.caltech.edu
  where dataproduct = addscan, fresco or hires
- you are notified when the requested dataset can be retrieved from the public ftp area

HIRES can produce resolution of better than an arcminute, up to roughly five times the unenhanced resolution.

Purpose: Detailed background studies and simulations of observations

3 COBE-IRSKY

http://www.ipac.caltech.edu/ipac/services/ibis/irsky.html
(Estimates of background using the COBE DIRBE data, Caution: Values given correspond to 90° elongation !!)
Purpose: 'First-look' tool for shape and level of IR background on large scales (COBE beam: 42□′ !)

4 COBE-Archive

http://www.gsfc.nasa.gov/astro/cobe/cgis.html
(data retrieval: anonymous ftp from rosette.gsfc.nasa.gov, get pub/cobe-gi/*, bit difficult to install, but provides full access to COBE DIRBE data)
Purpose: tool for shape and level of IR background on large scales (COBE beam: $42\square'$, for a certain solar elongation)

5 ISO Archive

http://pma.iso.vilspa.esa.es/obscat/app_intro.html

How to look for appropriate observations and get the data:

- Start PMA applet
- Fill in query request, specifying the position and a radius around your target, all instrument modes, all data quality to get a good overview of the data available

Purpose: Make use of data sets taken with the same satellite, sometimes with the same instrument. Correct for different solar aspect angles.

6 Zodiacal Light Models

There are several Zodiacal Light models available, either based on IRAS, COBE or on ISO data. They predict the absolute flux level and the spectral shape of the zodiacal light depending on solar elongation and ecliptic latitude.

Approximate formula:
http://www.vilspa.esa.es/manuals/iso_cam/node106.html
http://www.iso.vilspa.esa.es/manuals/ISO_man/node32.html

Further reading:
http://www.iso.vilspa.esa.es/meetings/paris/Paris_abstracts/node68.html
http://www.iso.vilspa.esa.es/meetings/isopeaks/abraham/
http://www.iso.vilspa.esa.es/ISO/AandA/I0048.html
http://www.iso.vilspa.esa.es/meetings/fs_ws/fs_ws_abs.html